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# Population Size and Incumbency in Canadian Municipal Elections: Two Essays

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UNIVERSITY OF CALGARY

Population Size and Incumbency in Canadian Municipal Elections: Two Essays

by

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A THESIS

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## **Abstract**

In this thesis, I measure the relationship between the electoral success of municipal incumbents and municipal population size in Canada. I first ask how municipal incumbent success rates vary by municipal population size, and discover that acclamations drive overall population-size based trends of municipal incumbent success in Canada. Using an original dataset and a novel modeling approach that accounts for acclaimed incumbents, I find that municipal incumbent success rates generally fall as municipal population size increases. Furthermore, this relationship is particularly strong in Quebec. After excluding acclamations from the analysis, incumbent success rates increase as population size increases. Thus, voters in large municipalities favour incumbents when compared to their counterparts in smaller municipalities. To further investigate this trend, I then ask how the strength of an incumbency cue changes depending on population size, and find that incumbency cues have a stronger effect in larger municipalities. Taken together, these findings reveal that size-related patterns municipal incumbency in Canada are likely dependent on how voters from different sized municipalities process political information and view incumbent candidates.

## **Preface**

This thesis is original, unpublished, independent work by the author, R. Merrill.

## Acknowledgements

This thesis would not have been possible without the support I received from many friends, mentors, and colleagues. As such, I feel the need to repeat the cliché that space does not allow me to mention everyone, even though I wish I could. However, I would be remiss if I did not acknowledge those who contributed most to my development as a graduate student.

First is Dr. Jack Lucas, my thesis supervisor and mentor. I met Jack when he asked me to be his research assistant on the Canadian Municipal Barometer project. There, I was exposed to the process of formulating and carrying out a large research project for the first time. Without his confidence in my abilities and his willingness to trust me to complete large and ambitious projects, my course through life and academia would be drastically different – and, I fear, far less happy and fulfilling. I also began a serious pursuit of quantitative analysis under his guidance. Statistical analysis has become something I thoroughly enjoy but that I never would have previously thought I could do. I am forever indebted to Jack for his desire to reach out to those – like me – who lack other sources of advice on the ins and outs of academia.

I also want to thank my many other professors at the Department of Political Science of the University of Calgary. I am only able to mention a couple by name. I have been in Dr. Susan Franceschet's courses more than anyone else's, and her example of uncompromising critical thought and a careful theoretical consideration of social and political issues are attributes I continue to aspire to. Dr. Pablo Policzer was the Honour's Program Director during my time as an undergraduate honours student. His pragmatic, open approach to political analysis, and his superlatively well planned introduction of his honours students to the classical political science literature have shaped the foundation of my own understanding about political life. I also want to thank Denise Retzlaff, the Graduate Program Administrator. She goes above and beyond to ensure that the department's graduate students succeed. Her expertise considerate approach to aiding students immensely enriched my experience as a Masters

student.

Finally, I want to thank my family. My parents have supported me academic journey at every turn. Their first priority has always been my own freedom to pursue my goals and interests, and I am so grateful for their unconditional support. My wife Lita has been my most steady and faithful companion. Her support and encouragement are indispensable. My young daughters, Aurora and Magnolia, are also heroes of my academic journey. It is not easy for them to let me work when a pandemic keeps me in the house but out of reach for hours every day. Yet, they have gracefully accepted the necessities of a work-from-home lifestyle.

## **Dedication**

To Lita, Aurora, and Magnolia.

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# Chapter 1: Considering Municipal Size in Politics

## The Puzzle of Incumbency and Population Size

This thesis examines the relationship between population size and incumbency in Canadian municipalities. Incumbency is a key factor of electoral politics: scholarship in Canada and the United States shows that being an incumbent dramatically increases a candidate's chance of being re-elected in every order of government (Erikson 1971; Fowler 2016; Jacobson 2009; Kendall and Rekkas 2012; Lucas 2019; Trounstone 2011). While Canadian research on incumbency is still in its early stages, the existing literature shows that Canadian municipalities have exceptionally high incumbent success rates (Lucas 2019). These high success rates raise questions about whether incumbent candidates hold an undemocratic advantage (Breux and Couture 2018c). As such, further research on the causes of incumbent success in Canadian municipalities should be a high priority.

One area of the incumbency literature that has not been well explored is how the effects of incumbent status change depending on a municipality's size. Furthermore, the findings that do exist in this area make it difficult to assess how population size might correlate with incumbent success rates. In Canada, Kushner, Siegel, and Stanwick (1997) provide the only study that uses population size as a variable in its analysis. They used a sample of municipal election results for the years 1982, 1988, and 1994 in Ontario and found that incumbent success rates increase as population size increases. They found that in municipalities larger than 100,000, incumbents enjoyed an average success rate of 86%. In comparison, in municipalities between 10,000 to 100,000 in size, incumbent success rates were only 27%. This is a threefold decrease in the likelihood of being elected as an incumbent – a change which suggests that population size taps into significant aspects of incumbency.

In contrast, the comparative literature gives a wide variety of answers to the question of how incumbent varies by population size. Freier (2015), who studied mayoral elections in

the German state of Bavaria between 1945 and 2012, also found that incumbent candidates appear to do better in the elections of larger municipalities, but the difference was very small. Finally, and in opposition to the previous two studies, Ryšavý and Bernard (2013) found municipal incumbent success rates in the Czech Republic's largest municipalities between 1998 and 2006 were up to 25% lower than in the smaller municipalities.

We can also find some indication of how incumbency and population size relate by looking at research done in Canada's big cities, where incumbent success rates are very high. Between 2003 and 2006 Toronto had an incumbent success rate of 93% (Moore, McGregor, and Stephenson 2015), and in Calgary and Edmonton incumbent success rates have been above 80% since the 1930s (Lucas and Sayers 2018). Kushner, Siegel, and Stanwick (2001) also find that, between 1982 and 1997, incumbent mayors in Canadian cities larger than 100,000 were elected 84% of the time. Finally, Lucas (2019) measured incumbent success in Calgary, Edmonton, Vancouver, and Winnipeg, and found that in elections since the 1970s incumbent candidates were 58% more likely to be elected than non-incumbents. These findings, interpreted alongside those of Kushner, Siegel, and Stanwick (1997), suggest that incumbent success rates are higher in larger municipalities. There is, however, no firm evidence to support such a claim.

Attempting to make an informed guess on the basis of variables that are only *related* to incumbency and population size is also somewhat puzzling. This is because the small amount of existing evidence has unclear implications. One potential variable we could look to for clues is the size of government – which has been argued to have a large effect upon the way a government functions (White 1990). While it is obviously true that the size of government generally increases as municipal population size increases, if the size of government were a significant factor in incumbent success then we could expect to see much higher incumbent success rates at Canada's provincial and federal elections. This, however, is not the case. In the entire history of Canadian parliamentary elections, only 77.3% of incumbents who

run are re-elected and only 10% of that success is attributable to the incumbency advantage (Kendall and Rekkas 2012). This incumbent success rate is significantly lower than the recent estimates of municipal incumbent success found in Moore, McGregor, and Stephenson (2015) and Lucas and Sayers (2018). It is also possible to compare the effect of the size of government in terms of the incumbency *advantage*, which is defined as the electoral advantages enjoyed by exclusively by incumbent candidates as a result of their incumbent status.<sup>1</sup> Studying the incumbency advantage at the federal level, Kendall and Rekkas (2012) found that the incumbency advantage causes a 10% in the probability of being running in and winning the next election. This estimate is much smaller than the 30% incumbency advantage that Lucas (2019) found at the municipal level for a similar time period.

Perhaps the size of government is a poor predictor of incumbency success because many other factors also vary as government size increases. Turning to other potential correlates of population size, intuition would suggest that greater population size leads to more *salient* elections, which could affect vote choice. In terms of municipal politics, the largest urban centres govern on many of the same issues that smaller municipalities do while also engaging with additional policy areas, such as city transit, economic planning, and homelessness (Lucas and Smith 2019; Peterson 1981). Yet, incumbent success rates at the federal level – where healthcare, defence, and economic policies are determined – are lower than those found in the biggest Canadian cities (Kendall and Rekkas 2012; Lucas and Sayers 2018; Moore, McGregor, and Stephenson 2015).

Still, there is some evidence that salience has an effect on incumbent success. Comparing mayoral, state legislative, gubernatorial, and Congressional elections, Fowler (2016) finds evidence that as the salience of an election increases, the amount of available information about candidates also increases. This process allows electors to base their vote on many other characteristics in addition to incumbency. Furthermore, because simple cues are most

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<sup>1</sup>I provide a detailed description of how the incumbency advantage is different from incumbent success in Chapter 2.

powerful in low-information contests (Moore, McGregor, and Stephenson 2015), this salience dynamic would likely weaken the strength of the incumbency advantage wherever elections are highly salient (Fowler 2018). However, if this were true at the local level in Canada, we would expect lower incumbency advantages in larger municipalities because this is where salience is likely highest – because voters rely upon the incumbency cue when they have limited knowledge of candidates, information in addition to the incumbency cue would weaken its strength (Fowler 2018). However, the limited amount of existing data we have in Canada suggests that the opposite occurs here – in the largest cities, incumbents likely experience some of the largest incumbency advantages out of any elected officials in the country. As a result, electoral salience does not solve the puzzle of how incumbent success is affected by population size.

Thus, the question of population size and municipal incumbent success presents a very interesting social scientific puzzle. The Canadian literature on the subject is limited to a single province that only studied elections that are now decades old (Kushner, Siegel, and Stanwick 1997). Similarly, the comparative literature does not include recent and comprehensive national studies of incumbent success across a broad range of population sizes. Arguments about the effects of electoral salience or the size of government also fail to align with what we do know about incumbent success in Canada. To help resolve these problems, I ask the following two questions:

1. How do incumbent success rates vary across a full range of municipal population sizes?
2. How does the strength of the incumbency cue vary depending on municipal population size?

These questions each tap into a key element of how incumbency affects elections. The first question is answered in chapter 4, which measures how municipal population size correlates

with incumbent success rates across a broad range of Canadian municipalities. By discovering how incumbent success varies by population size I provide a general perspective on population size in municipal politics, such as how social or informational processes might be affected differently across population sizes. There are many research designs that would help elaborate the findings presented in this first study. I follow one potential line of investigation by studying the relationship between the incumbency cue and population size in Chapter 5: *The Incumbency Cue*. There, I estimate how the incumbency cue varies by population size. By studying the incumbency cue I illustrate that cues and other informational processes have important implications for electoral politics in Canadian municipalities. These studies are both steps toward an improved understanding of the relationship between population size and incumbency.

In the next section, I will explain how my findings in these two studies contribute to the incumbency literature.

## **Broadening the Scope of Municipal Incumbency Research**

### **Empirical Contributions**

Existing studies have included some of the largest Canadian municipalities, either via case studies or deep historical analysis (Lucas and Sayers 2018; Lucas 2019; Moore, McGregor, and Stephenson 2015), municipal incumbency in a single province (Breux and Couture 2018b; Kushner, Siegel, and Stanwick 1997; Lucas, McGregor, and Tuxhorn 2021; Sancton 2018), or mayors from a more varied range of municipalities across Canada (Kushner, Siegel, and Stanwick 2001). Instead of using a similar research design, in this thesis I use complete elections data from every municipality in Canada's four largest provinces: Alberta, British Columbia, Ontario, and Quebec. Using complete results from multiple provinces has two major strengths. First, by including multiple provinces, this approach enhances generaliz-



ability because it allows for more geographical and institutional variation. Using a full range of municipal sizes also makes these findings more generalizable than previous studies of incumbent success, which typically focused on larger municipalities. Furthermore, any prior work that has included a full range of population sizes did so using sample data and never included multiple provinces. In contrast, this project employs the full statistical population of municipalities in the four provinces that it analyzes. Thus, the data used in this thesis is the most size-varied and geographically diverse group of Canadian municipal election results ever used in a study of municipal incumbent success in Canada.

Municipal elections data is becoming more accessible than ever – something that made this project possible. While new data facilitates research in areas that have not previously been explored, this expanded range of available elections results also makes it necessary to contextualize the broadened range of municipalities that are now available for study. One of the most notable additions to the municipal elections data that has recently become available is a vast increase in the number of results from Canada’s smallest municipalities. This is a key motivation for my choice to study population size – while it is a relatively simple and easily accessible variable, there is great potential for it to efficiently reveal new findings on Canadian municipal politics. This is due to the combined effect of municipal population size being an under-analyzed variable in Canadian municipal politics, and that it so closely describes the recently expanded scope of municipal election results.

It will soon be relatively easy to study elections results from nearly *every* Canadian municipality – regardless of size or region. As such, in the future, it will become even more important to understand the size-related dynamics of such a diverse array of electoral contexts. As I will show in the Data and Methods chapter, the number of Canadians living outside the usual scope of the Canadian incumbency research is significant. By studying incumbency in this newly expanding municipal elections data this thesis facilitates more fine-grained work on municipal incumbency in Canada.

## Theoretical Contributions

In addition to its empirical contribution, this thesis investigates some of the foundational elements of elections. As we have already seen, incumbency accounts for a healthy majority of electoral success in many of Canada's largest cities (Lucas 2019), and has a significant effect on elections nearly everywhere and in every time period that it has been measured Trounstein (2011). Likewise, population size is important to many political processes. It influences processes of political information (Lassen 2005; Fowler 2018), voter attitudes (Lassen and Serritzlew 2011), group dynamics and intergroup interactions (P. H. Fischer 1953; Slater 1958; J. Smith 1988; Dahl and Tufte 1973), and political engagement and participation (Dahl and Tufte 1973; Kushner, Siegel, and Stanwick 1997; Verba and Nie 1987). As such, studying the relationship between population size and incumbency is one avenue towards finding important new dynamics in municipal politics and democracy.

This thesis also engages with the theoretically important question of whether incumbency provides an undemocratic advantage in elections. One theme of earlier research has been a desire to determine whether high rates of incumbent success are a symptom of poor democratic health (Breux and Couture 2018a; Erikson 1971; Fowler 2016; Zaller 1998). The legitimacy of this debate relies upon whether high rates of incumbent success are necessarily due to an incumbency advantage. In this debate, the alternative explanation for high rates of incumbent success is that incumbents are more successful simply because they are higher quality candidates, with high incumbent success rates being merely a result of this fact (Erikson 1971; Zaller 1998).

Some work claims that local politics is democratically compromised due to the incumbency advantage (Breux and Couture 2018a), and, at least in many of the biggest Canadian cities, incumbent success *is* largely the result of an incumbency advantage (Lucas 2019). These things provide additional reason to be suspicious of the influence of incumbency on democratic well-being, especially in municipalities. This project helps broaden discussion on this

topic by testing the affect of incumbency in a range of municipalities that has not been previously studied.

## **Conclusion**

There is no clear way to interpret current findings on how population size and incumbency relate. To help solve this problem, I provide two related studies on population size and incumbency. First, I investigate how municipal incumbent success rates correlate with population size in Canada. Second, I ask how the strength of the incumbency cue's effect varies by population size. The plan for the remaining chapters of this thesis are as follows: Chapter 2 presents the theoretical framework and concepts that shape this project. Then, Chapter 3 explains the research design and data collection methods used in the two studies that follow it. I then present my answer to each research question in two studies: Chapters 4 and 5. Finally, in Chapter 6 I conclude by explaining how this project's findings clarify the puzzle of municipal incumbency and population size. In the final chapter I also provide a rough synthesis of the findings presented in the prior two studies by making preliminary estimates of how the incumbency cue might affect incumbent success rates in Canada.

I find interesting answers to both of this project's research questions. In Chapter 4, I find that incumbent success rates are higher in small municipalities than they are in larger ones. This is the reverse of what was expected, based on what little directly relevant evidence there is in the Canadian literature (Kushner, Siegel, and Stanwick 1997). Using the limited number of other studies that include population size in their analysis, this finding also contradicts nearly all the patterns that we can observe in other orders of government and in other countries (Fowler 2016; Freier 2015; Kendall and Rekkas 2012; Kushner, Siegel, and Stanwick 2001; Lucas and Sayers 2018; Lucas 2019; Moore, McGregor, and Stephenson 2015; Ryšavý and Bernard 2013; Trounstine 2011). The stark divergence of my findings from the existing literature is largely due to a surprisingly high rate of incumbents running

uncontested in smaller municipalities – a feature of small local elections that has, to this point, been largely overlooked by political scientists. Once acclamations are removed from the analysis, our expectations about incumbent success in Canadian municipal are validated – as population size increases, incumbent success rates also increase.

Then, in Chapter 5: *The Incumbency Cue*, I find that residents of larger municipalities are much more likely to vote for the incumbent if incumbent status is cued when compared to their small-town counterparts. This informational dynamic could help explain much of the current confusion in how incumbency functions in different contexts. Salience, size of government, and likely many other correlates of incumbent success seem to be influenced by variation in the strength of the incumbency cue (See Fowler 2016, 2018). This finding also provides a potential explanation for why incumbent success rates increase with population size – once they are separated from the effect of acclamations.

## Chapter 2: The Determinants of Incumbent Success

This chapter provides the conceptual and theoretical details needed to operationalize the analyses of the preceding two chapters and how their results should be interpreted in terms of their relationship to theories on incumbent success or population size. I begin by making the essential distinction between incumbent success and the incumbency advantage by explaining how the latter differs from candidate quality. I then summarize the components of candidate quality and the incumbency advantage. Because this thesis' second empirical chapter focuses on the incumbency cue, I give special attention to this component of the incumbency advantage. Then, in the latter half of the chapter I address how population size is conceived of in this project and how political theories on population size relate to the questions of municipal incumbent success.

### Disentangling Incumbent Success and the Incumbency Advantage

The concept of incumbent success is more complex than it first appears. This complexity arises because of the difference between *incumbent success* and the closely related concept of an *incumbency advantage*. I will begin at the most basic level by defining incumbent candidates as candidates in elections who are running for the same seat they won in the preceding election. Thus, incumbent candidates, at the time of an election, already hold the office they are running to be elected in. As such, incumbent candidates are seeking *re-election*. Furthermore, an *incumbent success* is simply an instance of an incumbent candidate being elected. Next, I will define the *incumbency advantage* and explain how it is different from *candidate quality* and incumbent success. Figure 1 depicts these distinctions.

A definition of the incumbency advantage can most easily be given by first defining what it is not. As shown in Figure 1, incumbent success is the result of a combination of two separate causes: *candidate quality* and the *incumbency advantage*. Candidate quality consists of all

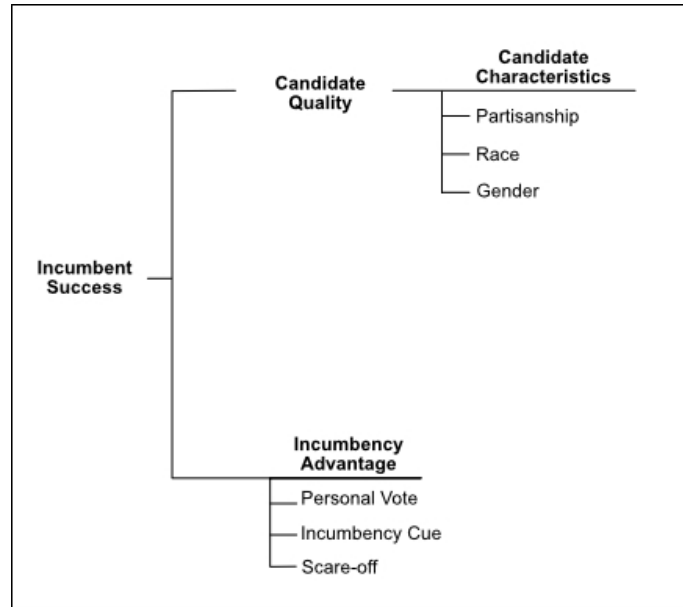


Figure 1: The Determinants of Incumbent Success

the personal characteristics which voters use to judge how well a candidate will perform as their political representative. These characteristics include a diverse array of attributes, such as gender, race, partisanship, professional background, and experience. Taken together, such characteristics determine how “electable” a candidate is. In contrast, the *incumbency advantage* consists of all the electoral advantages accrued by incumbent candidates as a direct result of their incumbent status. Note too, that candidate quality is bound to a certain electoral contest – Jyoti Gondek was a generally high quality candidate in Calgary’s most recent election, but was likely lower quality in the city’s most conservative suburban areas.

A primary reason that scholars study the incumbency advantage is that incumbents have consistently been found to perform better than non-incumbents in elections (Erikson 1971; Fowler 2016; Kendall and Rekkas 2012; Lucas 2019; Trounstine 2011). Of course, it is not intuitively clear that incumbent success occurs due to an advantage. For instance, incumbent candidates may always have been *better* candidates, starting with when they first ran for office. If this is the case, then incumbents could simply continue to benefit from their higher

quality at the polls without any advantage accrued as a result of their incumbent status (Erikson 1971; Erikson and Titiunik 2015; Zaller 1998). As a result, disentangling the causes of incumbent success is a primary objective of the incumbency literature.

In table 1, I summarize the terminology I have introduced here. I then provide further examples of the components of candidate quality and the incumbency advantage in the following paragraph.

Table 1: Key Incumbency Definitions

Term	Definition
Incumbent Candidate	A candidate who is running for the seat they held during their preceding term in office.
Incumbent Success	An incidence of an incumbent candidate winning an election.
Candidate Quality	All those personal characteristics that contribute to an electoral candidate’s chance of being elected.
Incumbency Advantage	The direct benefits, in terms of their advantages in elections, that result from incumbent status.

The components of the incumbency advantage include: (1) the incumbent’s personal connections to constituents, which are fostered through the perquisites of office (the personal vote) (Ansolabehere, Snyder, and Stewart 2000; King 1991; Desposato and Petrocik 2003); (2) informational advantages because constituents view incumbent status as a signal of candidate quality (the incumbency cue) (Adams, Lascher, and Martin 2021; Fowler 2018); and (3), reduced competition because those who might be able to defeat incumbents know that they perform very well in elections, and may choose not to run against them as a result (the scare-off effect) (Cox and Morgenstern 1993; Hirano and Snyder, Jr. 2009; Hall and Snyder 2015; Levitt and Wolfram 1997). These components are summarized in Table 2.

Table 2: Components of the Incumbency Advantage

Term	Definition	Mechanism
(1) Personal vote	The personal connections that incumbents are able to foster with constituents because of their incumbent status	Publicly funded communication with constituents, constituency service, etc...
(2) Incumbency cues	Voters are cued to a candidate's incumbent status	– Candidate Quality, Experience Governing, etc...
(3) Scare-off effect	Potential electoral challengers are “scared-off” of running in elections against incumbents	– Challenger awareness of the incumbent being high quality, or knowledge of the incumbency advantage

All the components of the incumbency advantage can, and likely do, contribute advantage simultaneously, regardless of an incumbent's candidate quality. Thus, there is no necessary connection between candidate quality and the incumbency advantage. For instance, it is entirely possible that when a candidate first ran for office *all* candidates, including themselves, were low-quality. Thus, they became the incumbent candidate in the subsequent election with relative ease. Because of this, it is important to determine the causes of incumbent success. Incumbent candidates could be winning due to their personal candidate quality, or due to the advantages that incumbent status provides them, or due to a combination of the two. Thus, the thing that is of most interest to scholars of incumbency is *how much* of incumbent success can be attributed to the incumbency advantage.

The following section provides a comprehensive view of how incumbent success operates. As such, it helps to situate this project's questions within the broader incumbency literature. I begin by summarizing the components of candidate quality.



## Cues and Candidate Quality

In this section, I discuss components of candidate quality, which consists of all the personal attributes of candidates in elections. These attributes affect electoral success because they are used by voters to judge how well candidates will represent them if they are elected. The characteristics most frequently discussed in the literature are race, gender, and partisanship, (Crowder-Meyer et al. 2020; Dolan 2008; Koch 2000; McGregor et al. 2017; Sanbonmatsu 2002). These are simply a small selection of the attributes that likely affect candidate quality, and others, such as age, occupation, or religious affiliation, likely also play significant roles.

It is important to consider candidate characteristics in terms of affinity voting, which occurs when “voters invoke baseline preferences for candidates on the basis of shared gender, racial or other highly visible sociodemographic characteristics” (McGregor et al. 2017, 135). Studying affinity voting is also informative in studies of incumbent success because comparing the relative effect of candidate quality to the incumbency advantage can help us understand how well voters are able to select political representatives that fit their preferences (Fowler 2016; McGregor et al. 2017).

The current focus on cues has come as the political science literature undergoes a shift toward a new way of thinking about voter decision-making. Unlike what was assumed in the classic texts of democratic theory, recent findings from political psychology have shown that voters typically know very little about politics and political candidates (Achen and Bartels 2017). This relative ignorance results in a tendency to make political decisions using heuristics that are formed using very simple types of information (Achen and Bartels 2017; Crowder-Meyer, Gadarian, and Trounstein 2020). Most often, these, heuristics are based upon simple knowledge, which has often been termed to constitute a *cue*. In terms of candidate quality, cues also play an important role because its components – such as race, gender, and partisanship – typically have an effect in elections when voters are cued to a candidate’s status in terms of these attributes. Recall here that candidate quality simply

refers to how “electable” a certain candidate is in a given electoral contest.

Following the reception of a cue, the process of making inferences is accomplished by categorizing the candidate through the application of stereotypes (Anderson, McGregor, and Pruyers 2020; Cantor and Mischel 1979; Carmines and Nassar 2021; Crowder-Meyer, Gadarian, and Trounstine 2020; Crowder-Meyer et al. 2020; Koch 2000; Ondercin and Fulton 2020; Sanbonmatsu 2002). Examples include a racial cue being used to make a general assumption about how fit a candidate is for office (Crowder-Meyer, Gadarian, and Trounstine 2020), a gender cue being used to infer the ideology of a candidate (Sanbonmatsu 2002), or a partisan cue leading to inferences about a candidate’s issue positions, or at least that the candidate is a member of the voter’s political in-group (Achen and Bartels 2017; Conover and Feldman 1982).

## **The Components of The Incumbency Advantage**

The summary of findings on the components of the incumbency advantage that follows further illustrates the distinction between candidate quality and the incumbency advantage. From the discussions that follow, it is apparent that the personal vote, the scare-off effect, and the incumbency cue are distinct from candidate quality. This section also helps us interpret differences in estimates of incumbent success and the incumbency advantage that arise in different context. Recall that the incumbency advantage is composed of three major components: the personal vote (Carson, Engstrom, and Roberts 2007; Desposato and Petrocik 2003; Lucas, McGregor, and Tuxhorn 2021), and the scare-off effect (Hall and Snyder 2015; Levitt and Wolfram 1997), the incumbency cue (Adams, Lascher, and Martin 2021; Ansolabehere et al. 2006; Fowler 2018; Moore, McGregor, and Stephenson 2015). Given that Chapter 4: *Measuring Incumbent Success* deals exclusively with the incumbency cue, I conclude this section by giving it special attention.

## Personal vote

One component of the incumbency advantage is the personal vote. Simply put, the personal vote constitutes “the relationship and reputation that incumbents cultivate with their constituents” (Lucas, McGregor, and Tuxhorn 2021, 1). It is fostered through incumbents bringing government spending to their constituencies (Ansolabehere, Snyder, and Stewart 2000); constituency service, such as helping constituents navigate bureaucratic structures (King 1991); and public funding for communication with constituents (Desposato and Petrocik 2003). Some may also justifiably think that since the personal vote seems to tap into “likability”, it is closely related to incumbent quality. However, the personal vote has nothing to do with likability *per se*. Rather, the personal vote can be distinguished from candidate quality by defining the personal vote as the *increase* in reputation above and beyond what the incumbent would receive as a non-incumbent. On the other hand, candidate quality should be thought of as how “electable” candidates are without considering the transient effect that their incumbent status has on voter perceptions. Empirically, we would expect to see that while a candidate is the incumbent they gain benefits at the polls due to the personal vote, but this benefit disappears once they are no longer in office.

Studies of the personal vote have mostly shown that it brings significant benefits to incumbent candidates. In the most recent paper on the subject from the Canadian incumbency literature, Lucas, McGregor, and Tuxhorn (2021) studied the personal vote in a quasi-experiment that was made possible when wards were redistricted in Calgary in 2017. This redistricting provided variation on how long voters had been the incumbent candidate’s constituents by creating “new” voters that had not previously lived in the incumbent’s district. Similarly, those who lived in the district both before and after redistricting were more familiar with the incumbent, resulting in a stronger personal connection to them. Using this method, Lucas, McGregor, and Tuxhorn (2021) found that “new voters” were 10-13% less likely to vote for the incumbent than the “old voters” who had been in the incumbent’s

district prior to redistricting. This effect is much stronger than similar estimates made using other quasi-experimental conditions where there were “old voter” and “new voters” (Ansolabehere, Snyder, and Stewart 2000; Desposato and Petrocik 2003). This suggests that the personal vote plays a sizable strong role in the municipal incumbency advantage in Canada, however, it is likely that other elements of the incumbency advantage play an even larger role (Lucas, McGregor, and Tuxhorn 2021).

The personal vote is also important for normative reasons. This is because it gives rise to debate over whether personal connections to incumbents lead to negative outcomes for voters. There are two main stances on this issue, the first being that the personal vote signifies that incumbents are “closest to the people” and are thus highly sensitive to their preferences. In turn, this makes them able to represent voters better (Fourinaies and Hall 2014; Kushner, Siegel, and Stanwick 2001). Opposed to this is the view that the personal vote represents an unfair advantage for incumbents due to their access to additional benefits which aid them in fostering their personal vote. It has been argued that many of those benefits, such as constituency service or publicly funded communication with constituents, enamour voters to the incumbent without any significant gains in the incumbent’s ability to represent them in policy formation Fowler (2016). Thus, by increasing our understanding of the personal vote we are able to receive indications about the quality of representation.

### **Scare-off**

Another element of the incumbency advantage is the scare-off effect. The scare-off effect is the tendency of high-quality challengers to avoid running against an incumbent. This effect exists for two reasons. First, incumbents can be perceived as high-quality in terms of the other candidate characteristics mentioned above, such as partisan, race, gender, and so on Lucas (2019). Second, mere knowledge of the incumbency advantage could discourage challengers from running against an incumbent (Levitt and Wolfram 1997; Cox and Morgenstern 1993).

The scare-off effect can also create a tendency for there to be uncontested races when there is an incumbent running (Cox and Morgenstern 1993). The occurrence of uncontested races is an important consideration because acclamations make vote share and incumbent success rates less straight-forward to operationalize, and also correlate significantly with population size – two issues that are discussed in much greater depth in the Data and Methods section of Chapter 3: *Data and Methods*.

Because so much of scare-off hinges upon the quality of challengers and likely goes beyond simple characteristics to include things such as intelligence, professional background, etc., scholarship on the subject suffers from data availability issues because of the time-consuming nature of gathering data on the background of candidates (see Fowler 2016). Levitt and Wolfram (1997) provide one of the few measurements of the scare-off effect. They studied elections for the U.S. House of Representatives and found that most of the incumbency advantage in their data was due to this effect. However, there is a potential weakness in their approach, which used instances of the same two candidates running against one another in multiple elections to control for variation in candidate quality. Namely, two candidates rarely run against one another more than once, potentially biasing the findings of Levitt and Wolfram (1997) due to factors that are unique to that sort of contest (Hirano and Snyder, Jr. 2009).

More recently, Hirano and Snyder, Jr. (2009) take advantage of the existence of multi-member districts in American state legislatures to obtain variation on the strength of incumbency effects, which they accomplished by measuring the difference between races with a single incumbent candidate and those with more than one. This approach did not generate statistically significant evidence that high-quality challengers are discouraged from running against incumbents. However, a more recent estimate provides a statistically significant estimate of the scare-off effect and finds that it only accounts for 5-7% of the incumbency advantage (Hall and Snyder 2015). Considering that the incumbency advantage has been

theorized to consist of only three main elements, this value constitutes a very small proportion of the overall quantity.

Taken together, these findings are suggestive of the relative importance of the scare-off effect, but we could see different dynamics in Canadian municipal elections. This is because municipal elections here are mostly non-partisan, which could result in a greater scare-off effect due to the complete lack of party-based pressure to run quality candidates, even in closed races (Lucas 2019).

### **The Incumbency Cue**

The third and final component of the incumbency advantage is the incumbency cue. The incumbency cue is likely to have the most decisive effect on electoral outcomes. In a recent paper, Fowler (2018) explains why this is the case. He argues that many explanations of the incumbency advantage, such as publicly funded communication with constituents, corrupt redistricting practices, incumbent financial advantages, and challenger scare-off effects do not adequately account for it. This is because none of these factors are consistently present at different levels of government and for different offices – meanwhile, the incumbency advantage still varies in similar ways in each of these settings over time. As a result, rather than conclude that various factors are all having simultaneous and synchronized effects on the incumbency advantage in these varied settings, it is likely that another, less explored variable is having a prominent effect on all of them. Fowler hypothesized that this less-explored variable is the incumbency cue (Fowler 2018).

The analysis set forth in Fowler (2018) makes several theoretical propositions that are relevant to this thesis. First, in low information settings, voters use incumbent status as a cue of candidate quality, which produces an incumbency advantage. Second, when voters learn that an incumbent only barely won the previous election, the effect of the incumbency advantage is reduced, confirming that voters are in fact using incumbent status as a cue for

candidate quality. Third, the presence of obvious information about incumbency, such as ballots that indicate incumbent status, lead to incumbency having a greater effect. Fourth, voters adjust their voting behaviour in response to polls, suggesting that they are using cues to inform their vote choice (see Sinclair and Plott 2012). Finally, the incumbency effect is weaker in places without free and fair elections, perhaps because electoral fraud makes incumbency a weaker cue of quality.

Aside from Fowler (2018), the incumbency cue has tended to be used as a yardstick that other cues are measures against (see Ansolabehere, Snyder, and Stewart 2000; Ansolabehere et al. 2006; Crowder-Meyer, Gadarian, and Trounstein 2020; Dolan 2008; Goodman and Murray 2007; Kam and Zechmeister 2013). While the number of studies that directly link the incumbency cue to the incumbency advantage is very small, this second group of literature provides key insights into how the incumbency cue functions in elections.

I now turn to the limited number of attempts to measure the effect of the incumbency cue on the overall incumbency advantage. Studying the Toronto's 2014 municipal election, Moore, McGregor, and Stephenson (2015) find that voters who have high knowledge and are attentive to campaigns are less likely to support the incumbent. This suggests that those who receive higher levels of information tend to vote less on the basis of the incumbency cue. Moore, McGregor, and Stephenson (2015) also finds that incumbent support is weakest among those that are least likely to be using an incumbency cue to inform their vote choice: those with low attentiveness and low political knowledge. The reason this group, perhaps counter-intuitively, is least likely to use cues despite their low-knowledge is that they are also inattentive. This low attention, low knowledge group of voters may not even know who the incumbent is, resulting in a much weaker voting pattern among them. This is further supported by the finding that high attention, low knowledge voters supported incumbents more frequently than their low knowledge, low attention counterparts, likely because the more attentive group is more likely to know who the incumbent is (Moore, Mc-

Gregor, and Stephenson 2015). Similarly, those with high knowledge and low attention are the strongest incumbent supporters; perhaps they know that incumbents tend to be high quality candidates while simultaneously not possessing other information, increasing their reliance on the incumbency cue. As a result, it appears incumbents do best when voters are not knowledgeable, but still attentive enough to know who the incumbent is.

In terms of predicting vote share, incumbency also appears to be the strongest *occupational* cue. When occupation is included on the ballot, its use to cue incumbent status is the strongest predictor of the vote, followed by prior political experience. In a study of California state legislators, the marginal effect of incumbency on vote share was 9.2%. In the same model, the marginal effect of prior political experience on vote share was 7.4%. These estimates were three times stronger than the next leading occupational cue, which was small business ownership, at a marginal effect on vote share of 2.2% (Adams, Lascher, and Martin 2021).

## **Expectations**

Taken together, findings on the components of candidate quality and the incumbency advantage tell us a great deal about what we might expect to see in the results I present in Chapters 3 and 4. The component of candidate quality that is of the greatest importance is partisanship, but in Canada, partisanship is largely absent from municipal politics. However, results from Quebec constitute a sizable portion of the data that are analyzed in Chapter 4: *Measuring Incumbent Success*. As a result, we might expect incumbent success rates to be weaker due to the presence of political parties (Fowler 2016; Lucas 2019). Racial and gender variation across my sample are less easy to infer. This section has also shown that their effects operate primarily in both incumbent and non-incumbent races, making them relevant here.

Turning to the components of the incumbency advantage, the scare-off effect may also help us



understand why patterns of acclamation vary so much by population size, which is one of the key findings of Chapter 4. Finally, the findings on the incumbency cue are also important to consider. While it is difficult to know what to expect from a survey experiment, it is evident that incumbency cues play an exceptionally strong role in determining incumbent success. As such, in Chapter 5: *The Incumbency Cue*, I expect to find that incumbency cues have a sizable influence over incumbent support.

## **Size in Politics**

Size is this project's independent variable, and I utilize the same definition of municipal population size used by Statistics Canada. That is, population size is the total number of people living within a given municipality's jurisdiction. This is a readily available and politically relevant measure of size, but other similar demographic measures likely also come to mind. Urbanization is a central concept in municipal politics which does much of the same conceptual work that size accomplishes – some studies of urbanity even use population size as their defining metric, such as McGrane, Berdahl, and Bell (2017), who found that inner city residents tend to be on the left of the political spectrum, while those in suburban, rural, and small urban settings tend towards the right. In contrast, Armstrong, Lucas, and Taylor (2021) utilize urbanity as a latent variable – an unobservable quantity the value of which is inferred using other observable variables. They included population size in this multidimensional measure of urbanity to study the urban/rural partisan divide in Canadian federal politics.

There are several reasons I have chosen to use the simpler population size measure over an urbanity variable. First, population size is likely one of the most universally relevant municipal level variables – the size of a municipality is likely to have profound effects on its political dynamics across a wide range of population sizes. In addition, municipalities may be internally heterogeneous in terms of urbanity and other demographic measures, but it

still would be difficult to argue that population size doesn't distinguish a city like Toronto, Ontario, from a small town, like Moose Jaw, Saskatchewan. While other measures could capture a broader range of municipal characteristics, this thesis demonstrates that population size still provides enough statistical leverage to generate new findings on municipal politics. The findings presented herein also show that population size causes relatively continuous changes in incumbent success rates. This suggests that distinctions based on population size can be relatively fine-grained.

To further demonstrate the utility of size as a political variable, I discuss how it has previously studied in the political science literature. I do so by borrowing from the intellectual history of size in politics that is presented by Dahl and Tufte (1973). I also link this history of size in politics to findings from modern research in this area.

## **A Brief History**

This thesis studies a facet of the much larger and much older question of how the size of a place influences the quality of its democracy. Thinkers have considered this question since the time of Pericles in ancient Athens – the first known democratic polity. These early political philosophers considered small size to be ideal. They argued that a democratic system should be small enough that it fostered personal solidarity among citizens and allowed for direct political participation by all (Dahl and Tufte 1973). From this time up to the early modern period, the theorized primacy of small sized democracies remained essentially unchanged (Dahl and Tufte 1973).

However, perceptions of the virtues of small size began to change during the formative years of the modern state system. Debate over the political institutions of the United States during the drafting of its constitution are perhaps the strongest signal of this shift. One of the key debates at this time was whether a democratic government could succeed even if it was to govern an area larger than any other democracy had (Dahl and Tufte 1973). After

a surprising amount of debate the authors of the American constitution concluded that a democratic republic was the form of government they needed (Dahl and Tufte 1973). Their decision marked a sudden shift in political theories of size, and from that point on, discussion of size by early modern scholars backgrounded discussions of the state in favour of size in other orders of government.

Alexis de Tocqueville wrote about the positive aspects of the politics of the small New England town, and, more generally, of American federalism. In doing so, he continued the theoretical debate on size, while also participating in this theoretical shift to the sub-national (Tocqueville 2009; see Dahl and Tufte 1973). The work of Dahl and Tufte (1973) marks another major shift. Their book studied the relationship between size and democracy at the federal, state/regional/provincial, and municipal levels, and argued that no single size is ideal for democracy. Instead, they argued that there is an inherent trade-off between citizen efficacy, which is the effective control that citizens have of the political system, and system capacity, or the capacity of the political system to pursue its goals, which occurs as the size of a polity increases (Dahl and Tufte 1973).

What I have provided here is only a snapshot of a much larger theoretical evolution of size in politics, however, I have cited the key moments of this evolution, which illustrates how theory has arrived where it is today. The culmination of the theoretical developments noted above has been that modern political scholars interested in size have been primarily focused on the sub-national level. There is still discussion about the size of states, but the debate focuses on the capacity of states in relation to instances of nationalist secession, such as the formation of South Sudan or the break-up of Yugoslavia (Angell and Huseby 2020; Griffiths 2014; “The World’s Youngest Countries” 2018). In such debates the key question is whether a newly seceded state will have the capacity necessary to govern successfully. This thesis, like Dahl and Tufte (1973) and Tocqueville (2009), engages with size and politics at the sub-national level. In this arena, size pertains to a variety of central issues, such as the

utility of federalism, debates over centralization, calls for direct democracy and grassroots politics, and concerns about the capacity of local or regional governments (Dahl and Tufte 1973; Lane and Ersson 2005; Larsen 2002; Mussari and Ruggiero 2017; Oliver 2012).

## **Theories on the Effect of Size**

Dahl and Tufte (1973) conducted the first major modern study of size in their book *Size and Democracy*. The upshot of Dahl and Tufte (1973) is that there is no ideal size for a democracy because as size increases, the effective control citizens have of the system – called citizen efficacy – decreases. This finding remains a touch point for most other studies of size and politics. I will begin by discussing theories of size in local politics. This is a prevalent level of analysis in the size and politics literature, and one that is essential to this project.

The question of size in local politics has been approached in at least two ways. First, scholars have compared local politics to the politics of other orders of government. Second, they have also studied how differences in size between municipalities relates to other aspects of their politics. I begin by focusing on those who have compared local politics to other orders of government. A common theme in such works has been a concern over how much local politics differs from the politics of other orders of government, which has been motivated by a desire to better understand the less-studied local level (Peterson 1981). Such investigations have typically concluded that municipal government is more managerial and thus less politicized than other orders of governments (Higgins 1986; Oliver 2012; Peterson 1981). This had led some scholars to argue that the motivating forces underlying municipal politics are unique, which is what leads to their unique policy processes and electoral dynamics (Oliver 2012; Peterson 1981).

Writing about municipal politics in the United States, Peterson (1981) argued that the key difference between the national, state, and municipal orders of government is whether they are involved in redistributive policy. In this respect, municipalities are unique – they

are mainly concerned with enacting policies that bring general benefits to their residents by focusing on their economic productivity (Peterson 1981). Municipalities are required to pursue such an agenda because if they did otherwise they would attract impoverished residents, which would put them in an unsustainable fiscal position. Thus, for Peterson, municipalities are different from other orders of government not primarily because they are smaller, but because they exist within a larger political system that has a fluid population. For Peterson, this means that “[l]ocal issues are less pressing [and] local conflicts are less intense” (Peterson 1981, 210–11). Studying Canadian municipalities, Higgins (1986) makes similar points.

Oliver (2012) provides a slight elaboration of Peterson’s (1981) argument by focusing solely on electoral politics. Similar to Peterson (1981), he concludes that local politics is managerial, rather than ideological. This is because municipalities are not large enough to become sufficiently diverse for ideological conflicts to emerge. Oliver concludes that the managerial motives of municipalities causes their elections to be an evaluation of the administrative achievements of elected officials rather than the ideologically driven contests that occur in larger orders of government (Hershey and Aldrich 2017; Oliver 2012). Here, his argument borrows from the theory of retrospective voting, in which elections serve as a referendum on the past performance of elected officers (Berry and Howell 2007). In both cases, Oliver (2012) and Peterson (1981) put forth arguments in favour of a categorical difference between municipal politics and politics at other levels of government.

There has also been significant research on size-based differences *among* municipalities. Peterson (1981) provides an early and rigorous evaluation in this area by drawing a distinction between the small suburb and the larger inner city. He argued that suburbs are typically divided into many small units, which, as a result, are relatively socially homogeneous. This allows them to bring uniform benefits to their populations and focus on competing with one another in order to increase their tax base. In contrast, inner cities are necessarily large and

have socially diverse populations as a result. Because they are socially diverse, inner cities cannot avoid engaging in *some* redistributive politics. Thus, the very largest municipalities are sometimes large enough to obtain some characteristics of their more redistributive counterparts at the state and national levels, making their politics becomes more contentious, and more importantly, ideological.

Thus, there have been several studies that have found municipal politics is less contentious and less ideological than the politics of other orders of government (Oliver 2012; Peterson 1981; Higgins 1986). These works come to their conclusions using distinct causal mechanisms, which renders them unable to provide strong indications of what modes of investigation would yield the greatest results in future studies. Luckily, later works help clarify which findings should continue to inform our ideas about municipal politics. While municipal politics may be less overtly ideological, labour/left based parties do occasionally emerge, which are then followed by a general trend of municipal partisanship (Lightbody 1978; Lucas 2019). This finding discounts the possibility that municipal politics is necessarily non-contentious; a perspective that is espoused by Oliver (2012).

In contrast, that periods of partisanship exist supports the findings of Peterson (1981), who argued that redistribution – a key concern of the left – makes politics more ideological when it becomes part of the municipal agenda. Most important to my thesis is that when partisanship is present in local elections, the incumbency advantage is weakened (Lucas 2019). Furthermore, this weakening could be due to several important mechanisms, such as the weakening of the incumbency cue, or a lack of party-based pressure to run quality candidates in incumbent races (Anderson, McGregor, and Pruyers 2020; Fowler 2016; Goodman and Murray 2007; Lucas 2019). Thus, guided by Peterson (1981), we would expect larger municipalities to be more ideological, and thus have weaker incumbency advantages. Peterson’s (1981) argument – that the size of a municipality indirectly determines how managerial versus ideological its policies are – also generally relates to the argument Dahl and Tufte

(1973) made about the inherent trade-offs of size, lending it further support.

Returning to the issue of municipal uniqueness, the foregoing discussion suggests that while municipal politics is unique, the degree to which it is different from the politics of other order of government may not be necessary or large. In contrast to these earlier theories of size and local politics by Oliver (2012) and Peterson (1981), recent studies have shown that municipal politics is similar to the politics of national and sub-national orders of government in key ways. In the United States, there is evidence that governments make policies in line with the preferences of their electoral base at both municipal and other levels of government, and that these decisions are largely based on partisanship (Einstein and Kogan 2016; Tausanovitch and Warshaw 2014; Warshaw 2019). By combining survey-based data on party support with data on the partisanship of Canadian municipal politicians, Lucas (2020) generates similar findings when he shows that ideological representation is similarly influential in Canadian local politics despite them being officially non-partisan.

So far I have discussed dynamics of municipal economics and social diversity and the consequences they have for partisanship, ideology, and how contentious local politics are. Political participation and representation have also been studied at length in the size and politics literature. Now, in the closing paragraphs of this section I turn to a discussion of these issues.

A debate over the consequences of size in local politics is explained by Sancton, Fowler, and Siegel (2002), where political representation, as well as system capacity, are at issue. In this debate, those in favour of smaller municipalities argue that such municipalities provide more choice for municipal residents, because it enables them to choose between the services and benefits provided by many competing suburban municipalities. On the other side of this debate, it is argued that large municipalities are superior because they are able to govern more efficiently due to economies of scale while not sacrificing the quality of representation. Note the connection between this description by Sancton, Fowler, and Siegel (2002) and Peterson's (1981) theory of inter-municipal competition.

Kushner and Siegel (2003) test whether the objectives of those who argue in favour of large municipalities are realized in practice. They studied a municipal reform that began with the election of Ontario Premier Mike Harris in 1995. One of the goals of the Harris government was to amalgamate municipalities in Ontario in order to reduce costs. The objectives of these amalgamations were to maintain representation while reducing the number of municipal council members and the cost of running Ontario's municipal governments. Kushner and Siegel (2003) evaluated if these amalgamations achieved their objectives by conducting a variety of interviews and surveys of residents and political elites in three newly amalgamated municipalities.

Of Kushner and Siegel's (2003) findings, the most pertinent to this thesis was their conclusion that the quality of representation was reduced among a sizable minority of the municipal residents they surveyed. These residents had lived in some of the smallest communities that were amalgamated, and had typically opposed the reforms the most vigorously. This suggests that residents of smaller municipalities have different values when it comes to representation. Furthermore, C. S. Fischer (1975) found that members of small communities have greater affective attachments to their communities, which supports the idea that residents of these places view representation differently. Adding further support to these findings, Morlan (1984) finds that across a wide range of Western democracies, smaller municipalities enjoy higher levels of political participation (See also Frandsen 2002).

Due to the size related variation that I use in this thesis, the foregoing discussions of how distinct municipalities are from other levels of government is of special interest. Based on the findings of Kushner and Siegel (2003), Lucas (2019), and Peterson (1981) about partisanship and ideology and how they vary due to size, I expect to see evidence of lower levels of competition in the smaller, generally less diverse municipalities. So far I have summarized generally relevant findings related to population size. There are also a few studies that directly investigate municipal incumbent success and population size, which is the central



concern of this thesis.

Ryšavý and Bernard (2013) studied incumbency and competitiveness after a large-scale municipal restructuring took place in the Czech Republic at the end of its communist regime in 1989. This reform resulted in the formation of many very small municipalities, leading to 79% of all Czech municipalities having less than 1,000 residents (Ryšavý and Bernard 2013). This study is especially important to this project because it is the only other work that measures municipal incumbent success while including acclamation in its analysis. Because they account for a substantial proportion of incumbent successes in the smaller municipalities that are studied here, acclamations are an important consideration in this thesis.<sup>2</sup> The inclusion of acclamation allowed Ryšavý and Bernard (2013) to observe a general decrease in electoral competitiveness as population size decreased. This is indicated by the proportion of municipal elections where the number of candidates didn't exceed the number of available seats by at least a factor of two, which was 70% in 1994 and continue to remain above 50% for the entire period studied (Ryšavý and Bernard 2013). Ryšavý and Bernard (2013) also found that the number of candidates who were willing to stand for re-election falls as population size decreases. Of the incumbent who did run for an additional term, 87% were elected in municipalities smaller than 200 residents, and this proportion remains above 75% until the municipal population size exceeds 1,000 (Ryšavý and Bernard 2013). Freier (2015) also included population size when he modeled the mayoral incumbency *advantage* in the German state of Bavaria, but his population estimates were very small.

Kushner, Siegel, and Stanwick (1997) is the only Canadian work to include population size in its measurement of incumbent success, though acclamations were not included in their analysis. Using a sample of municipal election results for the years 1982, 1988, and 1994 in Ontario, they found that incumbent success rates increase as population size increases. In municipalities larger than 100,000, incumbents enjoyed an average success rate of 86%, whereas in municipalities with 10,000 to 100,000 residents incumbent success rates were

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<sup>2</sup>See Chapter 4, Figure 2 for statistics on acclamation in this project's sample.

only 27%. Kushner, Siegel, and Stanwick (1997) also measured incumbent success in municipalities with fewer than 10,000 residents, finding that only 11% percent won, however this estimate was not significant at the 95% confidence level. They also included the number of candidates running for each seat in their models. They found that candidate counts had the largest effect on incumbent success in their smallest population category, with a marginal effect of a 43% decrease in the probability of the incumbent being re-elected. This strikingly large effect of one additional challenger running against the incumbent suggests that race-level competitiveness may hold strong influence over incumbent success rates.<sup>3</sup> Like Ryšavý and Bernard (2013), this suggests that acclamation is an essential consideration when measuring incumbent success in very small municipalities.

### **Information and Municipal Population Size**

Having discussed incumbency cues and population size, I will turn to the relationship between political information and size. Research that investigates the relationship between size and information in elections is limited and has mixed results. However, it does appear that gender and ethnicity cues have similar effects in both small and large municipalities, though the channels through which voters receive those cues may vary (Crowder-Meyer, Gadarian, and Trounstine 2020; Matson and Fine 2006). For the purposes of this project, there is little available evidence to suggest that the effect of cues should vary by population size.

Verba and Nie (1987) proposed the “decline-of-community” model, which posits that the availability of information relates to both the population size of a municipality and how urban it is. In smaller, rural municipalities politics is “closer to the people” in that the social networks and knowledge necessary to participate are more accessible because the political system is simpler. In contrast, in suburban municipalities and up, politics becomes

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<sup>3</sup>Because single-candidate races (acclamations) were not considered, the marginal effect of the candidate count measures the difference between the first challenger and each additional challenger, rather than the effect of an additional candidate in a single candidate race.

more impersonal and complicated and thus more out of reach of citizens as the “social, economic, political, and cultural services” of the community become integrated within a much larger society (Verba and Nie 1987, 231). Based on the “decline of community” model, we would expect smaller municipalities to have more information about candidates and, as a result, produce more knowledgeable voters. As a result, we can also expect voters in small municipalities to be less likely to rely on an incumbency cue because, as Moore, McGregor, and Stephenson (2015) finds, attentive, knowledgeable voters are less likely to vote for incumbents.

It may also be true that in larger municipalities’ news coverage provides a similar level of information about incumbents to those gained through day-to-day social interaction in close-knit communities, but there are likely qualitative difference between these two sources of political information. Kam and Zechmeister (2013) found that even without an incumbency *cue*, name recognition led voters in a hypothetical election to choose candidates whose names they had been previously exposed to. These researchers also found that participants assessed these candidates as more electorally viable, or more likely to be elected. In larger municipalities there is likely also much more *local* information competing for voters’ attention. Thus, voters may be voting for incumbents simply because their name is more familiar due to the exposure the incumbent has accrued during their time in office. This is a different sort of information about the incumbent because it tends to lead voters to support them. In contrast, when the information that many voters possess is richer than a simple name recognition cue, such as what might exist in smaller municipalities, such information appears to *decrease* incumbent support (Moore, McGregor, and Stephenson 2015).

Beyond what I have presented here, literature that provides reliable indications of how size might affect political information are limited. I return to this issue in the Discussion and Conclusion section of Chapter 5: *The Incumbency Cue* section by leveraging some work that has been done in sociology, where I argue that as community size decreases so does the

number of relevant social groups, making it easier for voters to have knowledge of electoral candidates because they are more likely to both be members of the same social group.

## Conclusion

This project is part of a long tradition of studying the ways that size and the quality of democracy relate. Current literature provides puzzling, contradictory findings on how we should expect dynamics of municipal incumbency to change according to municipal population size. First, some of Canada's largest municipalities have exceptionally high incumbent success rates (Lucas and Sayers 2018; Moore, McGregor, and Stephenson 2015). Furthermore, incumbents in these places also enjoy a large incumbency advantage (Lucas 2019). Yet, as size continues to increase and we transition to elections at the federal level, we don't see the benefits that incumbency brings growing in elections with even larger electorates (Kendall and Rekkas 2012). If population size alone, the size of government, or the salience of elections were the primary drivers of variation in incumbent outcomes we would expect to see incumbents enjoy even more success in other orders of Canadian government, but this isn't the case (Fowler 2016; Kendall and Rekkas 2012; White 1990). What little knowledge we have from the available literature on how population size and incumbent success correlate is similarly puzzling. In a study using data from Ontario we see that as population sizes increases, incumbent success rates also increase, yet in other countries research that asks similar questions has yielded much weaker or even contrary results (Freier 2015; Kushner, Siegel, and Stanwick 1997; Ryšavý and Bernard 2013).

In this chapter, I have laid the broad theoretical and conceptual foundations for this project's empirical chapters. I have outlined how the incumbency advantage stems from a single candidate characteristic: incumbent status. I have also explained that other candidate characteristics, such as race, gender, and partisanship, can have potential conditioning effects on how incumbency influences electoral success. On the other hand, incumbent status affords

incumbents an electoral advantage through the channels of the personal vote, the incumbency cue, and the scare-off effect, and these mechanisms appear to overpower the effects of candidate characteristics Goodman and Murray (2007).

To clarify the problem of what size related dynamics are at play in incumbent success and offer potential explanations, this project will investigate the relationship between incumbency and population size through two distinct lenses: the incumbency advantage and incumbent success. In both cases, I find that population size has a significant effect on the electoral outcomes of incumbent races in Canada.

In the next chapter I outline the data and methodology I employ in the empirical analyses of this thesis. Then in Chapter 4, I use a new dataset to study the relationship between size and incumbent success in Canada. In doing so, I discover that acclamations play an important role in how the population size of a municipality correlates with its incumbent success rates. While no certain conclusions about the scare-off effect can be made as a result of this finding, scare-off – because it would lead to a higher incidence of acclamations – is one of the most likely causes of this dynamic. In terms of voting, I find that once acclamations are excluded from the analysis, incumbent success rates increase as population size increases. This has interesting implications for theory on how the incumbency advantage varies in differently sized municipalities.

In Chapter 5, I turn to a direct investigation of the incumbency advantage. I do so by utilizing a survey experiment to measure how the effect of an incumbency cue varies by population size among Ontario residents. I find that voters in larger municipalities are more affected by an incumbency cue, suggesting that the informational processes vary with population size. This project then concludes with a synthesis of the findings from chapters 4 and 5. This synthesis suggests that much of the increase in the likelihood of being elected that incumbents enjoy is due to the effect of the incumbency cue growing as population size increases.

## Chapter 3: Data and Methods

### An Unprecedented Election Results Dataset

Up until recently, analyzing incumbency at every municipal population size would have required that individual researchers obtain data through archival work and manual data entry. Furthermore, the limited nature of elections data was especially prevalent for the smallest municipalities, which account for the vast majority of Canada's municipal governments.<sup>4</sup>

Today, thanks to the efforts of organizations such as the Canadian Municipal Barometer (CMB) and an increase in the availability of open access municipal elections datasets, studies of incumbent success across all sizes of Canadian municipalities have become more feasible. Taking advantage of this recent advancement in data availability, this project includes the broadest range of Canadian municipalities to be studied in any context. In the Empirical Contributions section of Chapter 2 I outlined how the data used in this thesis facilitates new work on municipal incumbency in Canada.

I have been closely involved in the collection of the data used in this project, both as a research assistant at the Canadian Municipal Barometer (CMB) project and for the purposes of this thesis. The CMB is a multi-institutional academic and private sector partnership that aims to create high quality data on Canadian municipal politics. It conducts a yearly survey of Canadian mayors and Councillors and has an ongoing project to collect full election results for every election cycle since 2016 in Canadian municipalities with a population of 9,000 or more.<sup>5</sup> These election results, combined with additional data that is available from other online sources or has been collected by one of the members of the CMB partnership, are called the Canadian Municipal Election Database (CMED). In my role as a research assistant at the CMB I supervised a team of four other research assistants during the first round of data

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<sup>4</sup>See figure 1, below.

<sup>5</sup>See <http://www.cmb-bmc.ca/english/>.

collection for this elections database. During this time, I created the necessary workflows, coordinated the work of the team, cleaned and verified the data, and performed manual data entry. I have also worked under an additional research assistantship to update the data with results from elections that have occurred since. Table 1 provides the approximate proportion of work that I contributed to each major stage of the data collection and validation process.

Table 3: Approximate Contribution to the CMED

	Data Entry	Data Cleaning and Validation	Project Management
Contribution	30%	90%	100%

This thesis project would not have been possible without the CMB and the data collection effort I contributed to as a member of its research team. However, it was also necessary to enhance the CMED because, for practical reasons, it only manually collected elections data for municipalities with more than 9,000 or more residents. As a result, I supplemented the CMED by adding data that I collected during the early stages of work on this thesis.<sup>6</sup> The first step was re-collecting the Quebec data so that it included census subdivisions codes, which are need in order to combine the elections data with census-based population data. Second, I also accessed the application programming interface of the Association of Municipalities Ontario (AMO) to collect elections data from Ontario for municipalities with populations smaller than 9,000.

The resulting dataset is summarized in table 1. The data collected for this project has a total of 60,058 rows. Each row represents a candidate in a given election cycle. Note that this means that candidates who ran in more than one election will have multiple rows in the data. These data consist of 15,859 unique elections from 1,928 municipalities.

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<sup>6</sup>The research assistant team at the CMB does not perform manual data entry to obtain election results for municipalities with less than 9,000 residents, however, if such data is downloadable, as is the case in Quebec and British Columbia, it is added to the CMED during regular data updates. This is why it was only necessary for me to collect data from Ontario to expand the results for the provinces in this study to a full range of municipal population sizes.

Table 4: Data Summary

	Province	N (Candidates)	Years
Alberta	3,097	2017	40–1,239,220
British Columbia	8,447	2008–2018	107–631,486
Ontario	6,614	2018	97–2,731,571
Quebec	38,669	2009–2018	5–1,704,694

Following the completion of the electoral data, I added municipal population counts from the Canadian Census of Population that was nearest to each electoral contest. To do this, I needed a method of joining the census data to the electoral data. The names of municipalities are one potential way of associating census data with the CMED, but this is complicated by there being a sizable number municipality names that are duplicates, even within a single province. Spelling and whether diacritics or their Roman-alphabet equivalents are used also complicates the process of combining data tables on the basis of municipal names. As a result, the best way to match census data to the municipal elections data in the CMED is to use Census Subdivision (CSD) codes. CSD codes are numeric identifiers used by Statistics Canada to organize census data, and they uniquely identify every municipality.

The first step in this process was obtaining elections results for Quebec that were already associated with CSD codes. While municipality names are still required to add CSD codes where they are missing, by re-cleaning Quebec’s elections data, which can be downloaded with CSD codes included, I ensured that the bulk of the most risky work, where diacritics and duplication are most prevalent, was eliminated. At this point, it may appear to have been sensible to attach population size data directly to the elections results via matching on municipality names, however joining via CSD codes first adds a layer of data validation that ensures greater accuracy. This is because each CSD codes is unique to a single municipality, which make the process of ensuring that CSDs have been added to accurate across multiple elections cycles, where population values change, but CSD codes do not. Thus, once the CSD codes had all been added to the elections results, I manually validated a representative



sample of the resulting CSD code-municipal name pairs to ensure that they were processed correctly. This process did not reveal any errors.

Having provided an overview of the process, I will now explain, step-by-step, how I added population data to the elections results. In R, an open source statistical package, there is a “join” function that uses one column from each of two data tables to merge those tables together based on the values that are common between at least two specified columns. Because both the census data and my elections results data have municipal names that identify every observation, I was able to use the municipal names present in each data table to initially combine the two tables. The result was elections data that had CSD codes associated with most of its observations. Here, the presence of inconsistent use of diacritics between data sources, different character encodings, and subtle variations in spellings made it necessary to manually verify any instances in which the software attempted make a match between the census data and the elections data and failed. At this stage, I wrote a function that flagged such failed cases, and added the correct CSD codes manually using LibreOffice Calc, which is an open source equivalent to MS Excel.

Once CSDs had been added to each row of the elections data, the process of adding population data was straightforward. Because the elections data covers multiple elections cycles for the municipalities in the data, I used the newly added CSD codes to add population data from the census that was nearest to each election of each municipality. This was accomplished using the same joining technique in R that I initially used to add CSD codes to the elections data. Because CSD codes are standardized, the manual verification and data entry that was needed in the earlier CSD stage also ensured the quality of the subsequent joins used to add population sizes. As such, no further manual data validation, checking of random samples, or correcting of the dataset were required.

Chapter 4: *Measuring Incumbent Success*, uses all the data summarized here. Rather than using election results data, Chapter 5: *The Incumbency Cue* uses survey data from Ontario.

Because this survey also associates each observation with a municipality name, the same method used to add census data described above was used to add CSDs and then population data to the survey results. With these data in hand, it became possible to conduct the analyses that are included in the proceeding chapters.

The objective of the data collection process I have described here is to include a full range municipal sizes from the provinces that are included. Though it was only feasible to include elections from these four provinces, the data used here achieves the goal of fully representing the full range sizes of Canadian municipalities. Figure 1 uses population data from *every* Canadian municipality to demonstrate the significance of including municipal elections data beyond the largest municipalities in the country.<sup>7</sup> These plots show the distribution of all municipal sizes by splitting them into seven population categories. It presents both the number of municipalities in each category, and the number of Canadians living in them.

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<sup>7</sup>Municipalities used in Figure 1 were selected using a list of CSD types that are defined by Statistics Canada. This list is included in Appendix 1.1.

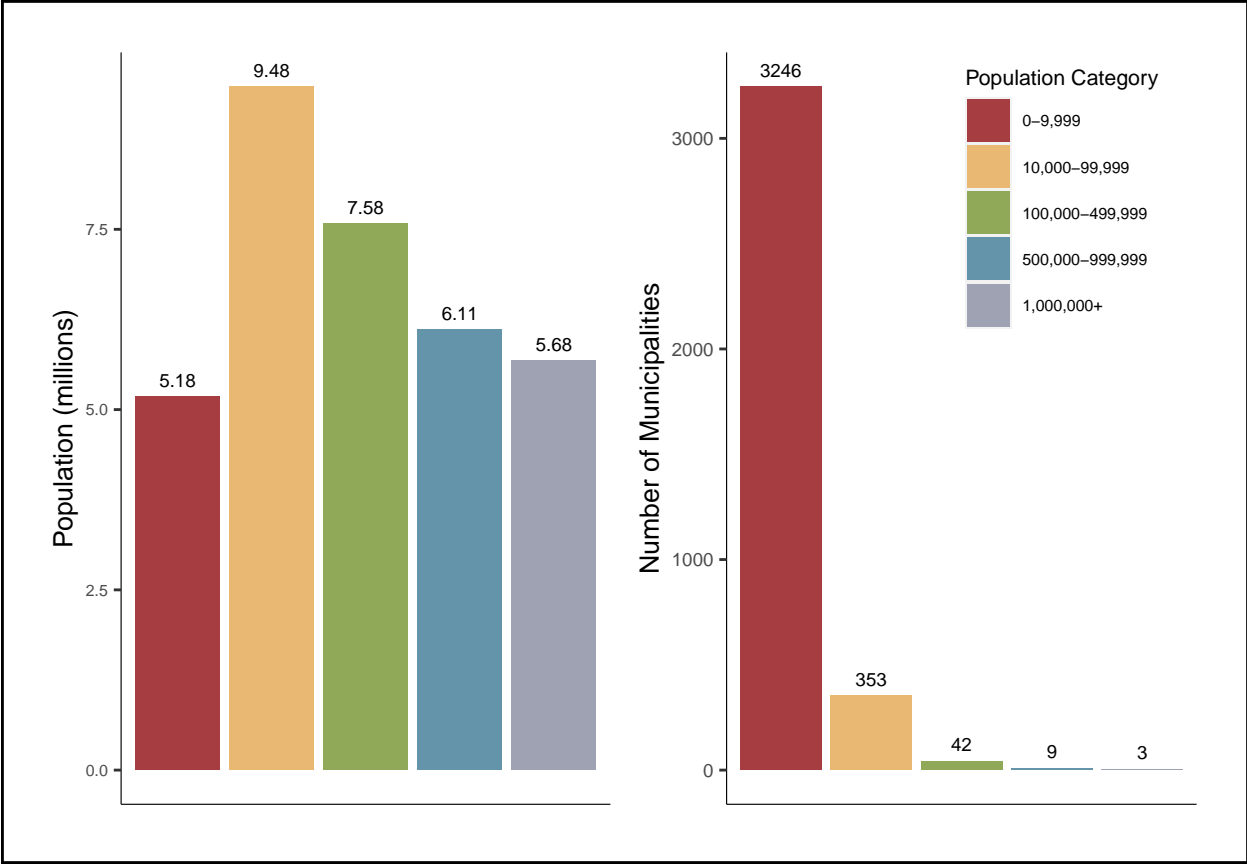


Figure 1: Canada’s population and number of municipalities.  
 Uses full Canadian census data at the municipal level (2016).

Figure 1 illustrates that, by focusing on the largest municipalities, much of the Canadian incumbency literature has not studied the municipalities that many Canadians live in. In summary, 65% of all the Canadians living in incorporated municipalities are from a municipality with a population smaller than 500,000. Small municipalities also make up the overwhelming majority of municipal *governments* in Canada – 88% of municipalities have populations of fewer than 10,000, and 9% have fewer than 100,000. These statistics demonstrate that the new scale of data used in this project is relevant to a significant number of Canadians.

## Study 1: Measuring Incumbent Success

Several important methodological choices led to the eventual research design that I employ in Chapter 4. First, the choice to measure incumbent success, rather than the incumbency advantage, was inspired by both theoretical and practical considerations. In terms of theory, the municipal incumbency literature lacks a rigorous, recent study of incumbent success, both in Canada and elsewhere.<sup>8</sup> Using Regression Discontinuity Design (RDD) to measure the incumbency advantage has also never been done in such a large range of Canadian municipalities, and would likely also lead to very interesting findings.

RDD controls for candidate quality – the other primary cause of incumbent success – by comparing the vote shares of incumbent candidates who barely won their first election to their vote shares in their second election. The idea is that those who barely won when they were not an incumbent are statistically indistinguishable, in terms of candidate quality, from those whom they defeated (Lee 2008). As such, in races that were won in a virtual tie, we know that the incumbent will not be exceptional, in terms of quality, in their next election. Using this assumption, RDD estimates are based on the increase in vote share that incumbent candidates receive when they barely won in their first election to their vote shares in subsequent elections. Because candidate quality is controlled by comparing those who barely won, we can assume that any increase in vote share observed in subsequent elections is largely due to the incumbency advantage.<sup>9</sup>

To compare the electoral outcomes of incumbent candidates against their previous electoral performances requires that multiple election cycles are available. This is the first obstacle to studying the incumbency advantage and population size in Canada, because multiple election cycles in a large province for a full range of population sizes are currently only available in

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<sup>8</sup>See Kushner, Siegel, and Stanwick (1997) for an example from Canada, and Ryšavý and Bernard (2013) for a similar measurement in the Czech Republic.

<sup>9</sup>Using this same logic, RDD estimates of the probability of winning an election can also be made with a dichotomous outcome variable that indicates electoral success (Lucas (2019); Trounstine (2011)).

British Columbia and Quebec. The second practical reason that the incumbency advantage is not analyzed in this thesis is that it requires that each candidate have a unique identifier assigned to them over every election cycle included. To undertake such an effort in a range of municipalities that justify the use of population size as the independent variable would be exceptionally time-consuming. Thus, because measuring municipal incumbent success is relatively simpler to perform and has never been rigorously done in Canada, this project focuses on municipal incumbent success.

## **Modeling Approach**

In Chapter 4: *Measuring Incumbent Success*, I investigate the relationship between population size and municipal incumbent success rates by running ordinary least squares models on municipal level elections results data. The dependent variable is the municipal level incumbent success rate, calculated as the ratio of total incumbent successes to the total number of incumbent candidates at the municipal level. The independent variable is municipal population size, which was taken from the census year closest in time to the relevant election in each municipality. Logged population values were then calculated to correct for the strong right skew that is present in the distribution of municipal population sizes. Descriptive statistics for the independent and dependent variable are included in Appendix 1.2. I also utilize three control variables to account for variation that may influence the results.

**Control Variables** I control for municipal level candidate counts, variation by province, and election year. To begin, I will discuss municipal level candidate counts. There is significant variation in the number of candidates contesting elections in each municipal election cycle. Furthermore, relationship depends upon the municipal population size. Figure 1 illustrates the dramatic increase in municipal level candidate counts that occurs as population size increases. The majority of the data follows a gradual increase in candidate counts as

population size rises, but there are several municipal elections at the high end of the distribution of population size that have exceptionally high candidate counts. Most importantly, there is clearly a correlation between population size and the municipal level candidate count.

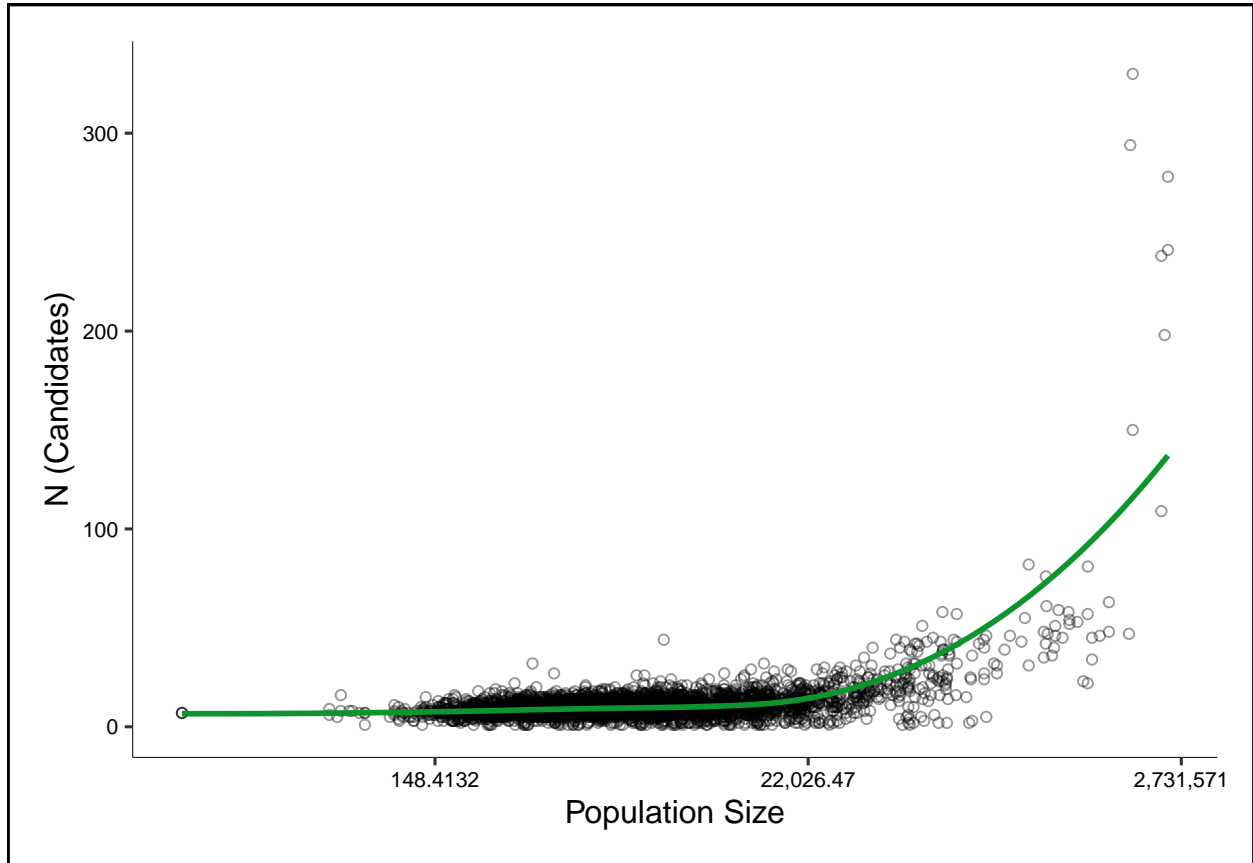


Figure 2: Population size and the municipal level number of candidates.

Each point represents a single municipality in a single election year. The opacity of each point has been decreased to allow areas where the points are denser to appear darker. For most of the range of population sizes we see a relatively stable increase in municipal level candidate counts, with outliers at the high end of the distribution of population sizes. The fit line is calculated using the local regression (loess).

Correlation between population size and average candidate counts poses some potential issues for how this analysis is conceptualized. The number of candidates could, for instance, have a causal effect upon an incumbent's chance of being elected due to the potential for vote-splitting (Poundstone 2008). Any single candidate's chance of being elected also decreases, in a purely probabilistic manner, as the number of candidates increases. To account for these factors, I control for the total number of candidates at the municipal level.

Next is the issue of geographical and temporal variation in incumbent success. Previous

research on Canadian provincial politics has shown that electoral dynamics differ between provinces (Daoust and Dassonneville 2018). To control for this variation, province fixed effects are included in the models. It is also possible that the nature of municipal elections in Canada has evolved in meaningful ways since the beginning of the sample period (Anderson 2010; Daoust and Dassonneville 2018). We also know that there have been exceptional circumstances such as recessions and political scandals in some years, and of these things would likely affect incumbent success rates for certain election years (Basinger 2013). To account for these factors, election year fixed effects and province fixed effects are used.

Though it can not feasibly be incorporated as a control variable, it is also important to clarify the way acclamations are treated in the following analysis. Acclamations, like candidate counts, vary systematically by municipal population size, with smaller municipalities having significantly more acclamations. Figure 3 shows the relationship between acclamations and population size. In this plot the data has been subset by population size and various institutional differences. The prevalence of acclamations in smaller municipal elections poses a challenge when modeling incumbent success, and acclamations have typically been excluded from previous analyses of incumbent success as a result. The reason that the presence of acclamations complicates efforts to measure incumbent success is that an acclamation *is* an instance of incumbent success. The exclusion of acclamations is also problematic because they relate to important aspects of incumbency, such as the scare-off effect (Fowler 2016; Lucas 2020). The municipal level models used here account for acclamations by including them in the incumbent success ratios of the dependent variable. This feature of the analysis is described in more detail in the following section.

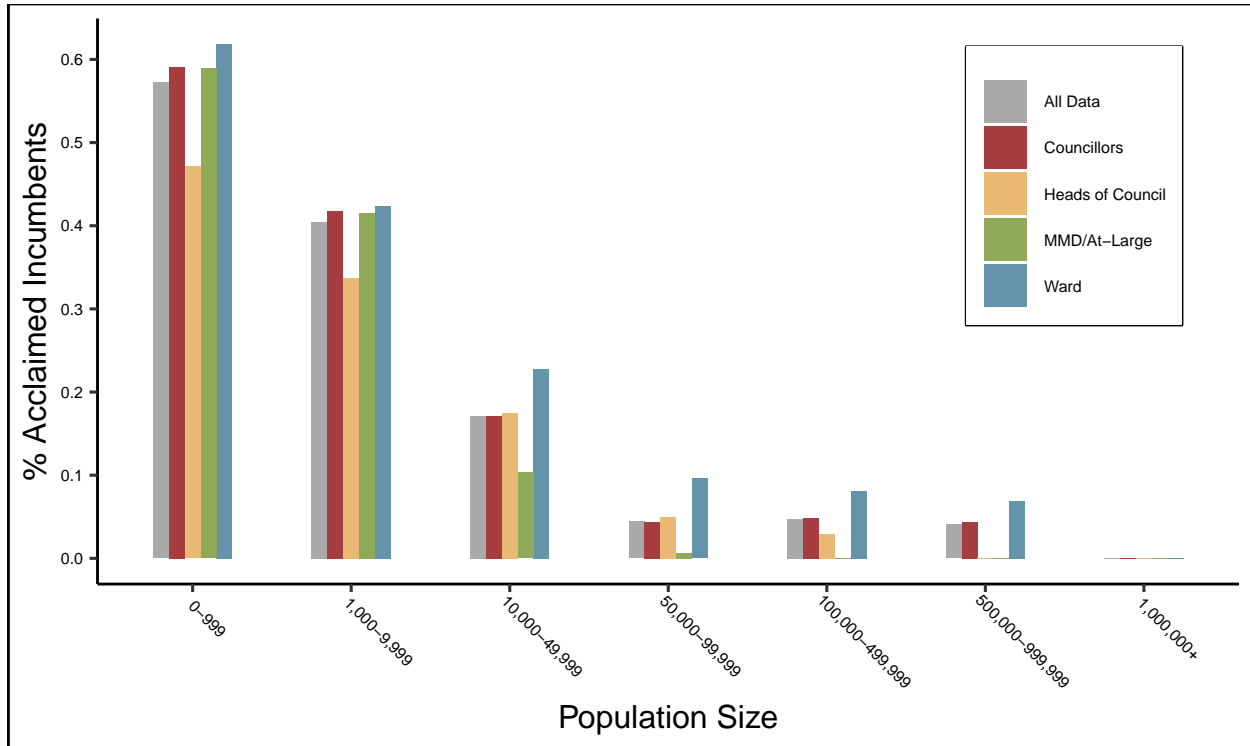


Figure 3: Acclamation rates of incumbents rise sharply as population size decreases.

Percentage of incumbent races that were won by acclamation, divided into seven population categories and subset by office type. Council races are further divided into two groups according to district magnitude. Incumbents are acclaimed much more frequently as population size decreases. There is also small amount of variation by office type and district magnitude.

Most importantly, Figure 3 illustrates how strongly population size and acclamation are correlated. In municipalities with 999 residents or fewer, every type of municipal office or district magnitude has more than 50% of all incumbent successes resulting from acclamation, with the exception being heads of council. From here, acclaimed incumbents generally become less and less common as population size increases. Notably, ward races have the highest rates in every population category, and even in the second-largest group of municipalities ( $500,000 \geq pop. < 999,999$ ), 7.0% of incumbent success are due to acclamation. Notable too, is the total lack of acclaimed incumbents in the largest municipalities ( $pop. \geq 1,000,000$ ).

**Municipal Level Models** Several characteristics of a municipal level model provide distinct advantages over data at the candidate or race level – chief among them being that the



only independent variable of interest, population size, is measured at the municipal level.

Another advantage of municipal level models is that they allow for acclamations to be accounted for without including an acclamations indicator as a control. In candidate level models, a dichotomous indicator for incumbency is necessary, however this type of acclamation indicator is problematic because it overlaps with the candidate counts equal to 1, making it multicollinear with a key control variable. Municipal level data is superior to candidate level data because it can retain candidate count information while accounting for acclamations in the dependent variable.<sup>10</sup>

Including acclamations at the candidate level would also cause a problem with the dependent variable because the two ways to win – acclamation or capturing a majority of the vote – simply can't be accounted for in a single measure of incumbent success at that level of analysis. This is, perhaps, the reason that acclamation has not been accounted for in most research on incumbency despite its substantive importance. However, alternatives to excluding acclaimed races are not easily found. For example, it isn't clear that an alternative dependent variables, such as vote share, would be superior overall. To use vote share one would need to model its relationship with population size without identifying which vote shares resulted in a win or a loss. The meaning of vote share also changes depending on district magnitude. In multi-member districts, even relatively small vote shares can result in a candidate being elected. The municipal level approach I have described here eliminates this concern because it averages candidate level success rates at the municipal level. For these reasons, I choose an incumbent success ratio as the dependent variable.

Municipal level incumbent success ratios were calculated by dividing the total number of incumbent successes per municipality in each election year by the total number of incumbent candidates per municipality in each election year. Calculated this way, the dependent variable gives the number of incumbent successes as a percentage of the total number of

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<sup>10</sup>In my sample, there are no instances of a non-incumbent candidate being acclaimed.

incumbent candidates in each municipality.

## Study 2: The Incumbency Cue

Chapter 5: *The Incumbency Cue*, measures the effect of an incumbency cue on vote choice using a survey experiment. I chose to study the incumbency cue because existing findings show that it is a significant contributor to the incumbency advantage, and appropriate data to study it became available (Adams, Lascher, and Martin 2021; Crowder-Meyer, Gadarian, and Trounstine 2020; Fowler 2018; Kam and Zechmeister 2013). I use the Ontario Education Policy Survey (OEPS), which was fielded from September 17 to 25, 2019 in Ontario. The respondents were Ontario residents from the province’s 42 largest municipalities. While the OEPS deals mostly with education policy, there was a survey experiment that tested the effect of an incumbency cue on vote choice between two hypothetical candidates for municipal council. It also associated each response with the respondent’s municipality of residence. These municipalities ranged in size from Belleville, with a population of 50,716, to Toronto, which has a population of 2,731,571.<sup>11</sup> Respondents were recruited from an existing panel by Dynata Research. After cleaning the dataset, there were 3,480 valid responses for the incumbency cue treatment of the survey experiment.

In the survey experiment, respondents were presented with two prospective candidates for their local municipal council and asked to indicate which they would vote for. The characteristics of the first candidate were held constant, and the second candidate was randomly assigned an incumbency cue. The gender and partisanship of the second candidate were also varied randomly. While these other cues likely influenced the responses of individual respondents, at the aggregate level they do affect the incumbency cue because of the random nature of their assignment to respondents.

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<sup>11</sup>Population values according to the 2016 federal census.

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Candidate 1	
Name:	Susan Johnson
Occupation:	Realtor
Age:	43
Incumbent:	No (does not currently hold elected office)
Party affiliation:	Unknown

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Candidate 2	
Name:	Brenda Erikson
Occupation:	Consultant
Age:	44
Incumbent:	Yes (Seeking re-election as a municipal councillor)
Party affiliation:	Unknown

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Because I am interested not only in the incumbency cue, but also in how it varies by municipal population size, an interaction model is needed. This allows me to interpret regression results in terms of how the treatment, an incumbency cue, affects vote choice at different population sizes. To accomplish this, I interact two independent variables, the logged population size of the municipality each respondent resided in at the time of the survey, and a dichotomous indicator of whether the respondent was presented with an incumbency cue during the experiment. This design provides information about two things. First, it measures what affect the incumbency cue has on vote choice in the survey sample; and second, it measures how the effect of the incumbency cue varies by the size of the municipality the respondent resides in. This analysis uses an ordinary least squares interaction model in which the dependent variable is regressed against independent variables and their multiplicative interaction.

I also present a sub-sampled version of the above experiment where the data were split into three roughly equally sized groups according to small, medium, and large population sizes. Due to the number of responses from Toronto, the largest population size category consists

of only Toronto data. For details on the N of each of these sub-sampled groups, see Appendix 1.3. This sub-sampled version of the analysis uses simple bi-variate OLS regressions with the treatment indicator as the independent variable and the incumbent vote indicator as the dependent variable.

## Conclusion

Table 5: Comparing Methods for Estimating the Components of Incumbent Success

Component	Estimation Method
<i>Incumbency Advantage</i>	Regression Discontinuity Design (Fowler 2016; Kendall and Rekkas 2012; Lucas 2019; Trounstine 2011)
Personal Vote	Simple linear models using natural experiments (Ansolabehere, Snyder, and Stewart 2000; Lucas, McGregor, and Tuxhorn 2021)
Scare-off effect	Multi-member races that facilitate measuring the effect of one additional incumbent on the number of challengers (Hirano and Snyder, Jr. 2009)
Incumbency Cue	Survey experiments (Crowder-Meyer, Gadarian, and Trounstine 2020)
<i>Incumbent Success</i>	Simple, candidate-level linear models (Kushner, Siegel, and Stanwick 1997, 2001; Ryšavý and Bernard 2013)

Table 1 outlines the components of incumbent success and provides information on how they have been estimated in the past. While the components of incumbent success are, by definition, closely related to over another, they often function through very distinct mechanisms. Thus, the study of incumbent success is methodologically quite diverse and expansive. In this thesis I have chosen to investigate two foundational and important aspects of incumbent success: the size of incumbent success itself, and the incumbency cue. These research questions I have chosen to address, while being only a few among the many that are possible, target specific and pressing areas of deficiency in the current Canadian municipal incumbency literature. The incumbency cue has never been investigated in the Canadian municipal context,

despite its being theorized as the primary driver of the incumbency advantage (Fowler 2018). This is addressed in Chapter 5: *The Incumbency Cue*. Similarly, municipal incumbent success has never been measured in a representative range of population sizes, or in more than one province, which this thesis rectifies in the proceeding chapter, Chapter 4: *Measuring Incumbent Success*.

## Chapter 4: Measuring Incumbent success

### Introduction

The watershed of Canada's recent municipal incumbency advantage literature is Lucas (2019), which measured the incumbency advantage in four of Canada's largest cities and found it to be strikingly large: the probability of an incumbent running in and winning the next election was 52% higher than that of non-incumbents and the incumbency advantage accounted for more than half of all incumbent victories. In comparison, a similar study of cities in the American Southwest estimated a 32% chance of an incumbent running in and winning the next election (Trounstine 2011). In Canada, the only other paper that has measured the incumbency advantage analyzed Parliamentary elections, and found that it only causes a 10% increase in the probability of an incumbent being elected (Kendall and Rekkas 2012). The comparative size of the Canadian estimate demonstrates an exceptionally large municipal incumbency advantage in Canada and justifies further research into its causes. Doing so requires an in-depth consideration of the known components of the incumbency advantage and identifying likely sources of electoral advantage for Canadian municipal incumbents.

This chapter contributes to the incumbency literature by measuring the relationship between incumbent success rates and population size. There is little available evidence for the effects of incumbency in Canadian local elections outside the largest municipalities. This is because, prior to Lucas (2019), scholars had not directly measured the incumbency advantage in Canadian municipalities. This is the case even after considering the less accurate estimation strategies that have been used in the United States since the early 1970s.<sup>12</sup> Kushner, Siegel, and Stanwick (1997) studied municipal incumbency in Ontario municipalities and found that incumbents were elected 41.3% more often than non-incumbents. The next strongest predic-

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<sup>12</sup>see Erikson (1971) for a very early measure of the incumbency advantage in the United States Congress.

tor of electoral success was campaign expenditures, followed by the number of candidates per seat. In a similar study of mayors from a variety of large Canadian municipalities, Kushner, Siegel, and Stanwick (2001) found that incumbents were elected 83.9% of the time, compared to 10.4% for non-incumbents. These studies by Kushner, Siegel, and Stanwick (1997) and Kushner, Siegel, and Stanwick (2001) both studied municipal incumbent success rates, but their scope was quite constrained. Unlike these earlier studies, research in multiple provinces that includes every size of municipality is now possible due to data becoming more available. This new data has widened the scope of what is possible in the municipal elections literature, which this chapter takes advantage of.

Here I ask how municipal incumbent success rates vary by population size. Surprisingly, I find that as population size increases, incumbent success rates decrease. The main reason for this contrary finding is the high number of acclaimed candidates in smaller municipalities, which creates very high incumbent success rates there. I also find that this relationship is particularly strong in the province of Quebec. Once acclamations are excluded from the analysis, the incumbent success rates increase as population size increases, aligning with expectations from the Canadian literature (Kushner, Siegel, and Stanwick 1997, 2001).

## Results

To begin with, it is useful to gain an overall picture of the relationship between population size and incumbent success. To compare the electoral success rates of incumbents and non-incumbents I use simple bi-variate models to calculate the probability of an incumbent victory in a range of different municipal population sizes. These results are presented in figure 1. Note too, that these initial results utilize the candidate level incumbent success data. This was done to help illustrate the robustness of the later municipal level estimates.

In figure 1, the blue line of this plot represents incumbent success rates across seven pop-

ulation categories in the full data, and is relatively stable across population sizes. What does vary significantly is the success rates of non-incumbents, which begins at a relatively high 52% in the smallest population category before decreasing in a nearly linear fashion as population size increases. The success rate of non-incumbents is at its lowest in the 500,000 to 999,999 population category, at only a 10% probability of being elected. Thus, the probability of being elected as a non-incumbent candidate decreases by 42% from its highest value in the smallest population category to its lowest value in the second largest. However, the general trend is more important to note than the specific success rate from any one population category. This is especially true in the largest population categories, where there are only a few municipalities and minute differences in values could be due to a variety of temporary exogenous factors unique to the years that election results were available.

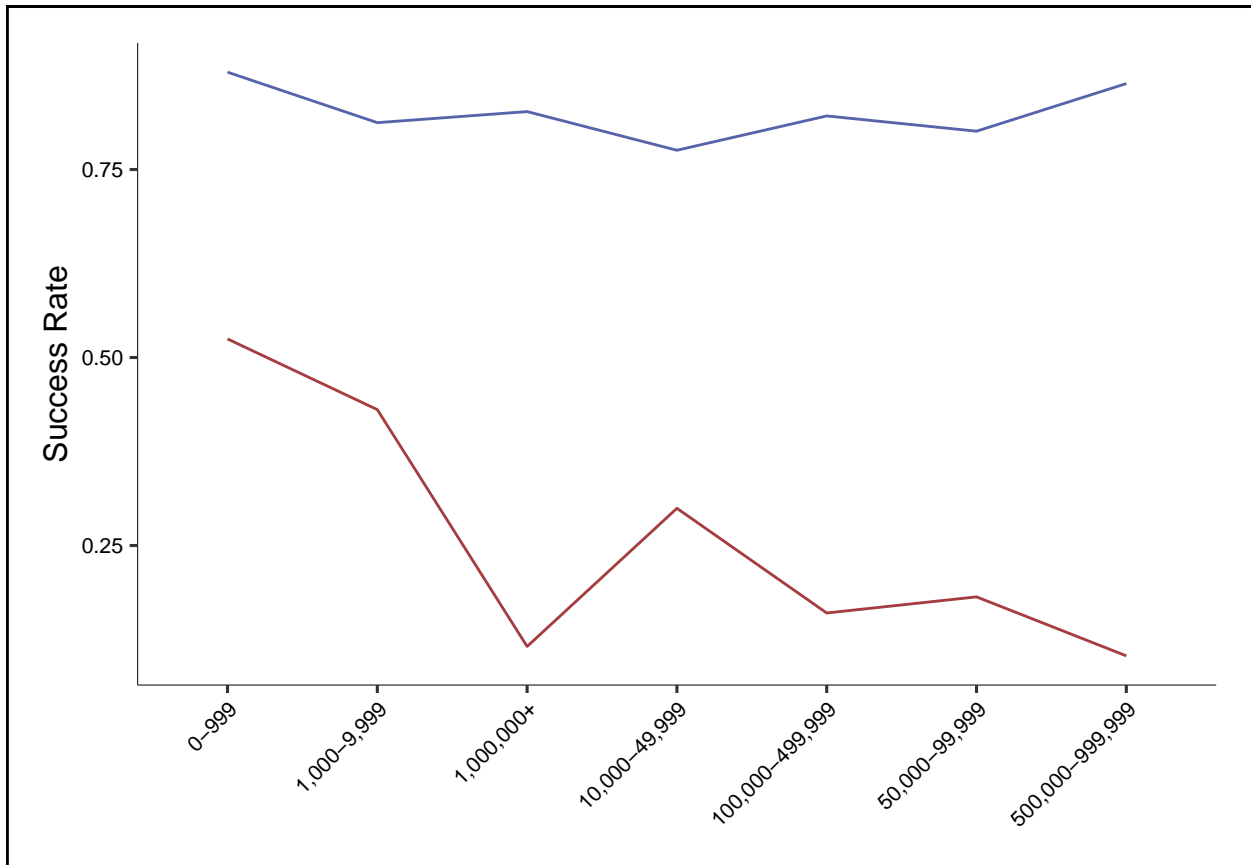


Figure 1: Incumbent and non-incumbent success rates in seven population categories.

Blue indicates the probability of incumbent success in each population category, while red indicates the same quantities for non-incumbents. Probabilities were calculated as the marginal effect of incumbency on the probability of being elected.



Of most significance is the *increase* in the probability of being elected that incumbent candidates enjoy. These values are the individual slopes from each bi-variate model that was run on population-based subsets of the data. In Figure 1, the slopes were then added to the intercepts of these models – which represent the probability of being elected as a non-incumbent – to obtain the overall probability of incumbent candidates being elected. Thus, the gap between the red line and the blue line represents the average increase in the probability of being elected in each population category that incumbents experience. We can see that this value generally increases as population size increases. To better illustrate the increase in the probability of being elected that incumbency provides, figure 2 plots the difference between the incumbent success rates and the non-incumbent success rates for each population category shown in figure 1.

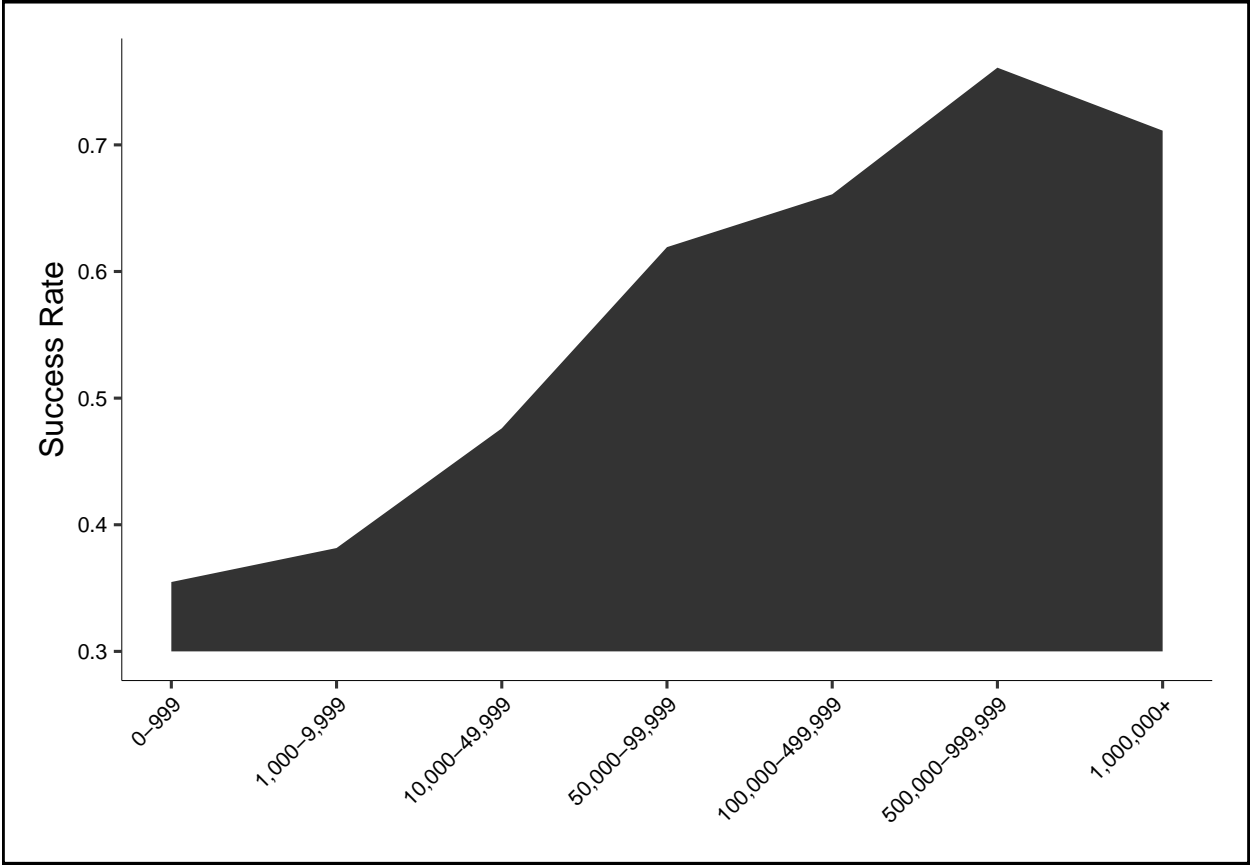


Figure 2: The probability of being elected as an incumbent as population size increases

The increase in the probability of being elected that incumbent candidates experience. The probability of being elected as an incumbent candidate increases from 35% in the smallest population category to its highest value of 76% in the 500,000

to 999,999 size range – a 41% increase in the probability of being elected. Full tabular results are included in this chapter's Appendix.

In figure 2 we can see more clearly that the probability of electoral success of incumbent candidates grows significantly as population size increases. We do not know what is causing this increase, but it is likely a combination of candidate quality and the incumbency advantage, both of which tend to benefit incumbent candidates more than non-incumbents (Zaller 1998; Lucas 2019). Nevertheless, the values presented in figure 2 provide some initial indications of what to expect in the more robust municipal level measurements of incumbent success rates that are presented below. The general increase in the probability of being elected that incumbency provides also serves a robustness test of later findings – if more complex measurements yield similar results to those of figure 2, we can have more confidence in them.

I will now present several models that measure the nature and strength of the relationship between incumbent success and municipal population size. The general approach to presenting these findings is to show multiple models of the same data side-by-side, with each plot showing results under different model specifications. In these plots the type of model and the main relationship does not change. What does change is the number of control variables, which generally increases from left to right. The plots on the far left of each figure show the simple bi-variate relationship between incumbent success and population size. The robustness of these findings can be judged by the consistency of the relationships shown across all the plots. Where the addition of a control variable results in a change to the model, I give some possible explanations as to why it occurred.

## **The Role of Acclamations**

While, acclamation is a significant source of incumbent successes in smaller municipalities, it is not optimal to directly control for them in this analysis. As a result, this analysis runs regressions on two subsets of the data – one that includes all the data, and one that excludes

municipalities acclaimed candidates. In figure 3 the y-axis expresses this division, with the “Full Data” row providing estimates taken using all the data, while the “No Acclamations” row provides estimates on data where acclamations have been excluded.

Each sub-plot of 3 is specified as follows: The “Bi-variate” plot presents the estimated relationship between incumbent success and population size under a simple bi-variate relationship with the municipal level incumbent success ratio as the dependent variable and the logged municipal population counts as the independent variable. The remaining plots add control variables to this original relationship. The second plot, “N Candidates”, adds the control for the number of candidates per municipality. The third plot, “Cand. & Province FEs”, adds province fixed effects while retaining the control for candidate counts, and the fourth plot, “Cand. & Year FEs” again controls for the number of candidates, but has election year fixed effects rather than province fixed effects. The fifth model, “All Controls” presents estimates using the full set of control variables: municipal candidate counts, province fixed effects, and election year fixed effects.

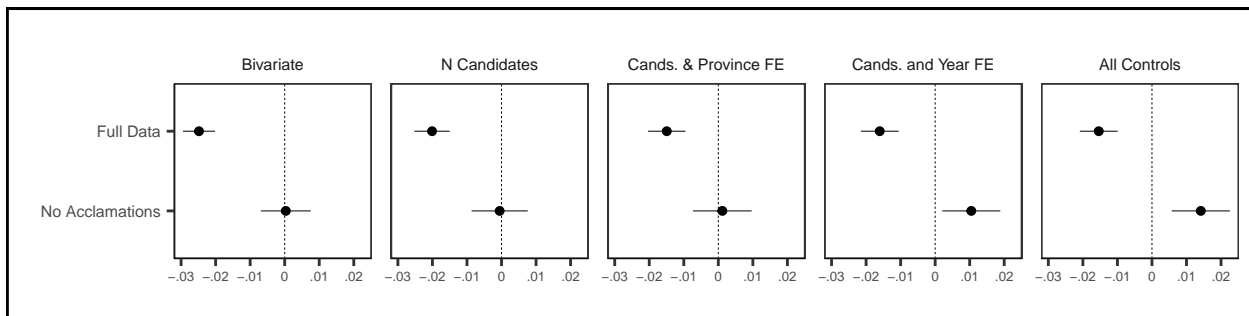


Figure 3: Relationship between population size and incumbent success rates, subset by acclamation.

Change in incumbent success rate by a one unit increase in population size (logged) and subset by acclaimed races. The “Acclamations” row includes all the available data, and the “No Acclamations” row excludes races where there was an acclaimed candidate. Whiskers are 95% confidence intervals. See Appendix, Section 2.1 tabular results. FEs = fixed effects.

I will now present several models that measure the nature and strength of the relationship between incumbent success and municipal population size. The general approach to presenting these findings is to show multiple models of the same data side-by-side, with each plot showing results under different model specifications. In these plots the type of model and the main relationship does not change. What does change is the number of control variables,

which generally increases from left to right. The plots on the far left of each figure show the simple bi-variate relationship between incumbent success and population size. The robustness of these findings can be judged by the consistency of the relationships shown across all the plots. Where the addition of a control variable results in a change to the model, I give some possible explanations as to why it occurred.

Beginning with the models that include acclamations, it is evident that as population size increases, the incumbent success rate decreases. This relationship is also consistent across different levels of control. Estimates start at  $-0.025$  in the bi-variate model, then fall modestly as controls are added to the model until, in the final specification, the estimated effect is  $-0.015$ . In these models every estimate is significant at the 99.99% confidence level. Turning to the models calculated on data without acclamations, the first three models all have estimates whose 95% confidence intervals cross zero. Additionally, none of the first three estimates without acclamations are statistically significant at 90% confidence. Turning to the final model, there is a small positive effect of population size on incumbent success that is significant at 95% confidence.

Overall, these findings suggest that in Canadian municipal elections incumbent success rates decrease as population size increases. We can also infer that the prevalence of acclamations at smaller population sizes is the primary reason for the negative relationship between population size and incumbent success. This second conclusion is supported by the negative relationship between population size and incumbent success disappearing in the absence of acclamations.

The plots in figure 1 demonstrate a robust negative relationship between population size and incumbent success which appears to exist primarily as a function of acclamations. These findings also provide modest evidence of larger municipalities having relatively higher incumbent success rates in the absence of acclamations. The literature also indicates that the electoral politics of Quebec function in distinct ways compared to the rest of Canada

(Daoust and Dassonneville 2018; Schwartz 1974).

## Provincial Variation

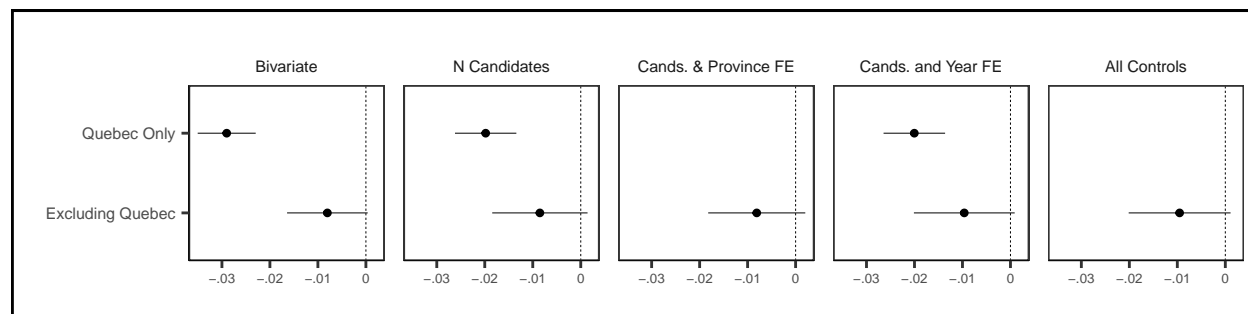


Figure 4: Stronger relationship between population size and incumbent success in Quebec.

Change in incumbent success rate by a one unit increase in population size (logged) and subset by province, with the Quebec subset in the “Quebec Only” row, and the Alberta, British Columbia, and Ontario subset in the “Excluding Quebec” row. Whiskers are 95% confidence intervals. See Appendix, Section 2.2 tabular results. FEs = fixed effects.

The inclusion of province fixed effects in the models presented in figure 3 resulted in a weakening of the main relationship between the incumbent success rate and population size, which indicates provincial heterogeneity. Given some of the most obvious differences between the provinces in the sample, this result is sensible. These differences include the near universal use of at-large elections in British Columbia and widespread partisanship in Quebec. Partisanship has been demonstrated to be a particularly strong driver of incumbent electoral outcomes (Lucas 2019), which could potentially cause Quebec to differ from other provinces in terms of incumbent success. Patterns of economic voting also differ between the provinces (Daoust and Dassonneville 2018). Notable too is Quebec’s linguistic and cultural distinctiveness, potentially causing variation in its political culture (see Schwartz 1974).

Figure 4 re-implements the approach taken in figure 3 and runs ordinary least squares models on the municipal level data. In figure 4, the models compare estimates of the relationship between population size and incumbent success in Quebec against estimates made on pooled data from Alberta, British Columbia, and Ontario. The Quebec model that includes a candidate count control and election year fixed effects has an estimate of  $-0.02$  ( $p < 0.01$ ) compared to a  $-0.008$  ( $p = .14$ ) estimate in the other provinces under the full set of controls.

These plots provide evidence that there is a robust, negative relationship between population size and incumbent success in Quebec. Additionally, in the estimates for the pooled province data that excludes Quebec, we consistently see negative estimates, though their confidence intervals cross zero and only the first two models, “Bi-variate” and “Cands.” are statistically significant, and only at the 90% confidence level. These results suggest there is an especially strong negative relationship between incumbent success and population size in Quebec.

## Conclusion

In this chapter my analysis uncovered three main findings about the relationship between population size and incumbent success. First, I found that, at the most general level, municipal incumbent success rates decrease as municipal population size increases. Second, I found that the cause that underlies this relationship is the prevalence of acclaimed incumbents in the smallest municipalities I studied. The third finding of this chapter is that, in the smallest municipalities incumbent candidate are acclaimed at such remarkable rates that when the effect of acclamations are removed from the analysis, the main relationship between incumbent success and population size is reversed. That is, absent the influence of acclamations on my measurement of municipal-level incumbent success rates, as population size increases, so do incumbent success rates. This finding implies that vote behaviour, in addition to acclamation, has important implications for incumbent success in Canada. Perhaps the same is also true of the Canadian municipal incumbency advantage. Finally, I find that my first finding – that incumbent success rates fall as population size increases – is particularly strong in Quebec.

Contrary to previous findings in Canadian municipal elections, this analysis shows that as the size of Canadian municipalities increases, incumbent success rates decrease. These findings represent a new way of thinking about the quality of democracy in Canadian municipalities. Taking all available data into account, large cities simply are not the exceptional incumbent

strongholds that they have often been perceived to be (See Dassonneville 2018; Lucas 2019). This finding aligns with many plausible assumptions about how big city elections are likely more competitive than their smaller counterparts. In general, there is more at stake in big city politics because their policy domain is larger and they address essential issues not present in smaller places. Positions on the council of a large municipality may also be more desirable because they are higher paying and could lead to electoral success at provincial and federal levels of government. Finally, larger places are also typically more politically competitive because they are home to a larger number of competing interests (Dahl and Tufte 1973).

There are a few potential reasons why this finding differs so markedly from previous studies. One likely reason is advancements in data availability. Due to the state of technology and data at the time, Kushner et al. (1997) didn't have access to as many election results as are available today. This limited their research design to an investigation of Ontario elections. If the data were available, they may have been able to study more than just Ontario, and for a broader range of years. Without their data, we don't know if their sample captured a short-term outlying trend in Ontario electoral politics, or if it was taken during a time when municipal politics in Ontario differed significantly from the present situation in all of Canada.

Data availability aside, it is more likely that these findings contradict those of Kushner, Siegel, and Stanwick (1997) due to how it treated acclamations. To this day, the choice to exclude acclaimed races continues to be a common simplifying decision made by those who analyze incumbency, despite the likely importance of acclamations. While their presence complicates an analysis, it is still vitally important to consider, given that they capture important processes such as challenger scare-off (see Fowler 2016). In this chapter, I have shown that without including acclaimed races, it is likely that incumbent success rates in smaller municipalities will be estimated well below their actual levels. Finally, a corollary

finding made possible by the data used in this chapter is that acclamations are far more common in smaller municipalities. The importance of acclamations in smaller municipalities agrees with the limited existing literature on population size and electoral success that do include acclamations (Ryšavý and Bernard 2013).

Notable too, is the provincial heterogeneity that this analysis shows. The relationship between incumbent success rates and population size is significantly influenced by a particularly strong relationship in Quebec. Unfortunately, the data that are available do not provide the necessary statistical power to accurately measure the relationship between population size and incumbent success in each province other than Quebec. Still, the findings presented in figure 4 provide weak evidence that, when acclamations are accounted for, incumbent success rates in Alberta, British Columbia, and Ontario decrease as population size increases similarly in Quebec. Certainly, none of these findings suggest that there is a consistent positive relationship between population size and incumbent success in some provinces but not others. As a result, I conclude that in Canadian municipal elections there appears to be an inverse relationship between incumbent success and population size.

There are several potential avenues toward high incumbent success rates that do not require an incumbency advantage to exist. Incumbent candidates could, for example, be re-elected relatively consistently due to their superior ability to represent their constituents (Ansolabehere et al. 2006; Hajnal and Trounstine 2014; Lucas 2020; Trounstine 2011). It may also be that past elections have already selected high quality candidates and that future elections reaffirm those choices, whatever the definition of *quality* may be (Zaller 1998). By investigating the incumbency cue, the next chapter explains how the incumbency advantage affects the relationship between incumbent success and population size that we observe in this chapter.



# Chapter 5: The Incumbency Cue

## Introduction

In the previous chapter we saw that incumbent success rates in Canadian municipalities are strongly conditioned by the influence of acclamations. There, I found that there is a preponderance of acclamations in the smallest municipalities. This feature of elections in the smallest municipalities causes incumbent success rates to fall as population size increases. In terms of provincial dynamics, we also see that the national level results appear to owe much of their strength to a particularly strong negative correlation between population size and incumbent success in Quebec. I also controlled for acclamations. Under these conditions, we see incumbent success rates increasing as population size increases. As such, there is also significant variation in incumbent success rates that can be entirely attributed to voting behaviour as opposed to acclamations.

In this chapter, I analyze another important aspect of the relationship between incumbency and population size by shifting to a study of how the incumbency cue. Using a survey experiment of Ontario residents, I ask how population size causes the effect of an incumbency cue to vary in strength. In doing so, I contribute the first study of the incumbency cue in municipal elections in Canada. This chapter illustrates one of the mechanisms that leads to higher incumbent success rates in larger municipalities, absent the influence of acclamations.

## The Importance of Information to Electoral Outcomes

Information constitutes an essential link between the candidate and the voter. Fowler (2018) finds that when voters lack information about candidates, incumbency becomes a cue of higher candidate quality, causing voters to choose to vote for incumbents more often. Moore, McGregor, and Stephenson (2015) add context to this finding by arguing that knowledgeable

voters are less likely to vote for incumbents when they are attentive to election campaigns. Taken together, these studies suggest that the amount of information available to voters and their attentiveness both affect incumbent support. We can assume that the flow of information to the voter is mediated both by the overall availability of information within their municipality and by their attentiveness to the election campaign. We can also expect that these two factors will vary depending on population size (Verba and Nie 1987).

Cues are an important area of research for several reasons. They are one of the most common forms of information used by voters (Achen and Bartels 2017), and the literature suggests that they are preferentially used by voters depending on the mixture of cues that are available to them (Adams, Lascher, and Martin 2021; Anderson, McGregor, and Pruyers 2020; Ansolabehere et al. 2006; Fowler 2016; Kang et al. 2021; Lucas 2019; McGregor et al. 2017; Sen 2017; Stauffer and Fisk 2021). There is potential to learn a great deal about voter behaviour and electoral success because of this. Institutional variation and differences in population size likely cause significant variation in what cues are available to voters, and their relative strengths.

Studying cues also sheds light upon some of the electoral consequences of institutional design. The findings of Crowder-Meyer et al. (2020) have implications for at-large elections. At-large elections are often argued to provide better representation to minority groups because they allow for multiple candidates to be elected and lower the vote share required for candidates to gain a seat. These characteristics make space for representation of segments of the electorate who do not constitute a voting majority. Crowder-Meyer et al. (2020) finds that the cognitive load of voting in an at-large race, in which multiple vote choices from a large pool of candidates is needed, requires more cognitive resources from voters. In these contests, voters with egalitarian motives who would otherwise moderate their own use of negative stereotypes instead turn to them and vote in a prejudiced manner. In low-information municipal elections, this effect will be especially pronounced (CHECK Riggle et al. (1992);

McDermott (1998) in Crowder-Meyer et al. (2020)}.

### **An Illustrative Example**

A scandal that came to light during Calgary’s 2021 election illustrates how drastically the results of an electoral contest can be swayed by new information. Sean Chu, Calgary’s ward 4 incumbent during the 2021 election, was formally reprimanded for inappropriate involvement with a minor shortly after the incident occurred in 1998 (Grant 2021). This information came to light between the advanced polling period and election day. Because of when this negative press coverage was published, we are able to see how an incumbent candidate’s vote share in a relatively low-information contest compares to his vote share after richer information becomes available. This example illustrates both the power of cues and their fallibility in the face of more direct sorts of political information.

Municipal elections, and especially council elections, continue to be low-information contests (Moore, McGregor, and Stephenson 2015). As such, Sean Chu’s status as the incumbent candidate was likely some of the most widely known and pertinent information about him when the campaign began. Based on previous research, we can additionally assume that Chu’s incumbent status provided a general cue about his quality as a candidate (Anderson, McGregor, and Pruyers 2020; Fowler 2018; Moore, McGregor, and Stephenson 2015). Sean Chu’s prospects in the 2021 election were quite strong for other reasons as well: he had served Ward 4 on Calgary’s city council for two prior terms and none of his opponents had prior political experience, meaning they were relatively unknown. As a result, observers of the election had every reason to believe that Sean Chu would be elected for a third term. The relative strength of his candidacy prior to knowledge of this scandal becoming widely known is illustrated by the “Advanced Polls” group of figure 1, where he led by 13%. Had the same pattern of voting continued on election day this would have been his highest margin of victory yet.

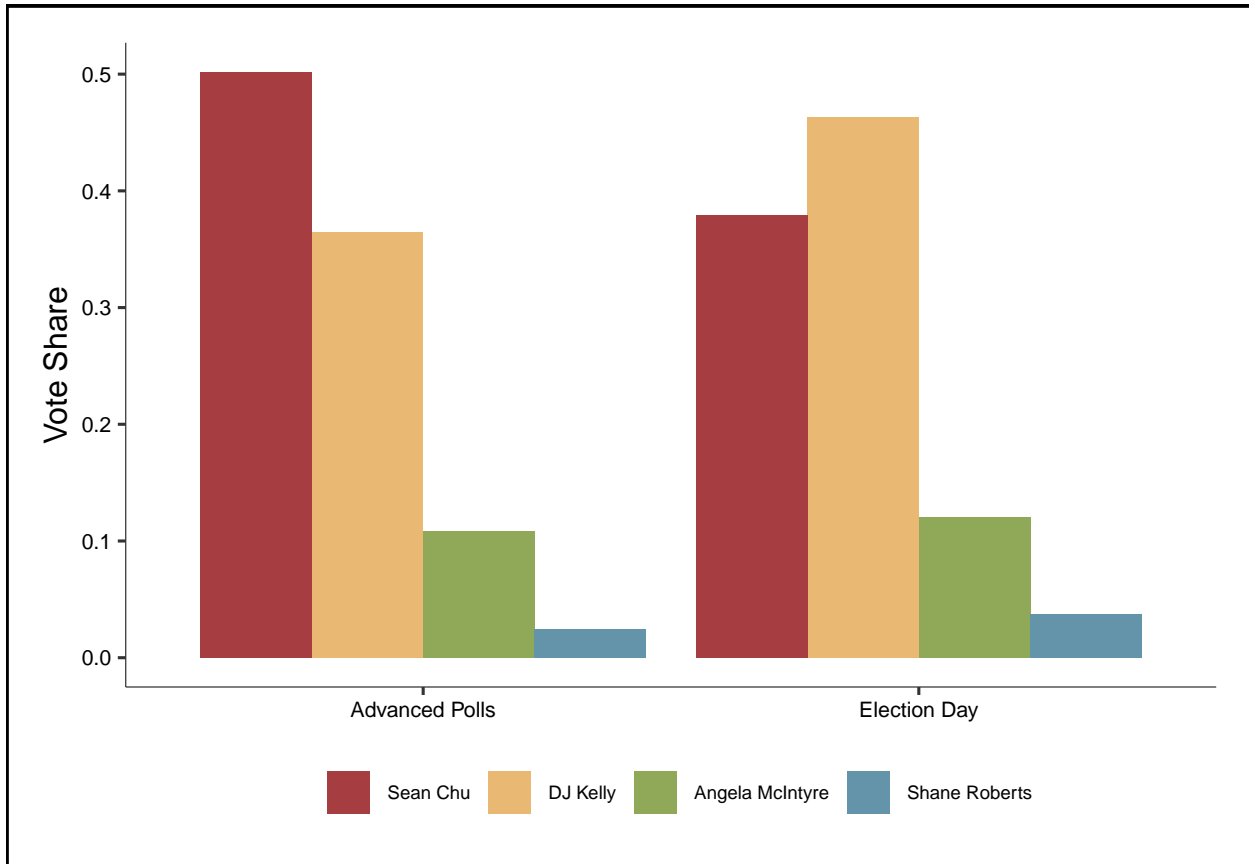


Figure 1: Advanced polls vs. election day vote share. Calgary 2021, Ward 4

Sean Chu held a strong lead in advanced polling, but his election day vote share put him in second place due to knowledge of his involvement in a previous scandal. Most of Sean Chu’s election day vote appears to have gone to DJ Kelly, but note that even the two minor candidates experienced a boost in vote share on election day compared to the advanced polls. Full tabular data is included in Appendix section 3.

The order of events during the closing days of Calgary’s campaign period are important. Advanced voting took place from October 4<sup>th</sup> to 10<sup>th</sup>, with election day taking place on October 18<sup>th</sup>. On Friday, October 15<sup>th</sup>, the story revealing Sean Chu’s sexual contact with a minor and subsequent reprimand from the Calgary Police Service was published by CBC (Grant 2021). This new information likely had an effect, which is consistent with the shift in the winning vote share from Sean Chu in the advanced polls to DJ Kelly on the election day, as shown in figure 1. If the trend in the votes from the advanced polls had continued on election day, Sean Chu would have won by a healthy margin. However, on election day, he suffered at the polls, emerging as the clear loser with respect to the election day vote counts. The final result was Chu’s victory by only 52 votes. Note too, that advanced polling did not

fail to attract a significant proportion of the overall votes cast in Ward 4: in the advanced polls there were 11,019 votes cast and on election day an additional 17,984 votes were cast.

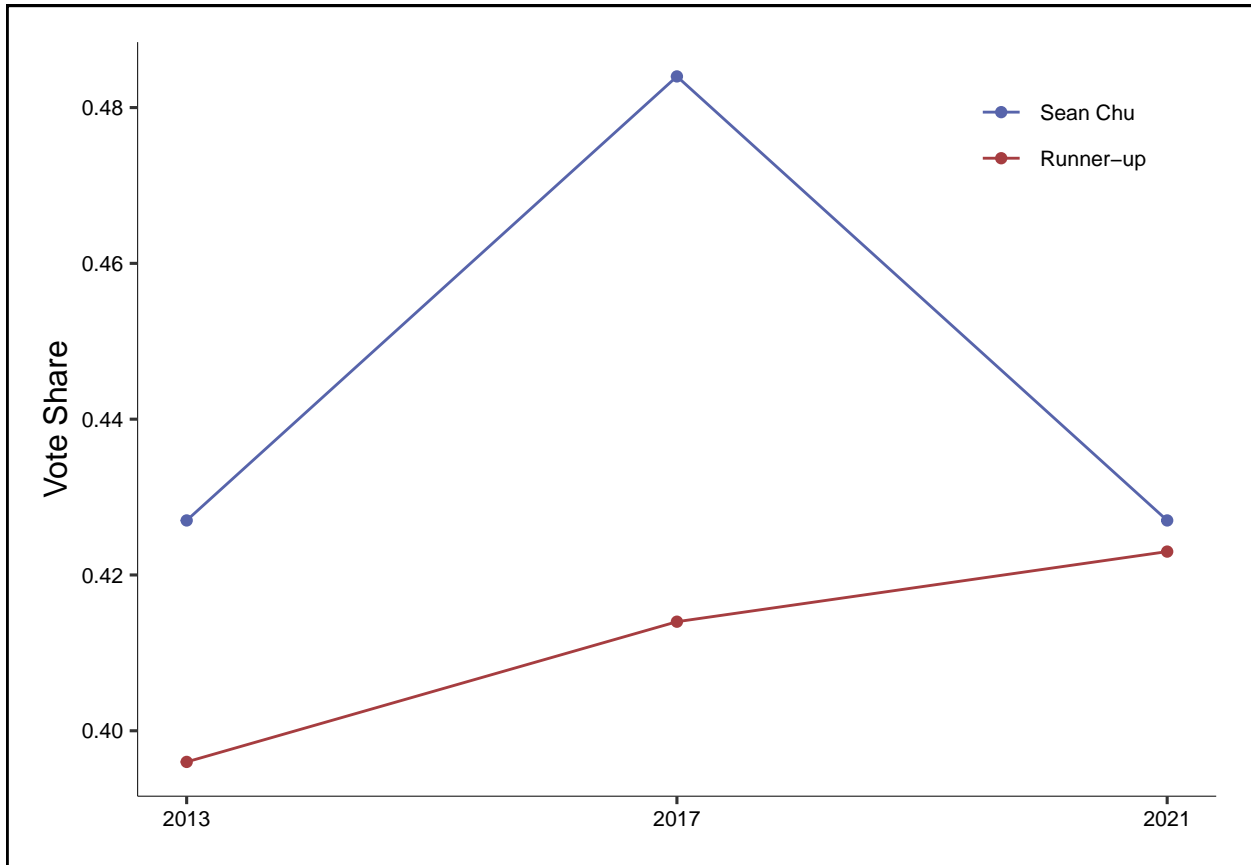


Figure 2: Comparison of vote share to that of the runner-up in three elections

A modest victory in Sean Chu's first election increased substantially during his first election as an incumbent before falling to a bare victory in 2021. Full tabular data is included in Appendix section 3.

Figure 2 provides an illustration of Sean Chu's vote share compared to the runner-up in the three municipal elections he has run in. This chart further supports the assertion that Sean Chu was likely to win the 2021 election if information about his previous scandal had not come to light. We can see that the first time he was elected to office his margin of victory was relatively small at slightly less than 3% (43%). As an incumbent in the following election this margin widened to 7% (48.4%). Based on these prior vote shares we could expect to have seen Sean Chu's vote share at least remain near its 2017 level, but instead it dropped to a bare victory.

These results should not be over-interpreted, however. It is, of course, entirely possible that other factors, such as mobilization strategies and compositional differences account for the difference in vote shares that we see between advanced polling and election day. But, given that the information that emerged between advanced polling and election day was well circulated and salient, this episode in Calgary municipal politics provides suggestive evidence about the role of information for incumbent voting in municipal elections.

## Results

Figure 3 presents the average marginal effect (AME) of the incumbency cue on vote choice at representative population sizes. In the smallest population category there is a 4% increase in the probability of supporting a candidate if they are randomly assigned incumbent status. In contrast, in the largest population category this quantity increases threefold to a value of 12%. At the lowest logged population value the confidence intervals cross zero. Moreover, while the point estimates suggest a positive relationship, the confidence intervals allow for a negative slope. As such, these data are consistent with population size having no effect on the likelihood of a voter choosing the incumbent. However, due to nearly complete statistical significance of the confidence intervals, we tentatively conclude that there is a robust relationship between population size and the effect of the incumbency cue. Namely, the point estimates of this analysis suggest that when compared to the smallest municipalities, those living in larger municipalities are 8% more likely to vote for a candidate if incumbent's incumbent status is cued.

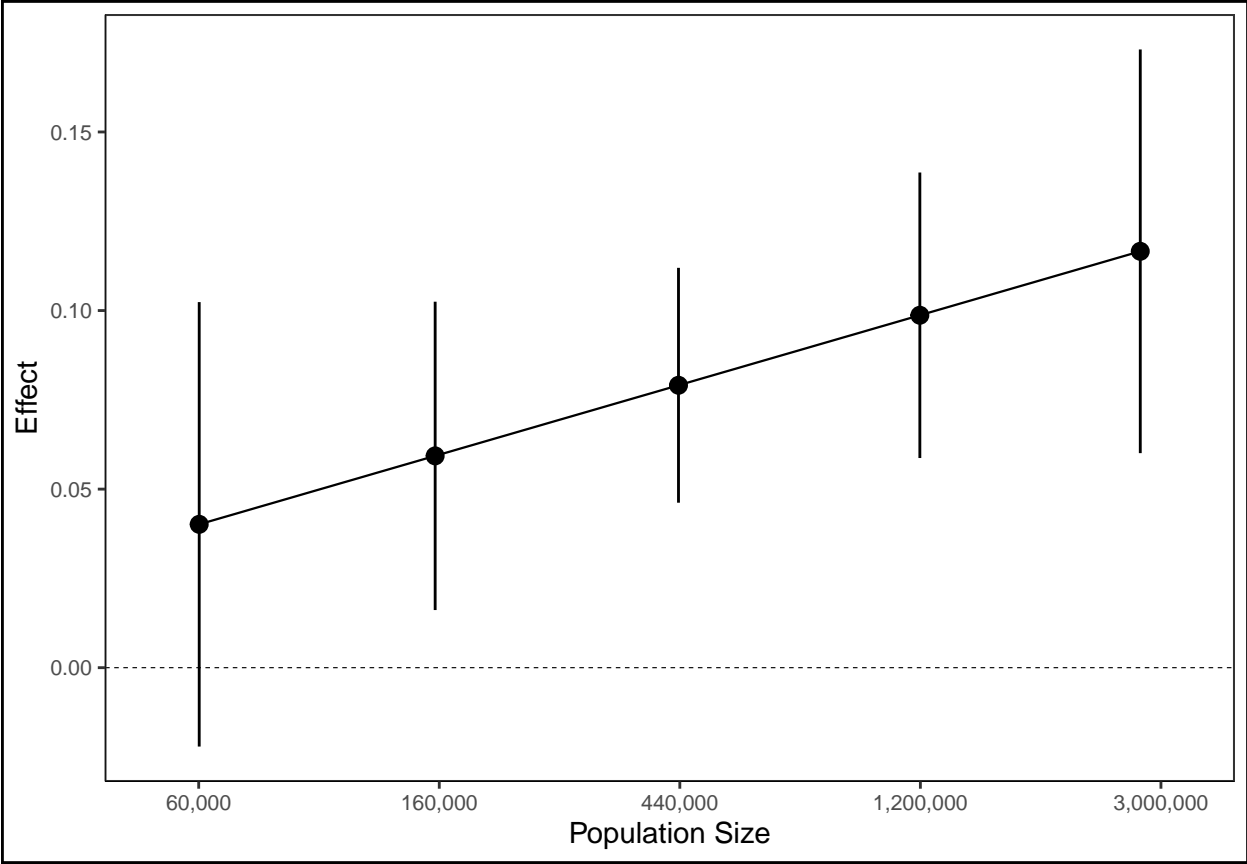


Figure 3: Effect of an incumbency cue increases as population size increases.

The effect of an incumbency cue at logged population with values ranging from 11 to 15. For ease of interpretation, logged values have been converted back to raw population values in this figure. Whiskers represent 95% confidence intervals. A line of best fit between the point estimates serves as a reminder of the linear relationship between population size and the effect of the incumbency cue. Full regression results are included in Appendix Section 3.

To demonstrate the robustness of the above experiment I ran a similar experimental design on three sub-samples of the full dataset. The results of this sub-sampling are presented in figure 4.

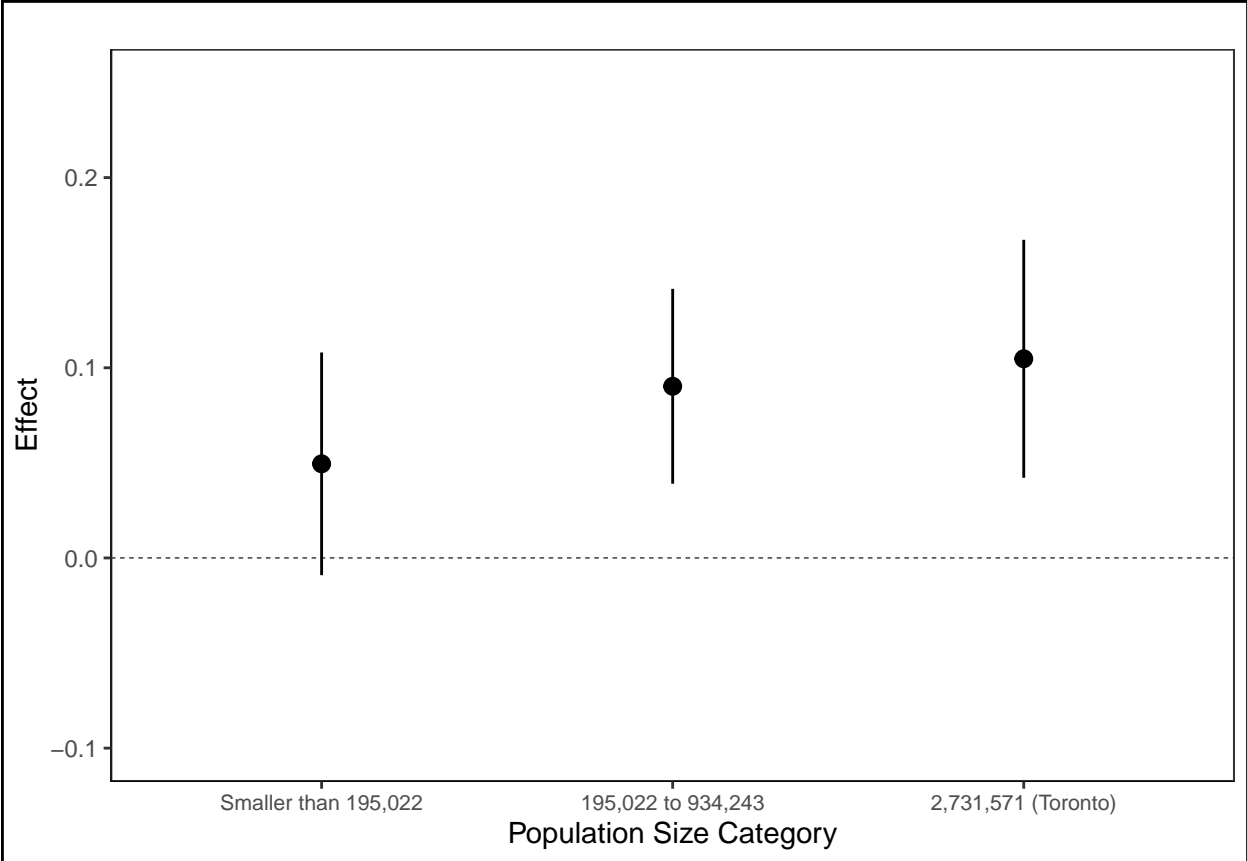


Figure 4: Effect of an incumbency cue in three population categories.

Whiskers represent 95% confidence intervals. These findings are indicative of a robust relationship between population size and the effect of an incumbency cue. Full regression results are included in Appendix Section 3.

The small population subset produces a point estimate of 5%, while the lower bound of its confidence interval crosses zero. From here, the estimates for the medium and large population size categories increase one after the other. In the medium size category there is a 9% increase in the probability of voting for the incumbent if they are randomly assigned incumbent status, and in the largest population category this quantity is 11%. Like the estimates shown in 3, the confidence intervals presented in 4 show that the data is consistent with population size having no effect on the voting for incumbent candidates. Still, these findings do rule out heteroskedasticity, lending greater robustness to estimates presented in 3.



## Discussion and Conclusion

In this chapter I find that as population size increases, the incumbency cue has a stronger influence on vote choice, which comports with the findings of the previous chapter's measurement of incumbent success across population sizes. The previous chapter showed that, after acclamations were controlled for, incumbent success rates increased as population size increased. One likely cause of this relationship is that voters in larger municipalities rely more heavily upon cues when choosing who to vote for. The existing literature demonstrates well that the incumbency cue trumps nearly every other cue in elections (Adams, Lascher, and Martin 2021; Crowder-Meyer, Gadarian, and Trounstine 2020; Kam and Zechmeister 2013). Thus, it is not surprising that when incumbent status is cued, it leads to higher incumbent success rates.

Why is it that voters in larger municipalities rely more heavily on the incumbency cue? One potential explanation is that voters in large municipalities have become accustomed to using the incumbency cue as a heuristic of candidate quality because, as we have seen here, incumbency is a strong determinant of electoral success in larger municipalities (see Fowler 2018). In relation to this, voters in smaller municipalities may assume that incumbent status tells them very little about the quality of an incumbent. This is especially likely given the smaller, more familiar setting that smaller municipalities likely provide, which would result in higher levels of information due to the relative ease with which members of a smaller community would have in obtaining information about candidates.

The sociological literature on population size and urbanization can provide us with some clues about what mechanisms likely lead to smaller places having higher levels of information. Size has a significant influence over the demographic diversity of municipalities (Dahl and Tufte 1973). In turn, there is an intuitive connection between diversity and the information environment: it is not difficult to think of municipalities that are so small and homogeneous that they consist of only a single community, or subculture, as it is called in

the sociology literature. Hill Spring, Alberta, with an overwhelmingly homogeneous population of only 164 people is an illustrative example, and other similarly sized communities are not uncommon. In Canada there are 2177 municipalities with populations of less than 500 people. Municipalities of this size account for 42.3% of all municipalities in Canada.<sup>13</sup> When a municipality consists of so few members, it is likely that each member is part of the same community, or if not, then that only a few social divisions exist (Dahl and Tufte 1973).

The link between the number of social divisions, the community, and information is made by the sociological concept of *community attachment*. The definition of community attachment is more or less self-evident: it is the level of affinity that community members have to their community (C. S. Fischer 1975; Goudy 1990). Fischer (1975) gives a summary of the general implications of community attachment that is informative to the discussion of municipal size and information: “The higher rates of ‘deviance and disorganization’ in cities are not accounted for by such factors as alienation, anonymity, and impersonality, but instead by the congregation of numbers of persons, ‘critical masses,’ sufficient to maintain viable unconventional subcultures” (1320).

While Fischer sought to explain social deviance, his observation about a proliferation of subcultures in cities, as opposed to rural areas, is helpful. As the population size of a municipality, it is likely that it will come to house an increasing number of cultural communities, or subcultures. This process by which the number of cultural communities increases as urbanity increases has implications for how much information about political candidates is available to the average voter. We can expect that as the number of subcultures in a municipality increases, each individual will become less and less known to the members of their municipality as a whole – including candidates for political office.<sup>14</sup>

While community attachment doesn’t perfectly account for strength and number of inter-

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<sup>13</sup>Source: Statistics Canada, 2016 Census of Population.

<sup>14</sup>This rests on the relatively safe assumption that each individual is most closely associated with members of the subculture to which they belong.

personal connections, higher levels of community attachment would likely tend to result in a richer information environment during elections. This is because each citizen of the municipality would tend to be more well known to other citizens when compared to larger municipalities. This would, on average, lead to small size having a direct enriching impact on the information environment.

While these are suggestive social group dynamics that could help explain the findings of this chapter, there is no empirical evidence to suggest that voters in the smallest municipalities possess higher levels of information, thus relying less on incumbency cues. Returning to acclamations, the astonishingly large influence of acclamation in these smallest of places provides additional evidence that their electoral politics function quite differently than the large cities that typically receive the most attention in the political science literature. It is also likely that big city elections are more competitive, and that fringe candidates run in them more frequently. If this is the case, then incumbency would provide an especially strong cue of candidate quality in big city elections.

For these reasons, further experimental work with participants from a larger range of population sizes is necessary. Work that directly compares the amount of information present in varying sizes of municipalities would also make a significant contribution to our understanding of how differences in information change the affect that incumbency cues have in elections.

## Chapter 6: Conclusion

In this thesis I have made progress towards answering the puzzling aspects of municipal incumbent success and population size in Canada. To review, the puzzle stems from three main features of existing findings. First, the studies that measure incumbent success while including population size as one of the independent variables produce findings that contradict one another. Second, there are more studies to work from that examine the largest Canadian municipalities, but their estimates of incumbent success rates are very high – above 80% in every study using elections data from 1990 or later (Kushner, Siegel, and Stanwick 2001; Lucas and Sayers 2018; Moore, McGregor, and Stephenson 2015). This makes it difficult to imagine that incumbent success rates in the smaller municipalities are even larger. Third, what findings have been derived using likely correlates of population size don't match what few things we do know about incumbent success in Canadian municipalities. Others have found that electoral salience seems to be correlated with lower incumbent success rates (Fowler 2016). However, in Canada, if we assume that elections become more salient when the policy areas their officers work in have greater consequences, it appears that greater salience has little to do with incumbent success.

In this thesis I have sought to resolve these issues by studying how incumbency affects electoral outcomes across Canadian municipalities of different population sizes. In Chapter 4, I found that levels of incumbent success depend heavily upon the presence of acclaimed incumbents. In smaller municipalities there are many more such acclamations, which causes an inverse relationship between population size and incumbent success in Canada. Ryšavý and Bernard (2013) is the only other study of population size and incumbent success that states its inclusion of acclaimed incumbents, and it is also the only other study that finds an inverse relationship between population size and incumbent success. This agreement between my findings in Chapter 4 and Ryšavý and Bernard (2013) grants the acclamation-based incumbent success rates present in smaller municipalities more support.

Acclamations help explain the first piece of the puzzle. That is, that some studies on population size and incumbent success have found a positive relationship while others have not. After excluding acclamations from the analysis, the relationship between population size and incumbent success reverses, and incumbent success rates increase as population size increases. Thus, it appears that the electoral dynamics related to incumbency and population size function in similar ways across studies, with the inconsistencies in their findings being a result of whether they included acclamation in their election results data. The importance of acclamations that I show in Chapter 4 is, in itself, an interesting finding because it reveals that the electoral politics of the smallest municipalities are quite exceptional due to the prevalence of acclamations there.

The second puzzling aspect of the existing literature – that it is difficult to image incumbent success rates in smaller municipalities being even higher than the measurements we have for large urban centres – is also answered in this project. In chapter 3 (figure 3) I began my analysis by conducting descriptive estimates of incumbent success rates using a full range of municipal population sizes. These simple measurements reveal that incumbent success rates are indeed slightly higher in the smallest municipalities. The more robust estimates of incumbent success that I conducted in the latter part of that chapter confirm this initial finding, and also illustrate the importance of acclamations and candidate counts. In addition, they highlight heterogeneity at the provincial level, where we have seen that incumbent candidates in Quebec’s smallest municipalities do particularly well compared to their counterparts in the province’s large cities. By controlling for acclamations, I show that incumbents in larger municipalities tend to win contested elections more frequently than is the case in smaller municipalities.

The third and final puzzling aspect of existing findings is that the most likely correlates of population size don’t appear to function in the same way in Canada the way they have elsewhere. It doesn’t appear that salience should be the first mechanism we turn to when

seeking to explain *why* constituents in larger municipalities seem to vote for the incumbent more often. With robust estimates of incumbent success in hand, we are better equipped than ever to search for alternative mechanisms. In Chapter 5, I explored one possible reason incumbent success rates – independent of acclamations – are higher in larger municipalities. There, I took advantage of available survey data to study incumbency cues. I found an 8% increase in the probability that a voter would choose the incumbent candidate if that candidate’s incumbent status is cued. This finding indicates that cues play a profound role in determining electoral outcomes. This finding also aligns with other studies which assert that voters process political information largely through the creation of heuristics (Achen and Bartels 2017; Cantor and Mischel 1979; Conover and Feldman 1989; Crowder-Meyer, Gadarian, and Trounstein 2020; Fowler 2018; Moore, McGregor, and Stephenson 2015). These heuristics can then be used by voters to help them decide who to vote for. The upshot of Chapter 5 is that something about being a big-city resident seems to predispose voters to a heavier reliance upon cues. The content of this thesis only allows for speculative evaluations of why this might be the case.

It is possible to bring together the findings of Chapters 4 and 5 and gain some initial indications of *how much* the incumbency cue contributes to incumbent success. To do this, I use the estimates for the strength of the incumbency cue that were calculated on sub-samples of the Ontario cues data in the previous chapter. Figure 1 provides a graphical representation of these quantities by plotting them alongside predicted municipal level incumbent success rates in the same subsets of the distribution of population size used in the incumbency cue estimates. The figure contains gray and green bars for each population category. The height of each of these bars (both colours) represents the marginal effect of incumbency on incumbent success in a simple bi-variate model at the candidate level. The green portion of each bar represents the size of the effect of an incumbency cue on vote choice in the same population categories.<sup>15</sup> As such, by comparing the relative size of the gray and green areas

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<sup>15</sup>These values are derived from the Sub-sampled approach presented in Chapter 5, Figure 4.

of each bar, we gain a sense of the proportion of incumbent success that is attributable to an incumbency cue, in each population category.

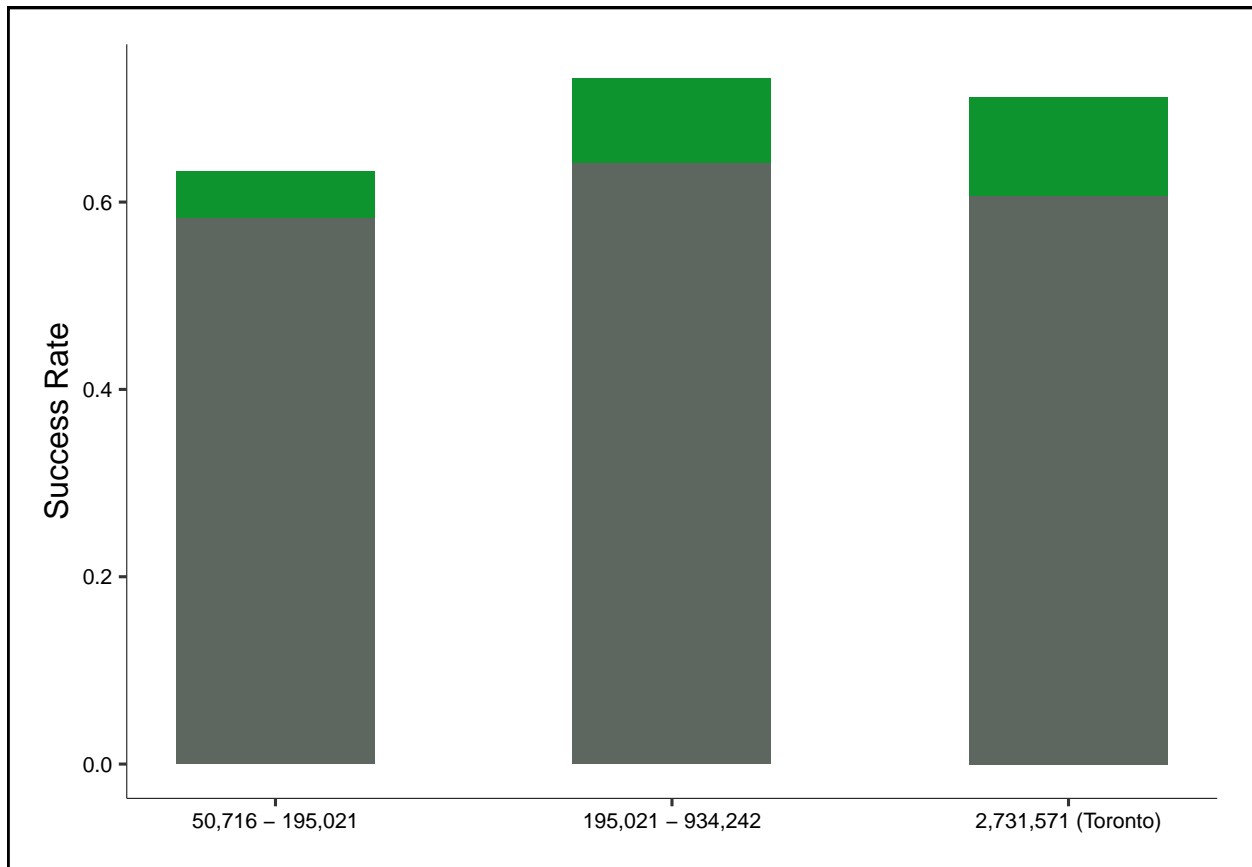


Figure 1: Increase in the probability of being elected due to incumbency

Each bar (both colours) represents the contribution to the probability of electoral success that stems from incumbent status. Green represents the fraction of the increased probability that is due to the incumbency cue, and is based upon estimates derived in the previous chapter. Full tabular data is included Appendix Section 4.

The incumbent success values presented in figure 1 illustrate how dramatically incumbency increases the probability of electoral success. It also shows how the incumbency cue contributes a modest boost to the probability of incumbent success. Incumbency increases the probability of being elected by 63% in the smallest population category, with 5% of that increase being due to the incumbency cue. In the middle population category, incumbency increases the probability of being elected by 73%, and the incumbency cue accounts for 9% of the increase, and in the largest population category incumbents enjoy a 71% boost to their chance of being elected, a slight reduction compared to the next smallest population size category. However, at 11% in the largest population category, the effect of the incumbency

cue continues to increase.

The proportion of the effect of the incumbency cue to the overall increase in the probability of being elected as an incumbent ranges from 8% in the smallest municipalities to 15% in the largest. Thus, the incumbency cue contributes approximated one seventh of the overall increase in the probability of being elected that incumbents enjoy, and in all cases, the incumbency cue has a substantial effect on incumbent success rates. When interpreting these values, we must keep in mind that the overall probability of an incumbent being elected includes all the contributions to their vote share that are made by the incumbency advantage and their personal characteristics. That leaves five sixths of the remaining quantity to be shared among by the scare-off effect, the personal vote, and candidate quality, which itself includes gender, race, ideological/partisan match, etc... Regardless of the exact quantities, it seems that the way voters process political information through the use heuristics and stereotypes has profound consequences for electoral outcomes.

One possible reason that the incumbency cue is used more frequently as municipal population size increases pertains to sociological dynamics of group size that have successfully been applied to the municipal level in the sociology literature. That is, in smaller municipalities there are fewer subcultures, or cultural groups, and as municipal population size increases, so does the number of cultural groups (C. S. Fischer 1975; Goudy 1990). This accounts for the higher incidence of “social deviance” that is often observed in large cities – rather than large cities producing more deviance, deviance simply emerges and is more salient because the number of subcultures tends to be higher in large municipalities.

This research points in several new and exciting directions. There is still the question of what we will find when a Regression Discontinuity design (RDD) estimate of the incumbency *advantage* is used on a full range of population sizes. Such work has been done, but population size is not considered, and informational processes are only speculated (Fowler 2016). A similar expansion of the incumbency cues experiment to more provinces and countries would



verify the generalizability of those findings. Finally, many of the theoretical propositions of this project have necessarily assumed that the amount of available political information varies by population sizes, but only the effect of television news broadcasts on the incumbency advantage have been considered, and no attempt to make such measurements sensitive to population size has been made (Prior 2006). Table 1 outlines a potential research agenda for future work in Canadian municipal incumbency.

Table 6: Future Research

Component	Data Required	Methods
<i>Incumbency Advantage</i>		
Incumbency Cue	Availability of information	Models on the effect increasing levels of information have on incumbent support
Scare-off	Data on incumbent safety	Models on the effect incumbent safety has on whether high quality candidates run against the incumbent
Personal Vote	Comparative data on institutionalized means of increasing personal connections	Comparison of country-specific models of the incumbency advantage
<i>Candidate Quality</i>		
	Characteristics of candidates	Simple models of electoral success

This thesis has utilized two approaches to further understanding municipal incumbency among the many that were available. Sometimes the methodological decisions made here stemmed from practical considerations, however the two main empirical questions asked in this thesis represent a significant contribution to the Canadian incumbency literature. This contribution is both empirical and theoretical. Empirically, my measurement of municipal incumbent success rates in Alberta, British Columbia, Ontario, and Quebec is the first of its kind in Canada because it utilizes a full range of municipal population sizes and includes data from multiple provinces. Theoretically, the quantities I measure shed light upon the

importance of further understand politics in the smallest municipalities and supplants some accounts of incumbent dominance in urban centres. Turning to the incumbency cue, I make a theoretical contribution my providing the first study of the municipal incumbency cue in Canada. Even in the United States, incumbency cues are typically included in studies of other topics as controls. Rather than follow this mentality, my contribution follows the work of Fowler (2018), who argued that the incumbency cue is likely the *most* significant component of the incumbency advantage and should be studied as such. There is ample room for productive, relevant, and engaging work in Canadian municipal incumbency.

-Brambor, Clark, and Golder (2006)

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## Appendix

### Section 1: Chapter 3

#### Section 1.1: Municipalities includes

Below is a list of CSD types defined by Statistics Canada. This list was used to select the municipalities that were included in Figure 1. It also includes a column of the CSD types that were excluded.

Table 7: Criteria for Municipalities Included in Chapter 3, Figure 1

Included	Not Included
Canton (municipalité de)	Chartered community
Cantons unis (municipalité de)	Community
City	Crown colony
Community government	Indian government district
District municipality	Indian reserve
Island municipality	Indian Settlement
Hamlet	Nisga’a land
Local government district	Regional district electoral area
Municipal district	Rural community
Municipalité	Self-government
Municipality	Settlement
Northern hamlet	Special area
Northern village	Subdivision of county municipality
Parish	Subdivision of unorganized
Paroisse (municipalité de)	Terre Inuite
Regional municipality	Terres réservées aux Cris
Resort village	Terres réservées aux Naskapis
Rural municipality	Teslin land
Specialized municipality	Unorganized
Summer village	Village Cri
Town	Village Naskapi
Township	
Township and royalty	
Village	
Village nordique	

Included	Not Included
Ville	

## Section 1.2: Chapter 4, Descriptive Statistics

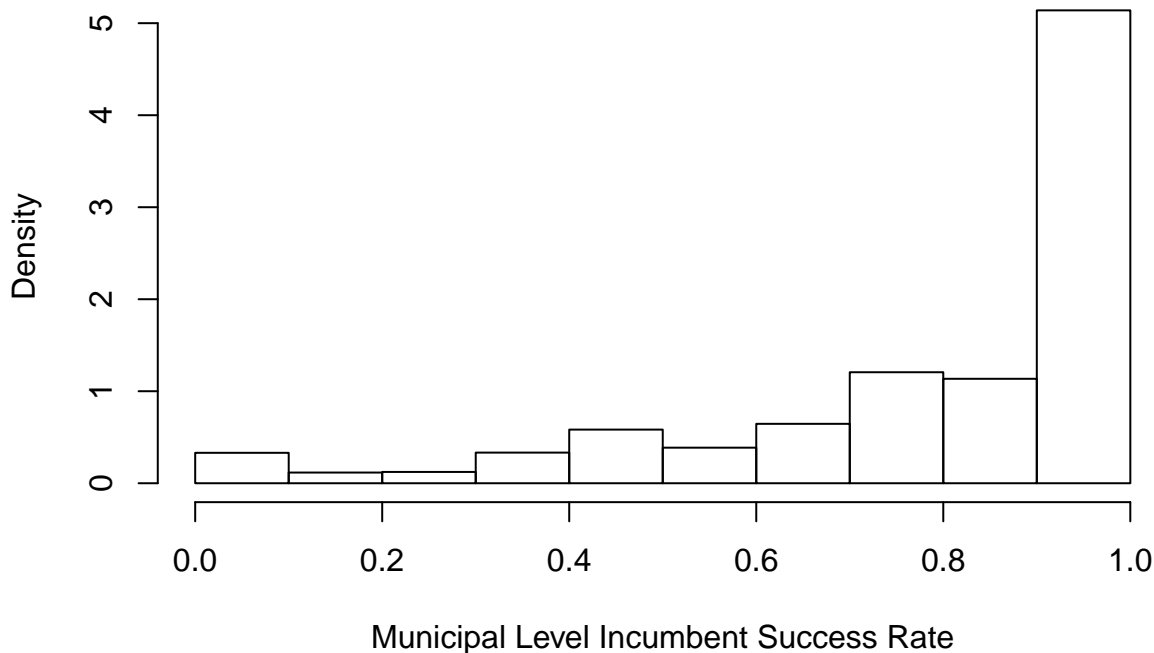
### Section 1.2.1: Full Data

Here, I present descriptive statistics and histograms for the municipal level incumbent success rates and population size variables, which are, respectively, the dependent and independent variables used in Chapter 4. Sections 1.2.2 through 1.2.4 duplicate this approach for every subset of the municipal level incumbent success data that is used in Chapter 4.

Table 8: Descriptive Statistics, Acclamations Only

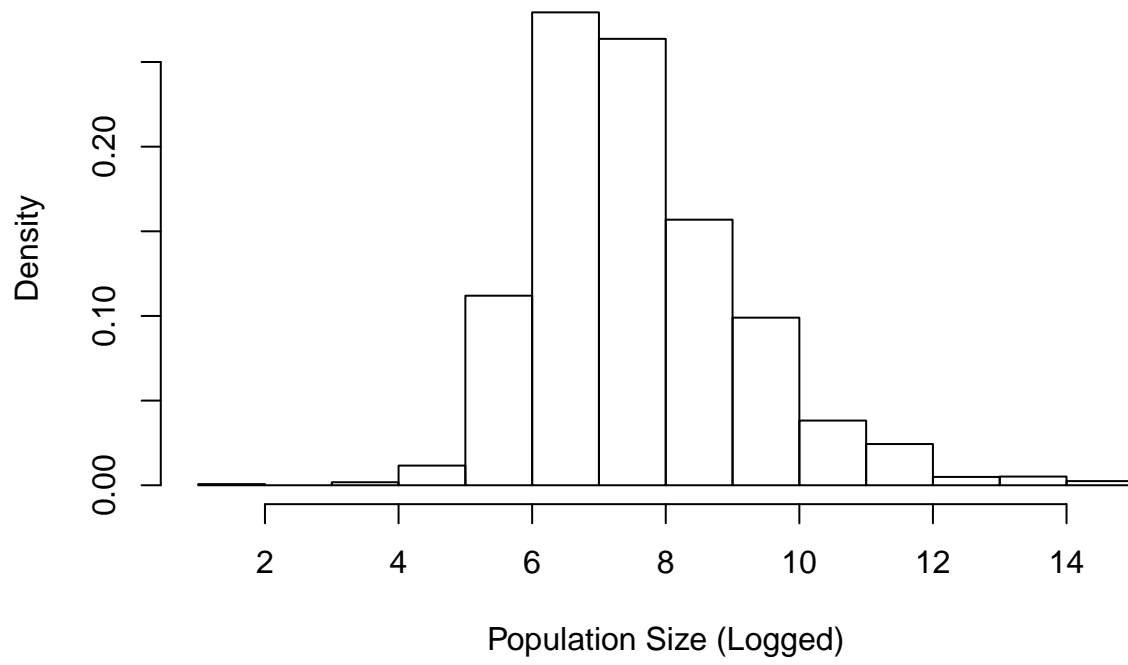
Variable	Mean	Mode	Min	Max	Standard Deviation
Prop. Incumbent Success	0.81	1.0	0.00	1.00	0.25
Population Size (logged)	7.60	5.5	1.61	14.82	1.59

Figure 1: Histogram, Dependent Variable





**Figure 2: Histogram, Independent Variable**

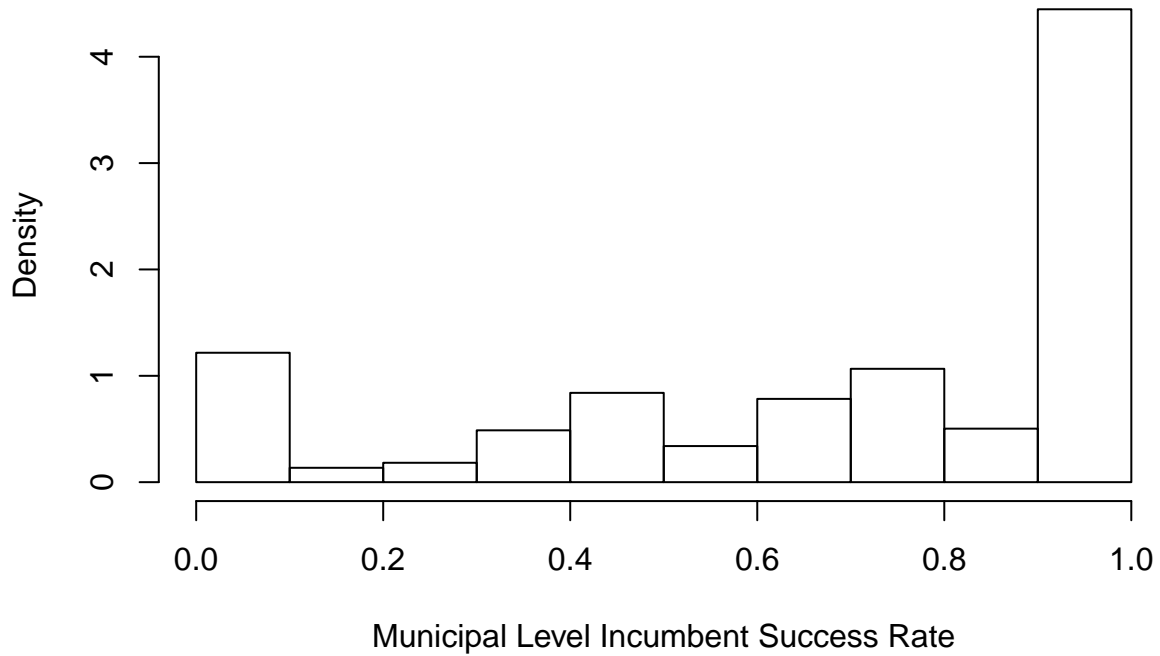


## Section 1.2.2: Excluding Acclamations

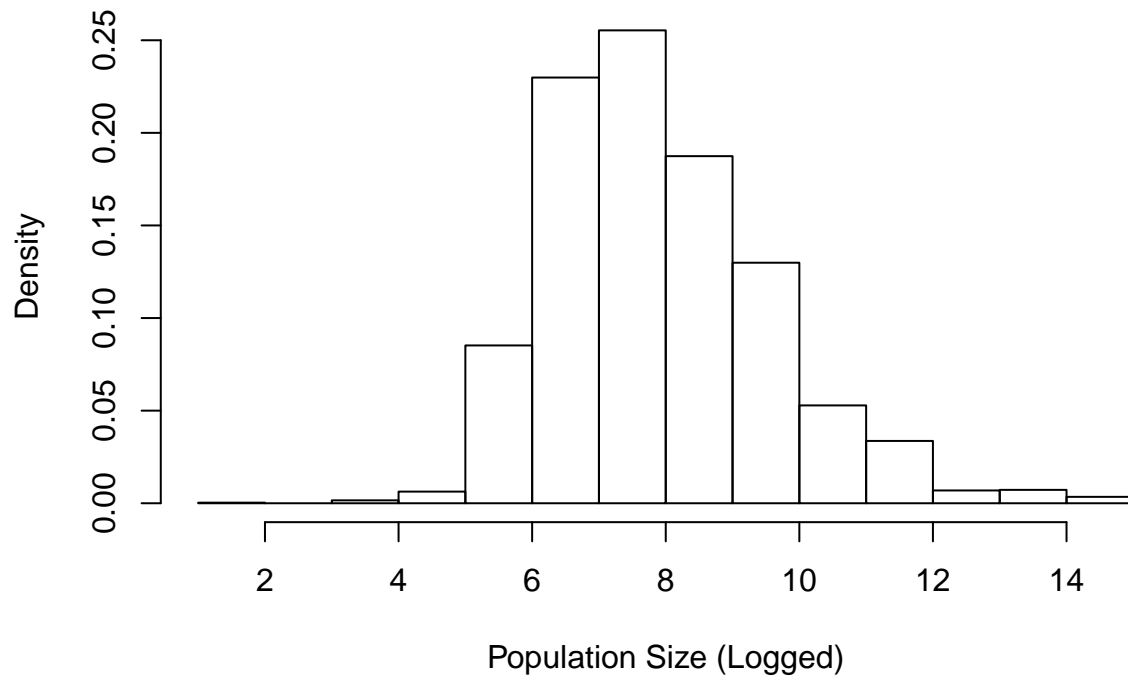
Table 9: Descriptive Statistics, No Acclamations

Variable	Mean	Mode	Min	Max	Standard Deviation
Prop. Incumbent Success	0.71	1.0	0.00	1.00	0.34
Population Size (logged)	7.93	5.5	1.61	14.82	1.66

Figure 3: Histogram, Dependent Variable



**Figure 4: Histogram, Independent Variable**

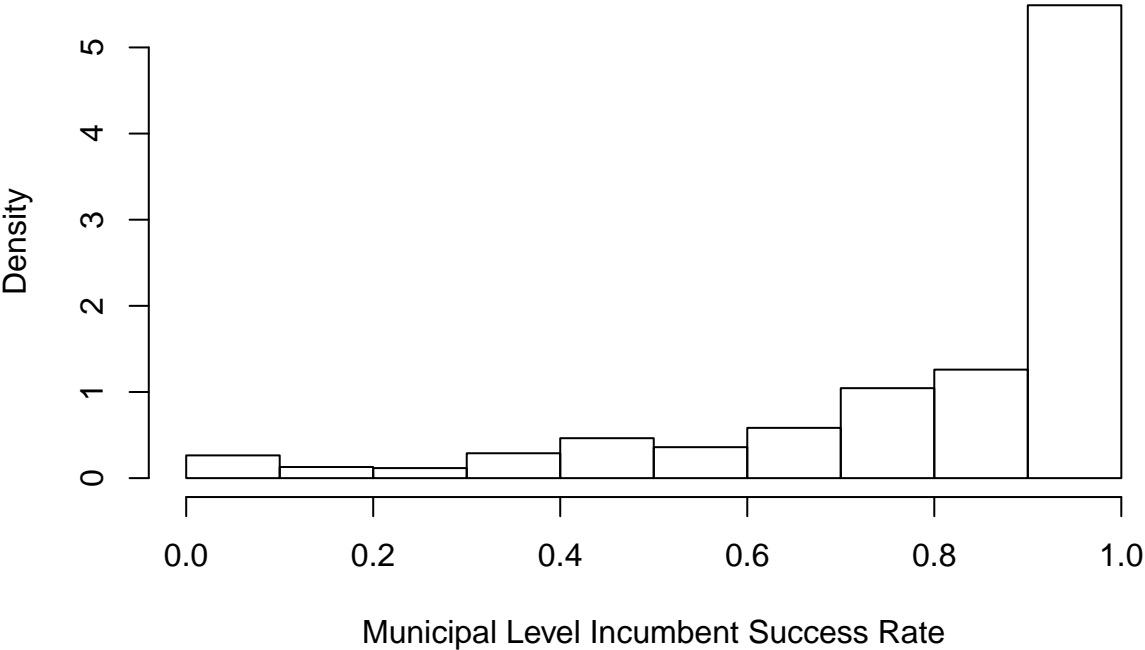


Section 1.2.3: Quebec Only

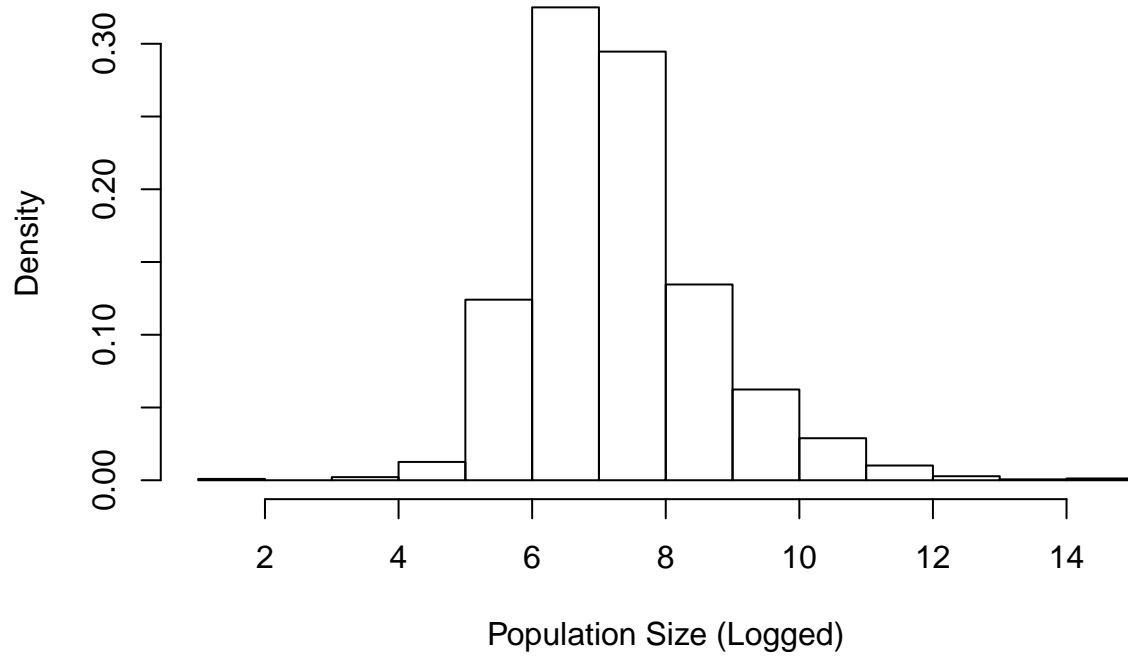
Table 10: Descriptive Statistics, Quebec Only

Variable	Mean	Mode	Min	Max	Standard Deviation
Prop. Incumbent Success	0.83	1.0	0.00	1.00	0.24
Population Size (logged)	7.30	5.5	1.61	14.35	1.37

Figure 5: Histogram, Dependent Variable



**Figure 6: Histogram, Independent Variable**

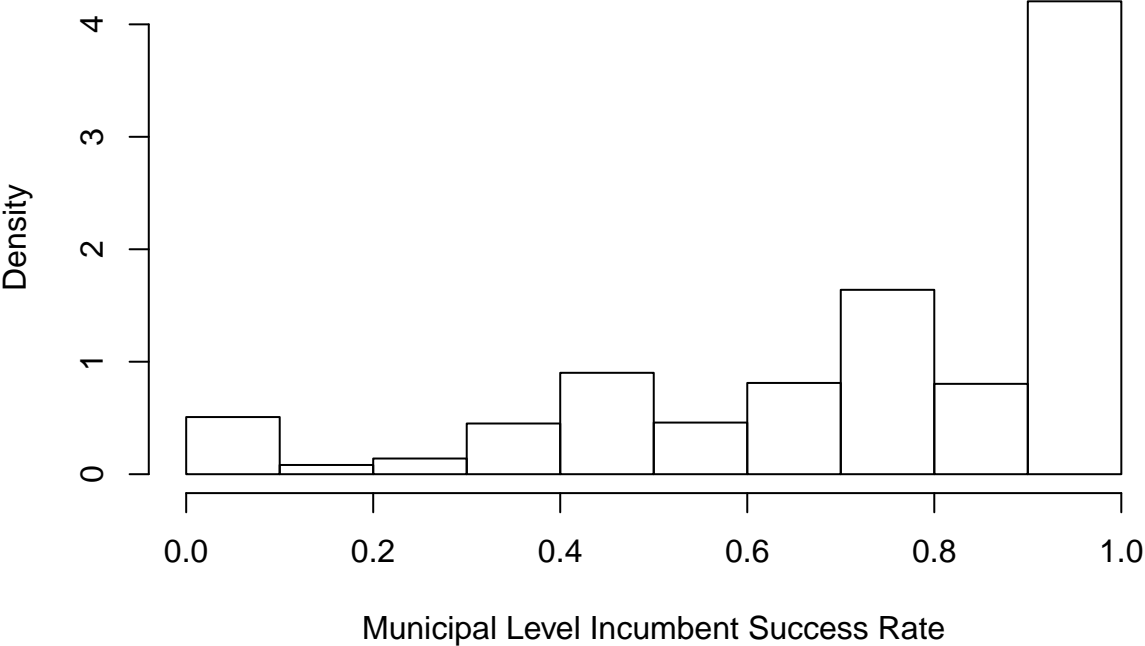


Section 1.2.4: Excluding Quebec

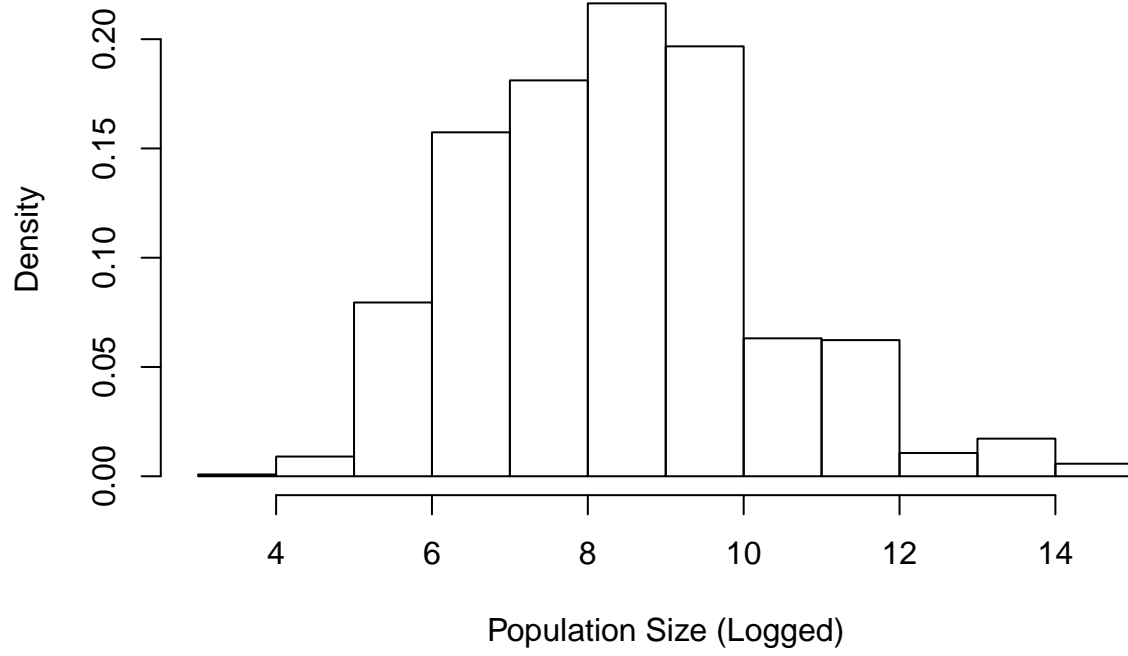
Table 11: Descriptive Statistics, Excluding Quebec

Variable	Mean	Mode	Min	Max	Standard Deviation
Prop. Incumbent Success	0.76	1.0	0.00	1.00	0.28
Population Size (logged)	8.41	5.5	3.69	14.82	1.84

Figure 7: Histogram, Dependent Variable



**Figure 8: Histogram, Independent Variable**



## Section 1.3: Chapter 5, Sub-sample sizes

Figure 4 (main text) serves as a robustness check for the main interaction model that is presented in Figure 3 (main text). The validity of this robustness check hinges upon the sub-samples that are used being relatively equal in size. As such, Table 1 gives the sub-samples and their respective size (N).

Table 12: Population Subset Definitions and Sizes

Sub-sample	Population Size	N
Small	pop. < 195,022	1,113
Medium	$195,022 \leq \text{pop.} < 2,731,571$	1,433
Large	pop. = 2,731,571	934



## Section 2: Chapter 4, Full Regression Results and Predicted Values

### Section 2.1: Figure 3, Full Regression Table

Table 1 gives full regression results for every model of the “Full Data” row in Figure 3 of the main text. This table contains regression results using ordinary least squares on the full municipal level data of incumbent races, including acclamations. Table 2 follows the same pattern as Table 1, except its results are from the “No Acclamations” row of Figure 3.

Table 1: Full Data

	<i>Dependent variable:</i>				
	prop_inc_succ				
	(1)	(2)	(3)	(4)	(5)
logpop	-0.025*** (0.002)	-0.020*** (0.003)	-0.015*** (0.003)	-0.016*** (0.003)	-0.015*** (0.003)
n_cands		-0.001*** (0.0004)	-0.002*** (0.0004)	-0.002*** (0.0004)	-0.002*** (0.0004)
provinceOntario			-0.055*** (0.014)		-0.022 (0.234)
provinceBritish Columbia			-0.053*** (0.012)		-0.047 (0.233)
provinceAlberta			-0.050*** (0.015)		-0.058*** (0.016)
election_year2002				-0.476 (0.306)	-0.485 (0.384)
election_year2003				0.117 (0.307)	0.087 (0.383)
election_year2004				-0.026 (0.250)	-0.025 (0.250)
election_year2005				-0.320 (0.250)	-0.354 (0.276)
election_year2006				0.452 (0.316)	0.433 (0.386)
election_year2007				-0.123 (0.250)	-0.122 (0.250)
election_year2008				-0.408** (0.179)	-0.416 (0.294)
election_year2009				-0.320* (0.178)	-0.374** (0.178)
election_year2010				0.074 (0.229)	0.068 (0.241)
election_year2011				-0.332* (0.179)	-0.340 (0.294)
election_year2013				-0.331* (0.177)	-0.376** (0.178)
election_year2014				-0.350** (0.178)	-0.358 (0.294)
election_year2016				-0.589* (0.306)	-0.587* (0.306)
election_year2017				-0.323* (0.177)	-0.375** (0.178)
election_year2018				-0.381** (0.177)	-0.408 (0.293)
Constant	1.003*** (0.018)	0.983*** (0.019)	0.960*** (0.019)	1.296*** (0.180)	1.346*** (0.180)
Observations	4,475	4,475	4,475	4,475	4,475
R <sup>2</sup>	0.024	0.028	0.035	0.041	0.044

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

**Key:** (1) = Bi-variate, (2) = Cands., (3) = Cands. & Province FEs, (4) = Cands. & Year FEs, (5) = All Controls

Table 2: Excluding Acclamations

	<i>Dependent variable:</i>				
	prop_inc_succ				
	(1)	(2)	(3)	(4)	(5)
logpop	0.0003 (0.004)	-0.001 (0.004)	0.001 (0.004)	0.010** (0.004)	0.010** (0.004)
n_cands		0.0002 (0.0005)	0.0002 (0.0005)	-0.001** (0.001)	-0.001** (0.001)
provinceOntario			-0.025 (0.020)		-0.100 (0.309)
provinceBritish Columbia			-0.011 (0.019)		-0.108 (0.309)
provinceAlberta			-0.044* (0.024)		0.007 (0.025)
election_year2002				-0.482 (0.403)	-0.367 (0.507)
election_year2003				-0.004 (0.405)	0.103 (0.506)
election_year2004				-0.042 (0.329)	-0.042 (0.330)
election_year2005				-0.334 (0.329)	-0.273 (0.364)
election_year2006				0.177 (0.416)	0.282 (0.510)
election_year2007				-0.161 (0.329)	-0.161 (0.330)
election_year2008				-0.305 (0.236)	-0.190 (0.389)
election_year2009				-0.380 (0.234)	-0.373 (0.236)
election_year2010				-0.017 (0.302)	0.018 (0.318)
election_year2011				-0.246 (0.236)	-0.131 (0.389)
election_year2013				-0.359 (0.234)	-0.354 (0.235)
election_year2014				-0.232 (0.235)	-0.117 (0.388)
election_year2016				-0.476 (0.404)	-0.476 (0.404)
election_year2017				-0.134 (0.234)	-0.128 (0.235)
election_year2018				-0.283 (0.234)	-0.174 (0.387)
Constant	0.705*** (0.030)	0.710*** (0.031)	0.704*** (0.032)	0.898*** (0.239)	0.892*** (0.240)
Observations	3,180	3,180	3,180	3,180	3,180
R <sup>2</sup>	0.00000	0.0001	0.001	0.086	0.086

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

**Key:** (1) = Bi-variate, (2) = Cands., (3) = Cands. & Province FEs, (4) = Cands. & Year FEs, (5) = All Controls

## Section 2.2: Figure 4, Full Regression Table

Table 3 gives full regression results for the “Quebec Only” row of models in figure 4 of the main text, which is a subset of the full municipal level data that only contains election results from Quebec municipalities. Table 4 does the same, but for the “Excluding Quebec” row; it is a subset of the full municipal level data that only contains election results from the provinces of Alberta, British Columbia, and Ontario. All models used ordinary least squares on municipal level data.

Table 3: Quebec Only

	<i>Dependent variable:</i>		
	prop_inc_succ		
	(1)	(2)	(3)
logpop	-0.029*** (0.003)	-0.020*** (0.003)	-0.020*** (0.003)
n_cands		-0.004*** (0.0005)	-0.004*** (0.0005)
election_year2009			-0.266 (0.239)
election_year2013			-0.265 (0.239)
election_year2017			-0.270 (0.239)
Constant	1.046*** (0.023)	1.018*** (0.023)	1.287*** (0.242)
Observations	3,255	3,255	3,255
R <sup>2</sup>	0.027	0.045	0.046

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

**Key:** (1) = Bi-variate, (2) = Cands., (3) = Cands. & Year FEs

Table 4: Excluding Quebec

	<i>Dependent variable:</i>				
	prop_inc_succ				
	(1)	(2)	(3)	(4)	(5)
logpop	-0.008* (0.004)	-0.009* (0.005)	-0.008 (0.005)	-0.009 (0.006)	-0.009 (0.006)
n_cands		0.0001 (0.001)	0.0001 (0.001)	-0.0004 (0.001)	-0.0005 (0.001)
provinceOntario			-0.012 (0.018)		0.015 (0.027)
provinceAlberta			0.006 (0.021)		0.029 (0.353)
election_year2002				-0.497 (0.337)	-0.468 (0.486)
election_year2003				-0.028 (0.341)	-0.012 (0.480)
election_year2004				-0.045 (0.275)	-0.044 (0.276)
election_year2005				-0.502 (0.337)	-0.473 (0.488)
election_year2006				0.074 (0.363)	0.094 (0.479)
election_year2007				-0.150 (0.276)	-0.149 (0.276)
election_year2008				-0.325 (0.198)	-0.297 (0.406)
election_year2010				-0.047 (0.255)	-0.041 (0.276)
election_year2011				-0.246 (0.198)	-0.218 (0.406)
election_year2013				-0.295 (0.198)	-0.295 (0.198)
election_year2014				-0.278 (0.198)	-0.249 (0.405)
election_year2016				-0.539 (0.338)	-0.539 (0.338)
election_year2017				-0.283 (0.199)	-0.283 (0.200)
election_year2018				-0.308 (0.197)	-0.290 (0.404)
Constant	0.829*** (0.037)	0.832*** (0.040)	0.831*** (0.043)	1.139*** (0.206)	1.110*** (0.406)
Observations	1,220	1,220	1,220	1,220	1,220
R <sup>2</sup>	0.003	0.003	0.004	0.017	0.017

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

**Key:** (1) = Bi-variate, (2) = Cands., (3) = Cands. & Province FEs, (4) = Cands. & Year FEs, (5) = All Controls

### Section 2.3: Figures 3 and 4, Predicted Values

Table 5 has one column of predicted values for each model used Figure 3 of the main text for in-sample values of population size. Table 6 does the same for the second “Excluding Acclamations” row of Figure 3. Finally, Tables 7 and 8 do the same for the “Quebec Only” and “Excluding Quebec” rows of Figure 3 of the main text, respectively. Note that all predicted values fall within the possible range of a probability, which is 0 to 1, inclusive.

Table 5: Predicted Values (Full Data)

Population Size	Simple	Cands.	Cands. & Province FEs	Cands. & Year FEs	All Controls
3	0.9288140	0.9071376	0.8977332	0.8424416	0.8666128
4	0.9040037	0.8870352	0.8828071	0.8262292	0.8512377
5	0.8791935	0.8669328	0.8678810	0.8100168	0.8358626
6	0.8543833	0.8468304	0.8529549	0.7938044	0.8204875
7	0.8295731	0.8267279	0.8380288	0.7775920	0.8051125
8	0.8047628	0.8066255	0.8231027	0.7613796	0.7897374
9	0.7799526	0.7865231	0.8081766	0.7451672	0.7743623
10	0.7551424	0.7664206	0.7932505	0.7289548	0.7589872
11	0.7303322	0.7463182	0.7783244	0.7127424	0.7436122
12	0.7055220	0.7262158	0.7633983	0.6965300	0.7282371
13	0.6807117	0.7061134	0.7484722	0.6803176	0.7128620
14	0.6559015	0.6860109	0.7335461	0.6641052	0.6974869
15	0.6310913	0.6659085	0.7186200	0.6478928	0.6821118

Table 6: Predicted Values (No Acclamations)

Population Size	Simple	Cands.	Cands. & Province FEs	Cands. & Year FEs	All Controls
3	0.7064018	0.7107894	0.7101663	0.6340843	0.7370676
4	0.7067288	0.7102559	0.7113333	0.6441365	0.7469918
5	0.7070558	0.7097225	0.7125003	0.6541888	0.7569160
6	0.7073828	0.7091890	0.7136674	0.6642410	0.7668402
7	0.7077098	0.7086555	0.7148344	0.6742932	0.7767643
8	0.7080368	0.7081221	0.7160014	0.6843455	0.7866885
9	0.7083638	0.7075886	0.7171684	0.6943977	0.7966127
10	0.7086908	0.7070551	0.7183354	0.7044499	0.8065369
11	0.7090178	0.7065217	0.7195024	0.7145022	0.8164611
12	0.7093448	0.7059882	0.7206695	0.7245544	0.8263852
13	0.7096718	0.7054547	0.7218365	0.7346066	0.8363094
14	0.7099988	0.7049213	0.7230035	0.7446589	0.8462336
15	0.7103258	0.7043878	0.7241705	0.7547111	0.8561578

Table 7: Predicted Values (Quebec Only)

Population Size	Simple	Cands.	Cands. & Year FEs
3	0.9591083	0.9176853	0.9155134
4	0.9301043	0.8978757	0.8954826
5	0.9011003	0.8780660	0.8754518
6	0.8720964	0.8582563	0.8554211
7	0.8430924	0.8384467	0.8353903
8	0.8140884	0.8186370	0.8153596
9	0.7850845	0.7988274	0.7953288
10	0.7560805	0.7790177	0.7752980
11	0.7270765	0.7592080	0.7552673
12	0.6980726	0.7393984	0.7352365
13	0.6690686	0.7195887	0.7152058
14	0.6400646	0.6997791	0.6951750
15	0.6110607	0.6799694	0.6751443

Table 8: Predicted Values (Excluding Quebec)

Population Size	Simple	Cands.	Cands. & Province FEs	Cands. & Year FEs	All Controls
3	0.8053376	0.8078502	0.8082691	0.8235076	0.7945143
4	0.7973116	0.7993346	0.8001703	0.8143843	0.7854879
5	0.7892857	0.7908191	0.7920714	0.8052611	0.7764615
6	0.7812597	0.7823036	0.7839726	0.7961378	0.7674351
7	0.7732337	0.7737880	0.7758737	0.7870146	0.7584087
8	0.7652077	0.7652725	0.7677748	0.7778913	0.7493823
9	0.7571818	0.7567569	0.7596760	0.7687681	0.7403559
10	0.7491558	0.7482414	0.7515771	0.7596449	0.7313295
11	0.7411298	0.7397258	0.7434783	0.7505216	0.7223031
12	0.7331038	0.7312103	0.7353794	0.7413984	0.7132767
13	0.7250779	0.7226948	0.7272805	0.7322751	0.7042503
14	0.7170519	0.7141792	0.7191817	0.7231519	0.6952239
15	0.7090259	0.7056637	0.7110828	0.7140286	0.6861975



### Section 3: Chapter 5

Tables are presented in the same order as their corresponding figures appear in the main text. Table 1 presents full elections results for the three election cycles that Sean Chu ran in, and corresponds to Figures 1 of the main text. Table 2 gives full tabular results for the data presented in Figure 2 of the main text. These data were taken from the CMED data that was primarily used in Chapter 4: *Measuring Incumbent Success*.

Table 1: Calgary Ward 4, Advanced and Election Day Polls

Candidate Name	Vote Share	Votes	Total Votes	Polling
Angela McIntyre	0.1087213	1,198	11,019	Advanced Polls
DJ Kelly	0.3647336	4,019	11,019	Advanced Polls
Sean Chu	0.5017697	5,529	11,019	Advanced Polls
Shane Roberts	0.0247754	273	11,019	Advanced Polls
Angela McIntyre	0.1202180	2,162	17,984	Election Day
DJ Kelly	0.4634119	8,334	17,984	Election Day
Sean Chu	0.3794484	6,824	17,984	Election Day
Shane Roberts	0.0369217	664	17,984	Election Day

Table 2: Sean Chu vs. Runners-up in 3 Elections

Candidate Name	vote_share	election_year
Sean Chu	0.427	2,013
Gael Macleod	0.396	2,013
Sean Chu	0.484	2,017
Gregory Gordon Miller	0.414	2,017
Sean Chu	0.427	2,021
Daneil James (DJ) Kelly	0.423	2,021

Table 3 presents full regression results for the model used to generate figures 3 and 4 of the main text. Table 4 presents average marginal effects (AMEs) and their corresponding confidence intervals at representative expected values. Table 5 presents the predicted values that were generated using the alternative models that are calculated on subsets of the data rather than by using AMEs.

Table 3:

<i>Dependent variable:</i>	
	munvote
munvote_inc	-0.175 (0.170)
logpop	0.007 (0.009)
munvote_inc:logpop	0.020 (0.013)
Constant	0.439*** (0.121)
Observations	3,480
R <sup>2</sup>	0.010
Adjusted R <sup>2</sup>	0.009
Residual Std. Error	0.493 (df = 3476)
F Statistic	11.153*** (df = 3; 3476)
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01

Table 4: AMEs

logpop	AME	SE	z	p	lower	upper
11.00210	0.0401393	0.0317471	1.264346	0.2061060	-0.0220839	0.1023625
11.98293	0.0593063	0.0220259	2.692569	0.0070904	0.0161363	0.1024763
12.99453	0.0790745	0.0167773	4.713194	0.0000024	0.0461917	0.1119574
13.99783	0.0986806	0.0203950	4.838476	0.0000013	0.0587072	0.1386541
14.91412	0.1165864	0.0288363	4.043044	0.0000528	0.0600683	0.1731045

Table 5:

	<i>Dependent variable:</i>		
		munvote	
	(1)	(2)	(3)
munvote_inc	0.049* (0.030)	0.090*** (0.026)	0.105*** (0.032)
Constant	0.521*** (0.021)	0.518*** (0.019)	0.552*** (0.023)
Observations	1,113	1,433	934
R <sup>2</sup>	0.002	0.008	0.011
Adjusted R <sup>2</sup>	0.002	0.008	0.010
Residual Std. Error	0.498 (df = 1111)	0.494 (df = 1431)	0.486 (df = 932)
F Statistic	2.751* (df = 1; 1111)	11.951*** (df = 1; 1431)	10.789*** (df = 1; 932)

Note:

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

**Interpretation of Table 5** The intercept is the only significant coefficient generated by the model presented in Table 3, however, in multiplicative interaction models, regression results are typically only output for the case of the interaction term that equals zero. In this case, the interaction term (the incumbency cue treatment) equals zero when the incumbency cue was not provided. As such, the results of this table are misleading because they present estimates for a situation that is not of interest. Namely, these regression results are for the case of the survey respondent *not* receiving an incumbency cue. Thus, the AME results in table 4 should be used to judge the statistical significance of the relationship between vote choice, the incumbency cue, and population size. For a detailed discussion of how the coefficients of multiplicative interaction models, like one used here, should be interpreted, see Brambor, Clark, and Golder (2006).

## Section 4: Chapter 6

Table 1 presents the data used in figure 1 of the main text. The “Probability” column gives the effect of incumbent status on the probability of being elected. The “Cues Effect” column contains an estimate of the contribution that incumbency cues make to the overall probability of incumbent success. In figure 1, the total height of each bar is represented by the values of “Probability”, and the green portion of each bar represents the values of “Cues Effect” column of the table.

Table 1: Effect of incumbent status on the probability of being elected

Population Size	Probability	Cues Effect
50,716 - 195,021	0.6332593	0.0494976
195,021 - 934,242	0.7318699	0.0902655
2,731,571 (Toronto)	0.7112483	0.1047236

## References

- Brambor, Thomas, William Roberts Clark, and Matt Golder. 2006. "Understanding Interaction Models: Improving Empirical Analyses." *Political Analysis* 14 (1): 63–82. <http://www.jstor.org/stable/25791835>.