1.0. Introduction

What is the strength of incumbency advantage in a non-partisan electoral system? More specifically, does incumbency advantage in non-partisan electoral systems align with or contradict what we expect in a partisan electoral system? What we know about incumbency advantage comes from the study of partisan political systems, such as the United States and Canadian federal elections. Little to no work has examined whether the conclusions of the standard incumbency advantage literature travel to non-partisan systems. This is understandable, because non-partisan systems are relatively rare in representative democratic politics. However, Canada's northern territories offer an interesting opportunity for the study of incumbency advantage. I use Canada's three Northern territories as a case study to compare incumbency advantage in partisan versus non-partisan political systems. The NWT and Nunavut use a non-partisan form of Westminster parliament known as "consensus government," where the Yukon Legislative Assembly has operated with political parties since the 1978 territorial election.

I find mixed results on incumbency advantage in the territories. On one hand, the results of this thesis suggest that there is a weak scare-off effect experienced by incumbents in territorial elections. Moreover, contrary to expectations, incumbency is weaker in rural districts compared to urban districts. Lastly, the findings of this thesis suggest that incumbency advantage in Nunavut is weaker than in the Northwest Territories. With that being said, no difference in incumbency was found between in consensus government and the Yukon's partisan system.

This thesis contributes to the political science literature in the study of Northern Canadian politics and the study of electoral politics, by expanding beyond the current questions and methodologies most used in the study of this region. Much of the research that has been conducted on consensus government has focused on qualitative methods, such as interviews and

surveys of MLAs and descriptive statistics. While there have been some surveys done on Nunavut's political culture, most notably by Ailsa Henderson (2007), electoral data has yet to be thoroughly explored to study territorial politics, including incumbency. The study of consensus government has largely focused on answering questions regarding political culture, conventions, and the system's operation once Members have been elected.

The thesis consists of seven sections including the introduction. The next section briefly explains the political systems used in Canada's three territories: the NWT, Nunavut, and Yukon. This includes an overview of the three territories' distinct histories of political development, and demographic differences that have contributed to the Yukon having a partisan territorial legislature, compared to the NWT and Nunavut's non-partisan system. The third section outlines the existing incumbency advantage literature; it also introduces the hypotheses. Fourth, the thesis introduces the territorial elections dataset used and overviews the regression discontinuity design and logistic regression models used to test the hypothesis. Fifth, the results of the regression models are presented. Finally, the sixth section discusses whether the results align with or contradict the hypotheses, and how the thesis fits in with the previous incumbency advantage and Northern Canadian politics literature. The discussion is followed by the conclusion.

2.0. Background

This section briefly overviews the political systems used in the NWT, Nunavut, and Yukon, along with histories of political development. The section first provides an overview of political development in the three territories. Then, the section outlines the demographic differences between the territories. In sum, this section aims to explain why the NWT and Nunavut operate using the non-partisan system of consensus government, while the Yukon uses political parties.

The three territories all have unique histories of political development and demographic characteristics. These factors have shaped the political institutions in each territory. Before an overview of the incumbency advantage literature, and an introduction of the hypothesis, a brief background on territorial politics in the three territories is provided, including differing histories of political development and demographic differences.

There have been various explanations for why the NWT and Nunavut never followed the Yukon in adopting a partisan political system. The two main explanations are regarding differing histories of political development, and demographic explanations, specifically: differing levels of urbanization, and Indigenous influences on political culture. First, it has been argued that political development in the NWT is still "politically immature", and unable to maintain a political party system (White 2001, 85). The NWT's path toward responsible government has been much more arduous than the Yukon's (Coates and Powell 1989, 69). For example, the Yukon gained a fully elected legislature in 1908; this was over a half-century before the Northwest Territories in 1975 (Alcantara et.al 2012, 330). Likewise, in 1979, the Yukon government received executive authority from the federal government, 7 years before the NWT (Alcantara et.al 2012, 330; Alcantara 2013, 168). The expedited process of gaining political autonomy in the Yukon compared to the NWT has been attributed to differing histories of settler migration, specifically during periods of resource development.

Some scholars, such as Dickerson (1992, 15), Cameron and White (1995, 47), Dacks (1986), and Sabin (2016) have partially attributed the expedited political autonomy and development of the Yukon to a wave of settler migration during the Klondike Gold Rush. The 1901 Canadian census documented Yukon's total population as 27,200, with 88 percent being non-Indigenous (Sabin 2016, 48). While many of these settlers left the Yukon after the rush, "the Yukon

did not die after the rush" (Coates and Morrison 2005, 149) and those who remained in the territory aimed to develop local political institutions and displace federal control over the region (Sabin 2016, 48). By comparison, there was not the same level of settler demands for political autonomy in the NWT in the first half of the 20th century. For example, in 1905, when the territory was carved up to create Alberta and Saskatchewan, the administration of the Northwest Territories was reverted to Ottawa. Subsequently, it was not until 1947 that a Northern resident was appointed to the Council of the Northwest Territories, followed by the first elected members in 1950 (Dunbar 2008, 11). In sum, it has been suggested that the differing rates of political development and the acquisition of political autonomy by the Yukon government versus the NWT government have partially attributed to the unique political culture in the Northwest Territories, including the lack of political parties.

Lastly, Nunavut has a slightly different history of political development compared to the NWT and Yukon. Nunavut is a byproduct of the 1993 Nunavut Land Claims Agreement (NCLA).[1] The Eastern Arctic separated from the Northwest Territories in 1999 to form the predominantly Inuit territory of Nunavut. The new territory of Nunavut inherited the NWT's non-partisan electoral system. Many of the key figures in the pre-division Northwest Territories assumed critical roles in the new Nunavut government. For example, Kelvin Ng, who was the NWT's health and social services minister became Nunavut's first finance minister. Likewise, Manitok Thompson, who was an MLA in the NWT legislature from 1995 to 1999, was part of Nunavut's first cabinet, serving as minister of municipal and community affairs (Hicks and White 2015, 80). Thus,

[1] Article 4 of the NCLA, titled "Nunavut Political Development" states that: "The Government of Canada will recommend to Parliament, as a government measure, legislation to establish, within a defined time period, a new Nunavut Territory, with its own Legislative Assembly and public government, separate from the Government of the remainder of the Northwest Territories." The full NCLA can be found here: https://www.gov.nu.ca/sites/default/files/Nunavut_Land_Claims_Agreement.pdf

Nunavut has a unique political history from the other two territories, as a predominantly Inuit territory that developed out of a land claims agreement. However, Nunavut shares some similarities with the Northwest Territories, through the continuation of consensus government following the territory's creation. Along with political development, there have been alternative explanations for the consensus system used in the NWT and Nunavut, specifically demographic considerations.

The political development argument has been described as overly simplistic for various failed attempts to introduce political parties into the territorial legislature, the presence of parties federally in the NWT and Nunavut, and the partisanship of the Yukon's legislative assembly.[2] Alternatively, White (2001, 85) noted that northerners (both Indigenous and non-Indigenous) have simply rejected political parties as "unsuitable to northern needs and conditions." A second explanation for the NWT and Nunavut's development of consensus government pertains to the territory's demographics and Indigenous influences on political culture. Compared to the NWT and Nunavut, the Yukon is the most urbanized of the three territories. Per the 2021 census, 70 per cent of the Yukon's population resides in the capital, Whitehorse. As such, the Yukon Legislative Assembly currently has 12 of 19 electoral districts classified as urban (11 in Whitehorse and 1 in Dawson City). Moreover, the Yukon has the smallest Indigenous population of the three territories, with only 23 per cent of Yukon's residents identifying as Indigenous (Yurris, Béland, and Tombe 2024).[3]

[2] In the 1999 territorial election, the Western Arctic NDP ran five candidates in Yellowknife, all of whom were unsuccessful, with the most successful of these candidates finishing third with 20.4 per cent of the vote. (Dunbar 2008, 38).

[3] Due to the relatively small populations in the territories, this thesis defines "urban" using Statistics Canada's definition of a population centre, which is a community that has a population of at least 1,000 and a population density of 400 persons or more per square kilometer. Moreover, these communities largely align with the major economic and government hubs in the territories. For example, the Government of the Northwest Territories (GNWR) lists 6 "regional centres", which include the NWT's 3 population centres outside of Yellowknife, along with Fort Simpson, Norman Wells and Behchokǫ̀. These communities have GNWT regional offices, providing

Comparatively, Nunavut is much less urbanized than the Yukon. Only 22 percent of Nunavut's population resides in the capital Iqaluit. Moreover, 86 per cent of Nunavut residents identify as Indigenous, primarily Inuit. Conversely, 50 per cent of the NWT's population resides in Yellowknife, and 51 percent of the NWT's population identifies as Indigenous, including Metis, First Nations, and Inuit populations (Yurris, Béland, and Tombe 2024). As a result, The NWT's Legislative Assembly consists of 19 Members (MLAs) elected using a single-member plurality system. 12 electoral districts are classified as urban (7 in Yellowknife, 2 in Hay River and Inuvik, and one in Fort Smith). By comparison, Nunavut's Legislative Assembly has 22 seats, 9 urban and 11 rural. Unlike the NWT, Nunavut has two electoral districts that are mixed urban-rural: Rankin Inlet North-Chesterfield Inlet and Arviat North-Whale Cove.

The role of demographics and Indigenous influences has also been considered by scholars as an explanation for the lack of political parties in the NWT and Nunavut, and the presence of parties in the Yukon. For example, White (2001, 23) suggested that due to its primarily non-Indigenous population, and "longer and closer association with southern Canada, [the Yukon] has a government all but indistinguishable, save in scale, from those of the provinces." It has been suggested that the high degree of influence possessed by regular MLAs is partially attributable to Indigenous values and the aversion to a concentration of power (Cameron and White 1995, 56; Kulchyski 2005; White 2006, 18; Henderson 2007, 40; Poelzer and Coates 2015). Indigenous representation in the NWT and Nunavut's territorial legislatures demonstrates these Indigenous influences on the territories' political cultures. Since 1980, all but two of the government leaders in the NWT have been of Indigenous descent, and since 1975, most elected

residents with a greater access to government services. Unlike the population centres, with Fort Simpson, Norman Wells and Behchokǫ̀ are part of multi-community electoral districts, and are treated as rural in the data. https://www.gov.nt.ca/careers/en/regional-centres

members in the NWT have been Indigenous (Kulchyski 2005, 11; Mercer 2015, 2). In sum, due to differing histories of political development, and contrasting demographic compositions, the NWT and Nunavut have adopted a unique non-partisan adaptation of Westminster parliamentary democracy. Conversely, the Yukon has maintained a partisan electoral system since 1979. The subsequent sections examine whether these different political systems result in different outcomes for incumbent candidates seeking re-election.

3.0. Literature Review and Hypotheses

Now that the thesis' three case studies have been introduced, this section overviews what we currently know about incumbency advantage. As mentioned above, much of the previous literature on incumbency focuses on partisan systems. Thus, this literature sets the expectations on incumbency, for us to better understand whether incumbency behaves similarly without political parties. This literature review has five sections. First, I define incumbency advantage. Second, the various factors that previous literature has attributed to this incumbency advantage are outlined. Third, the "personal vote" is defined. Subsequently, "constituency service", which is closely tied to incumbency advantage (especially in weak party systems), is defined. Lastly, is a review campaign finance literature and how campaign finance interacts with incumbency advantage. The hypotheses are introduced throughout the literature review, at the end of each corresponding section.

3.1. Incumbency

In electoral politics, incumbents are candidates who currently hold the elected office in which they wish to serve a subsequent term, thus seeking re-election. Conversely, challengers are candidates who do not currently hold the elected office they are seeking but instead are challenging the incumbent. The role of incumbency in shaping electoral outcomes has been

described as an "incumbency effect." In previous literature, the incumbency effect has generally been found to be a positive for the incumbent, providing an electoral advantage (Abramowitz 1975; Krehbiel and Wright 1983; Trounstine 2011; Sevi 2022). Thus, this thesis mainly talks about *incumbency advantage*, and whether this expectation of incumbency advantage still holds in a system without political parties. Incumbency advantage has various sources, including personal experience gained by the incumbent, the benefits of support staff that come with serving in office, and increased media coverage. These factors contribute to greater name recognition and a leg-up over challengers. The following section overviews the various sources for incumbency advantage.

3.2. *Sources of Incumbency Advantage*

Incumbency advantage has various sources. Incumbency advantage is partially attributable to the resource advantages incumbents experience over challengers. Elected officials receive support services perform to their duties, including staff, office space, and advertising and travel allowances (Young 2003, 9). With these resources, incumbents can promote their office and enhance name recognition.

Another source of incumbency advantage is increased media coverage and exposure. The increased media coverage incumbents receive amplifies incumbents' "head start" over challengers by bolstering their name recognition. Incumbents use media coverage as free promotion and to influence public opinion (Mott 1992, 27; Ansolabehere 2011). The enhanced media coverage experienced by incumbents is related to the "permanent campaign", which is when elected official engages in various "activities for electoral ends that includes employing the techniques and strategies of campaigning throughout" their term (Doherty 2007, 751). The

ability for incumbents to engage in the permanent campaign, provides incumbents with the ability to get a "head start" over challengers before an election has officially been announced.

Incumbents are also advantaged by a "scare-off" effect. Incumbents can "scare off," or deter, quality challengers as well as limit the quantity of challengers. Due to the scare-off effect, it "is, therefore, possible that incumbents do well in their re-election attempts not because they are particularly high quality or enjoy large officeholder benefits, but simply because their opponents are low quality" (Cox and Katz 1996, 493). It is important not to overstate the importance of the scare-off effect. For example, Hall and Snyder (2015) found a very small scare-off effect in races in which a party lost the previous election by a close margin in US congressional elections. Hall and Snyder (2015, 495) calculated "that scare-off can account for only 5–7 percent of the incumbency advantage across the House, statewide offices, and state senate." Thus, while the scare-off effect does contribute to incumbency advantage, its effect is relatively minor.

In sum, there have been several factors that contribute to incumbency advantage. These sources may not be directly related to the political party system. For example, like in a partisan system, incumbents in the NWT and Nunavut receive staff resources to fulfill their duties, along with increased media coverage. Thus, these scare-off effects can conceivably be considered independent of the party system. Consequently, in some respects I expect incumbency advantage to operate similarly in a partisan and non-partisan electoral system. Due to the limitations of the data, which cannot currently measure challenger *quality,* this thesis focuses on challenger *quantity* and the scare-off effect. Based on this previous literature, I predict the following first hypothesis:

- H1: There is a negative relationship between the margin of victory in an election (election t) and the quantity challengers the incumbent faces in the subsequent election (election t+1)

For this hypothesis, the null hypothesis is that there is no relationship between the margin of victory and number of challengers faced in a subsequent election. While I have posited that the scare-off effect may operate similarly in a partisan and non-partisan system, some factors may contribute to incumbency operating differently without political parties. These factors include an increased emphasis on the personal vote in non-partisan systems, which is tied to the role of constituency service. Lastly, variations in the importance of campaign finance may contribute to variations between the NWT and Nunavut.

3.3. Personal Vote

Incumbency advantage is tied to the personal vote: the "portion of a candidate's electoral support which originates in his or her personal qualities, qualifications, activities, and record" as opposed to party affiliation, fixed voter characteristics, such as socio-economic background, and economic factors (Cain, Ferejohn, and Fiorina 1984, 111). The personal vote can differ between legislators within the same political system. As noted by Martin (2011), the emphasis placed on cultivating the personal vote differs between individual legislators. Some legislators "assign considerable time and resources to local affairs and parochial interests, thereby cultivating a personal reputation among constituents. Other legislators apparently focus more attention on national politics, as policy maker, scrutiniser of the executive or international statesperson" (Martin 2011, 472). Along with differing between legislators, the role of the personal vote is also influenced by the political system itself, which can shape legislators' incentives. For this thesis, a critical factor shaping personal vote is party system strength.

The personal vote's role varies significantly based on party system strength. Conventionally, in candidate-centred electoral systems, incumbents are more incentivized to cultivate a personal vote, compared to in a party-centred system (Martin 2011, 472). With limited party discipline, or no parties at all for that matter, legislators can act as "free agents," operating independently of their political party. Therefore. they are more likely to survive a shift in voting trends by the electorate (Cain, Ferejohn, and Fiorina 1984; Moncrief 1994, 44). Incumbents can cultivate the personal vote in several ways, including through media coverage. However, one key aspect of the personal vote is the role of constituency service incumbents undertake on behalf of constituents, which is discussed in the following section.

Due to the NWT and Nunavut not having political parties, vote choice is largely decided based on personal vote. This raises the question of whether incumbency advantage is stronger in the NWT and Nunavut than in a partisan political system, such as the Yukon. Based on the personal vote literature discussed above, I propose the following hypothesis:

- H2: Incumbency advantage will be stronger in the NWT and Nunavut than in the Yukon.

For this hypothesis, the null hypothesis is that incumbency advantage is the same in the NWT and Nunavut as it is in the Yukon. Incumbents often cultivate the personal vote by performing constituency service on behalf of voters in their district. However, as discussed in the subsequent section, the importance of constituency service is not distributed equally, and variation exists between urban and rural districts.

3.4. Constituency Service and urban-rural dynamics

Incumbents can cultivate the personal vote through the "non-partisan constituency service" politicians undertake for those in their district (Fiorina 1977, 179; Alford and Hibbing

1981; Gelman and King 1991). Constituency service is the non-partisan effort by elected officials to assist those in their district in navigating government services (Fiorina 1977; Alford and Hibbing, 1981, 1042; Cain, Ferejohn, and Fiorina 1984, 113; Cain, Ferejohn, and Fiorina 1987, 39; Norton and Wood 1990; Norris 1997). Constituency service is used as a way for representatives to maintain their personal vote (Norris 1997). Incumbents are also driven by constituents' demands and the need for assistance navigating government services, such as healthcare, welfare payments, and education (Norris 1997, 34). These demands can differ based on a district's social characteristics (Norris 1997, 35). One way of looking at constituency service is through urban-rural dynamics, and the differing demands placed on rural compared to urban incumbents.

The emphasis placed on constituency service varies based on whether the representative represents an urban or rural district. In general, studies have found that representatives in more rural districts tend to place more emphasis on constituency service (Arter 2018; Dockendorff and Lodato 2023). The emphasis on constituency service in more rural districts is caused by several factors. First, constituents in more rural areas distant from the political and economic centre are more likely to be concerned with "constituency matters and grievances" whereas those in the centre will be more focused on national policy concerns (Dockendorff and Lodato 2023, 3). As such, constituents in more rural districts tend to "place higher value on the level of attention and service their legislators provide" (Dockendorff and Lodato 2023, 3). Moreover, constituents from remote districts tend to face more barriers when seeking access to bureaucrats and thus will rely on constituency services than residents in urban districts (Dockenforff and Lodato 2023, 3). In sum, these factors contribute to constituency service being seen as more crucial to incumbents in rural districts.

The role of constituency service and urban-rural differences has been discussed in the Canadian context. Clarke et al. (1975) formulated a "local-cosmopolitan" index, accounting for the rurality of the district, the education of the representative, and the time the representative has lived in the community. Clarke et al. (1975) found a strong positive relationship between the local nature of the district and the importance placed on constituency service (measured by the time a legislator spent on constituency problems). Similarly, Marland (1998, 34) found that most MPs from the 34th and 35th Parliaments surveyed believed constituency service had the greatest effect on their re-election changes, with the sentiment particularly common among rural MPs.

More recent studies have examined the relationship between rurality and constituency service. Dockendorff and Lodato (2023) found a positive relationship between remoteness and the proportion of time spent on constituency service among representatives in the Chilean Chamber of Deputies. This emphasis on constituency service in rural areas has also been linked to incumbency advantage. More specifically, it raises the question whether there are differences in incumbency advantage between urban and rural districts. Koter (2013) examined the relationship between urbanization and incumbency advantage in Senegal. Koter (2013) found that at a macro-level, the incumbent party consistently underperformed in urban areas compared to rural ones. A similar effect was found at a micro-level, using Afrobarometer survey data conducted in Senegal in 2003. Koter (2013) found that even when controlling for a respondent's various social characteristics, place of residence remained a significant predictor of support for the incumbent party. Similarly, Wang (2011) found that incumbent candidates in rural areas in Japan experienced a greater advantage than their urban counterparts. Wang attributed this difference to the greater emphasis on constituency service and more organized and tight-knit

social networks, in rural areas. Based on the emphasis on constituency service in rural ridings, I propose the following hypothesis:

- H3: Incumbency advantage is stronger in rural districts compared to urban districts.

The null hypothesis in this case is that there is no difference in incumbency advantage between urban and rural districts. Along with the role of constituency service, there has also been research on the role of campaign finance and its relationship with incumbency advantage, which is discussed in the subsequent section.

3.5. Campaign Finance

There has been a breadth of campaign finance research among political scientists, focusing on American elections. Alexander Fouirnaies and Andrew B. Hall (2014) used a regression discontinuity design to estimate the causal effect of incumbency advantage on campaign contributions. Fouirnaies and Hall (2014, 716) found that "on average, incumbency causes approximately a 20 to 25 percentage-point jump in the Democratic Party's share of contributions both at the federal and state level. Adams and Schreiber (2011) studied campaign finance and gender and its association with electoral success municipally, focusing on seven American cities. Adams and Schreiber (2011) found consistent levels of electoral success amongst women across cities in city council elections – notwithstanding different institutional, electoral, and party systems. Moreover, Adams and Schrieber (2011) found that when women decide to run, women tended to have a similar chance of winning compared to men. In five of the seven cities, women candidates on average raised more money than men, but the differences were small. Adams and Schrieber (2011) found that there does not appear to be a disadvantage for women in terms of fundraising.

The role of campaign finance is related to territorial politics, because of the differing importance placed on campaign finance in the three territories. In the NWT and Nunavut, campaigns are relatively economical. In fact, "in the small communities credible campaigns are possible with only a few thousand dollars." (White 2016, 190, 195). Nevertheless, White (2016) noted that elections overall tend to be costlier in the NWT than in Nunavut; in Yellowknife (and other NWT population centres), campaign finance is more important and "few winners ran shoestring campaigns." (White 2016, 198). [4] The fact that election campaigns on average cost more in the Northwest Territories compared to Nunavut raises the question on incumbency advantage in the two territories differ as a result.

The absence of political parties complicates campaign financing. Having no parties creates an uphill battle for challengers, who are unable to rely on a party organization to facilitate fundraising (White 2016, 197). The challenge of fundraising for non-incumbents is exacerbated by the lack of instant brand recognition afforded to individuals running under a party label. Moreover, financial incumbency advantage is amplified by corporate campaign donations in territorial elections. For example, during the 2015 NWT territorial election, the entire campaign purse of $2,600 of the incumbent for Mackenzie Delta, Frederick Blake, came from three local businesses. In contrast, his challengers received no support from the business community (CBC News 2016). Because campaign finance is of greater importance in the NWT than in Nunavut, which creates more of an uphill battle for challengers in the NWT, I propose the following hypothesis:

- H4: Incumbency advantage in Nunavut is weaker than in the Northwest Territories.

[4] However, White (2016, 195) noted that in Iqaluit, campaign finance has also been linked with electoral success.

In conclusion, I expect there to be differing levels of incumbency advantage between the partisan Yukon electoral system and the NWT and Nunavut's consensus system. However, I also expect differences in incumbency between the NWT and Nunavut. Consequently, I propose the following hierarchy regarding the strength of incumbency advantage in the territories, with the further right being a weaker incumbency effect:

Factor	**Northwest Territories**	**Nunavut**	**Yukon**
Non-partisanship	X	X	
Larger rural population	X	X	
Campaign finance	X		X

Table 1. Predicted hierarchy of incumbency advantage in the territories

In this section, I proposed four hypotheses on incumbency advantage in the territories:

H1	There is a negative relationship between the margin of victory in an election (election t) and the number of challengers the incumbent faces in the subsequent election (election t+1)
H2	Incumbency advantage will be stronger in the NWT and Nunavut than in the Yukon.
H3	Incumbency advantage is stronger in rural districts compared to urban districts.
H4	The incumbency advantage in Nunavut is weaker than in the Northwest Territories.

Table 2. Hypotheses

In sum, I expect that some of the assumptions regarding incumbency in a party system will remain consistent in a non-partisan system. For example, I expect that there will be evidence of a scare-off effect (H1). Likewise, I expect that incumbency is stronger in rural, as opposed to

urban, districts (H3). However, I also expect some variation between the incumbency effect in consensus government compared to a partisan system. Specifically, I expect incumbency advantage to be stronger in consensus government than in a party system (H2). Lastly, I expect that there will be some variation in incumbency advantage within the NWT and Nunavut, with Nunavut having a weaker incumbency effect. (H4). The following section outlines the data that this thesis uses, along with the research design.

4.0. Data and Methods

This section has two goals. First, it provides a brief overview of the data used for the thesis. Lastly, the section outlines the regression discontinuity and logistic models used to test the hypotheses.

4.1. Data

A new elections dataset for the NWT, Nunavut, and Yukon from 1974 to 2022 is used to test the hypotheses. This thesis uses data obtained through various publicly available sources. The dataset (see table 3) includes all electoral results in the Yukon from 1975 to 2021, the Northwest Territories from 1975 to 2019, and Nunavut from 1999 to 2021.[5] 1975 is the starting point for the data because it is the first election where the Northwest Territories Legislative Assembly (then known as the Legislative Council) was fully elected. Previously, the NWT Legislative Assembly consisted of both elected and appointed members.

The current dataset contains 1976 observations, each representing a candidate-year pair. The observations are across 625 electoral races. Of these races, 390 feature incumbents seeking re-election. The observations include repetition, with incumbents running for re-election appearing

[5] The dataset is missing the results for the 2021 Monfwi by-election and 2022 Tu Nedhé-Wiilideh by-election since the official results have yet to be published by Elections NWT.

multiple times in the data. Repetition is also present with unsuccessful candidates who have run multiple times. The data contains 1279 unique candidates. There are 4 elections in the dataset (15 observations), that have been removed from the data because they resulted in a tie. [6] [7]

Type	Variable	Source	Notes
Predictor Variables	Incumbency	Individually coded and confirmed via coding in R	
	Urban/Rural District	Individually coded	Defined using Statistics Canada's definition of a "population centre".
Outcome Variable	Electoral Outcome (Win-Loss)	Official voting results	NWT results were cross-referenced with Open NWT election results dataset.
Assignment Variable	Margin of Victory (t-1)		
Control Variables	Sex	Individually coded	Cross-referenced NWT Legislative Assembly MLA biographies.
	Number of Challengers	Official voting results	

Table 3. Data sources

The regression models control for the candidates' sexual identity. I coded the sexual identity of the candidates primarily based on the candidates' names. Analysis of the names was supplemented by internet sources, including news articles and obituaries.[8] The sex of MLAs was coded using the MLA biographies provided by the Northwest Territories Legislative Assembly Library. Likewise, for the Yukon the sex of MLAs was coded using Yukon MLA biographies,

[6] The Yukon election results were provided by Elections Yukon, in the form of word documents. The tables were loaded into R and extracted using two packages. The function read_docx in the *textreadr* package was used to load the data into R. Subsequently, the function docx_extract_all_tbls in the *docxtractr* package was used to extract the tables from the word documents, which were then arranged into candidate-level observations.

[7] The Nunavut election results were provided by Elections Nunavut as an excel file for the general elections from 2013 to 2021. Earlier election results were gathered from the Elections Nunavut website, which were available as PDF files. The tables from the PDF files were converted into excel files and then loaded into R.

[8] One thing to note is that the sex variable was coded by an observer, and thus is not based on self-identification by the candidates themselves.

which is a joint project of the Yukon Archives and Yukon Legislative Assembly. [9] Nine of the observations are missing the sex variable. The models also control for whether the riding is urban or rural. For simplicity, this thesis defines urban as being considered a "population centre" by Statistics Canada in the 2021 census.

While the paper aims to make a unique contribution by providing a quantitative analysis of Northern Canadian politics, there are several limitations to the dataset. The two main limitations of the data are the small sample size, and the limited number of control variables, including the lack of campaign finance data. First, the small sample size is a major limitation of this project. For the regression discontinuity design, the main limitation of the data is the lack of observations, with very few close races around the cutoff. The small sample size also limits the possibility of measuring heterogeneous effects, such as the effects of incumbency on rural versus urban ridings, and how incumbency interacts with sex.

The second major limitation is the limited number of control variables. While I coded the sex identification variable, there is still potential for omitted variable bias due to the lack of comprehensive coding on candidate characteristics such as occupation, age, visible minority status and Indigenous identity. Due to the large Indigenous population in the territories, and the Indigenous influences on territorial politics, the lack of an Indigenous identity control variable represents a key limitation. Due to difficulties in coder-identification of Indigenous identification, I have decided to not include this variable in the data.

For future research, one potential method would be to replicate the approach used by Johnson et. al (2021), through genealogical methods and triangulation to code characteristics.

[9] The Yukon MLA biographies can be found here: http://www.yukonlegislaturespeaks.ca/

Johnson et. al (2021) used publicly available biographical materials, such as news articles and webpages, to code demographic variables for Canadian federal election candidates. One benefit of the approach used by Johnson and colleagues (2021) is that it does not use surveys; while surveys are beneficial as they allow for self-identification by the candidate, they also require research ethics board approval, and surveys often suffer from low response rates, especially in marginalized populations.

Lastly, campaign finance was not considered in this thesis. Campaign finance is only available from 2007 onwards for the Northwest Territories. Moreover, due to Nunavut's electoral financing reporting being publicly available as handwritten submissions, this data was not collected for the thesis due to time constraints. However, for future research, the inclusion of the Nunavut campaign finance data could be an intriguing area of exploration. Furthermore, due to the Yukon's electoral fundraising being conducted at a party level, at a territory-wide level, it is difficult to parse out how the money is spent on each individual candidate. Thus, campaign finance in Yukon territorial elections is another potential area of future research, including differences in fundraising between parties, and the main sources of campaign donations. Lastly, another area of interest in the future is to use riding census data to explore further how an electoral district's time-variant characteristics, such as unemployment rates, economic development and wellbeing indicators, impact electoral results in the territory.

This section provided an overview of the new territorial elections dataset this thesis uses to compare incumbency advantage between the three territories. Due to the limited previous studies utilizing quantitative methods to study Northern Canadian politics, the thesis aims to provide a novel approach to studying politics in the region. The research design is be outlined in the following subsection.

4.3. Methods

The thesis uses two empirical methods. First, a regression discontinuity design is used to measure incumbency advantage in the territories. Second, a logistic regression model is used to measure various factors associated with electoral success in the territories, including urban versus rural differences. This subsection concludes by outlining robustness tests, and alternative model specifications. Before using these methods, the thesis provides a brief overview of some descriptive statistics on the data.

4.3.1. Regression Discontinuity Design

The primary method used to measure incumbency advantage in the thesis is the regression discontinuity (RD) design. Regression discontinuity designs have been frequently used in political science to measure incumbency advantage (Lee 2008, Hainmueller, Hall, and Snyder 2015). Regression discontinuity designs are a non-experimental strategy for the analysis of causal effects. The key commonality within all RD designs is the presence of a score (also known as a running variable or index) "and a treatment is assigned to those units whose value of the score exceeds a known cutoff or threshold, and not assigned to those units whose value of the score is below the cut-off" (Pernia 2023, 315; Cattaneo and Titiunik 2022). As such, all regression discontinuity designs must have three fundamental components, "a score, a cutoff, and a treatment" (Cattaneo et al 2019, 1). In the case of the incumbency advantage, the score is the margin of victory, the cutoff is a zero (a positive margin of victory meaning that the candidate won the election), and the treatment is incumbency.

Regression discontinuity designs come in two forms: sharp and fuzzy designs. Sharp RD designs are used in settings with perfect compliance with the treatment. In a sharp RD design, each unit that is assigned to the treatment receives the treatment. It can also mean that in cases

with imperfect compliance with the treatment, the researcher is only interested in the intention-to-treat effect of offering treatment (Cattaneo and Titiunik 2022, 824). Fuzzy RD designs are used when the treatment is assigned, and there is imperfect compliance with the treatment. In the case of fuzzy RD designs, “some units assigned to treatment fail to receive the treatment and/or some units assigned to the control condition receive the treatment anyway” (Cattaneo and Titiunik 2022, 827).

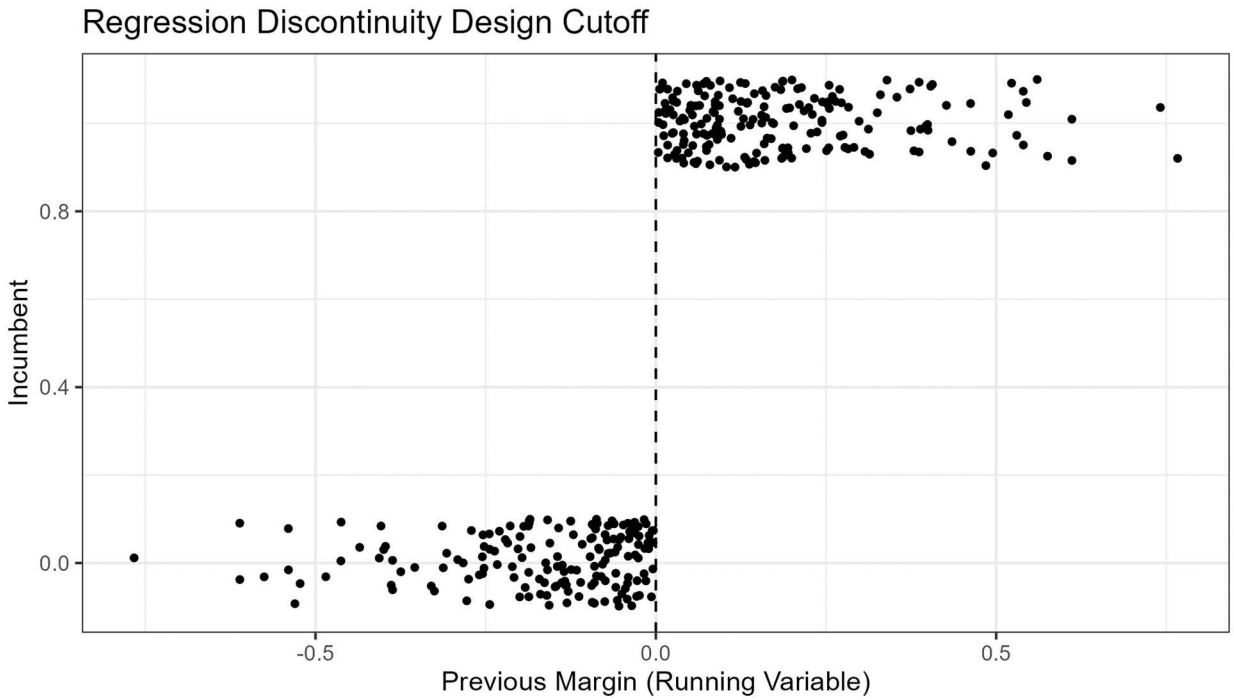


Figure 1. Sharp regression discontinuity design

A sharp RD design is used to measure incumbency advantage in the territories. While with some RD designs there is the possibility for non-compliance (when the observation falls beyond the threshold of receiving treatment but does not receive the treatment), this is not the case with the incumbency treatment, as all winning candidates (candidates above the cutoff) received the "treatment" of becoming MLAs. The assignment is the margin of victory in the district in the previous election (t-1). The margin of victory is calculated by subtracting the winning candidate's percentage of vote share by the vote share received by the second-placed candidate. The outcome variable is a binary of whether the candidate won (1) or lost (0) election t. Figure 1 shows the margin of victory as the x-axis, and whether the candidate won the election as the y-axis, demonstrating the sharp RD design.

Regression discontinuity designs focus on observations with running variables that are close to the cutoff. The area around the cutoff for which the running variable is restricted to in

the RD design is known as the bandwidth, or window (Green, et. al 2009; Bueno and Tuñón 2015). There is considerable discretion when it comes to the selection of the window surrounding the cutoff. On one hand, the narrower the window, the more precise the estimates will be, as there is less of a risk of omitted variables biasing the estimated treatment effect. A narrower window comes with a drawback, as there will be fewer observations available (Green et al 2009). A common method of choosing a bandwidth for a regression discontinuity design is through data driven methods from Imbens and Kalyanaraman (2012), along with Calonico, Cattaneo, and Titiunik (2014). The thesis utilizes these data-driven methods of bandwidth selection. In addition, to test the robustness of the estimates, the model is run at various bandwidths to show that the coefficients do not differ significantly beyond the standard error. Bandwidths spanning from a 1 percent margin of victory to a 20 percent margin of victory and a baseline model that includes all electoral races are used.

When using the RD design to measure incumbency, the score, or running variable, is the margin of victory in the previous election. By focusing on close elections around the cutoff, the RD design aims to exclude the unobserved differences between incumbents and challengers. Excluding these unobserved differences allows for the measurement of incumbency advantage through the mitigation of omitted variable bias (Szakonyi 2018, 326). Of course, elected representatives are not randomly selected from the population. However, regression discontinuity designs focusing on close races can act as a quasi-random assignment (Eggers and Hainmueller 2009; de la Cuesta and Imai 2016; Cattaneo and Titiunik 2022). The assumption of quasi-random assignment relies on the assumption that extremely close elections have a "random chance element to precise vote share" (Lee 2008, 685). This means that the election result can be

influenced by random factors such as the weather on election day impacting voter turnout (Lee 2008, 685).

The assumption of quasi-random assignment requires that there is no manipulation of the running variable. As such, we must ensure that there is a continuous density of the outcome variable along the cutoff point. In the context of elections, we must ensure that close elections decided by electoral fraud are either "negligible or non-existent" (Lee 2008, 685). A McCrary (2008) density test can be used to "formally assess the validity of the assumption of continuity around the threshold" (Szakonyi 2018, 329). The McCrary (2008) density test for the dataset, shows that there is no discontinuity at the cutoff; based on the density test results, we can validate the assumption of no sorting along the cutoff.

Regression discontinuity designs have been used to measure incumbency advantage in the United States and Canada. Lee (2001) used an RD design to estimate incumbency advantage in US House Elections from 1946 to 1998. Several adaptations and extensions of Lee's original study on US House Elections have since been published. For example, Butler (2009) used RD to compare incumbency advantage experienced by freshman and non-freshman incumbents around the cutoff. RD designs have also been used to study Canadian elections. Kendall and Rekkas (2015) used regression discontinuity to estimate incumbency advantages in Canadian federal elections. Kendall and Rekkas (2015) found that there tends to be a larger incumbency effect in the post-1950 period, than before 1950. Interestingly, Kendall and Rekkas (2015) found a level of personal incumbency advantage in Canadian elections. They find that the incumbency advantage is only really maintained when an incumbent candidate is running. However, the party is unlikely to obtain any incumbency advantage if a new candidate is running (Kendall and Rekkas 2015). While the regression discontinuity allows for the measurement of an incumbency

effect, it does not help in measuring other factors that may interact with incumbency, such as the number of challengers, and urban versus rural differences. To better understand how these factors impact incumbency, logistic regression models are used to supplement the RD design.

4.3.2. Logistic Regression

A pair of logistic regression models are used in the thesis to supplement the RD design. The logistic regression models allow for the examination of various descriptive measures related to incumbency. The logistic regression also enables us to compare the strength of incumbency across territories. Due to the dataset's small sample size, the thesis does not rely solely on the RD design. Moreover, while the RD design is used to measure the strength of incumbency advantage in the territories, the logistic regression model allows for the measurement of heterogeneous effects, such as incumbency and in consensus government versus the Yukon, and incumbency urban versus rural districts. While we cannot make any causal claims based on these results, it is still illuminating in capturing some of the factors correlated with electoral success and incumbency advantage in the territories.

The thesis runs the regression model in two stages. First, the model is run on the subsample of election results restricted to the NWT and Nunavut, to measure differences in incumbency advantage between the two territories to test the fourth hypothesis. The first model is the following:

$$Y_i \sim Bern(\pi_i)$$
$$\pi_i = \alpha + \beta_1 Incumbent + \beta_2 Female + \beta_3 Nunavut + \beta_4 Rural + \beta 5(\beta_1 Incumbent \times \beta_3 Nunavut) + \beta 6(\beta_1 Female \times \beta_3 Nunavut) + \gamma + \epsilon$$

Where $\boldsymbol{Y_i}$ is the outcome variable of whether the candidatthe e won or lost the election. $\boldsymbol{\beta_1 Incumbent}$ is an incumbency dummy, where 1 is an incumbent, and 0 is for a non-incumbent/challenger. $\boldsymbol{\beta_2 Female}$ is a dummy variable of whether candidate is a male (0) or

female (1). $\boldsymbol{\beta_3 Nunavut}$ is a territory dummy variable, where 0 is the NWT and 1 is Nunavut. $\boldsymbol{\beta_4 Rural}$ is a dummy variable of whether the riding is a population centre (0) or outside of a population centre (1). The models include interactions between the incumbency rural dummies ($\boldsymbol{\beta_5}$) and the incumbency and female dummies ($\boldsymbol{\beta_6}$)**.** The model also includes a year fixed effect ($\boldsymbol{\lambda}$) and the error term ($\boldsymbol{\epsilon}$).

Subsequently, the model is run including all three territories, to measure how incumbency advantage differs between consensus government and Yukon's partisan electoral system, to test the second and third hypotheses. The second model is the following:

$$Y_i \sim Bern(\pi_i)$$

$$\pi_i = \alpha + \beta_1 Incumbent + \beta_2 Female + \beta_3 Consensus + \beta_4 Rural + \beta 5(\beta_1 Incumbent \times \beta_3 Consensus) + \beta 6(\beta_1 Female \times \beta_3 Consensus) + \gamma + \epsilon$$

The second model is identical to the first, with the one difference being the territory dummy variable is swapped with a dummy variable of whether the election took place under consensus government (1) or the Yukon's partisan system (0): $\boldsymbol{\beta_3 Consensus}$. Along with these two regression models, the thesis uses several other alternative models. These additional models serve as robustness checks, and to further test the hypotheses.

4.3.3. Robustness Checks and Additional Models

The thesis uses robustness checks to test the validity of the estimates, along with alternative models to test the hypotheses. First, the thesis uses summary statistics to test whether the sample of races close to the cutoff is similar to the overall sample of electoral races (Hainmueller et. al. 2015). Using this method, Hainmueller et. al (2015, 719) found "that the estimated incumbency advantage is just as large when measured in windows as wide as 15 percentage points around the

discontinuity threshold." This means that the local average treatment effect RD estimates at 50-50 races remained relatively generalizable for statewide US elections.

Second, the thesis tests for whether strategic exit biases the incumbency estimates (Kendall and Rekkas 2012). Kendall and Rekkas (2012) used the RD design to measure incumbency advantage in Canadian parliamentary elections. Kendall and Rekkas (2012) assume that there is not a systemic trend of strategic exit that skews the results. One issue with measuring candidate-level incumbency advantage "is that the estimates could be biased if incumbent individuals selectively avoid subsequent elections if they anticipate not being successful," referred to as "strategic exit" (Kendall and Rekkas 2012, 1569). 75 percent of victorious candidates in the NWT decide to run for re-election in the subsequent election, which is similar to the rates of running for re-election among Canadian MPs (Kendall and Rekkas 2012). To test for the presence of a systematic strategic exit, a "logistic regressions of incumbent's decisions to run again on the margin of victory attained in the past election" is conducted (Kendall and Rekkas 2012, 1580). The model controls for whether the riding is a population centre and the territory. Kendall and Rekkas (2012, 1580) justify this approach suggesting that the margin of victory "from the previous election serves as a proxy for an incumbent's expectations in the subsequent election." The following logistic regression model is used to test for strategic exit:

$$Y_i \sim Bern(\pi_i)$$
$$\pi_i = \alpha + \beta_1 Margin(t-1) + \beta_2 Rural + \beta_3 Nunavut + \gamma + \epsilon$$

Where $\boldsymbol{\beta_1 Margin(t-1)}$ is the margin of victory in the previous election, $\boldsymbol{\beta_2 Rural}$ is a dummy variable of z the riding is considered a population centre (0) or not (1), and $\boldsymbol{\beta_3 Nunavut}$ is a dummy variable for the territory the riding is located in, with 0 being the NWT and 1 being

Nunavut. The model also includes year fixed effects ($\boldsymbol{\gamma}$). The model is also be run on the territories-wide sample:

$$\pi_i = \alpha + \beta_1 Margin(t-1) + \beta_2 Rural + \beta_3 Consensus + \gamma + \epsilon$$

The sole difference between the two models is that the territory dummy variable is replaced with the consensus government dummy variable ($\boldsymbol{\beta_3 Consensus}$), in the Yukon, and 1 are elections in the NWT and Nunavut.

Along with strategic exit, the thesis tests for whether there is the presence of a "scare-off effect" in the territories (Hypothesis 1). To test the hypotheses regarding the scare-off effect on challenger quantity, the thesis tests whether challengers are more likely to enter the race when the incumbent had a narrow victory in the previous election. To the relationship between an incumbent's previous margin of victory and the number of challengers they face in the subsequent election a Poisson regression is conducted. The outcome variable is the number of challengers faced by an incumbent in riding t and the main predictor variable is the margin of victory in election t-1.[10] The thesis uses the following model used:

$$Y_i = \alpha + \beta_1 Margin(t-1) + \beta_2 Rural + \beta_3 Nunavut + \beta 4 Female + \gamma + \epsilon$$

Where the outcome variable is the number of challengers the incumbent faces in the election, $\beta_1 Margin(t-1)$ is the margin of victory in the previous election, $\boldsymbol{\beta_2 Rural}$ is the rural (1) and urban (0) dummy variable, $\boldsymbol{\beta_3 Nunavut}$ is the Nunavut (1) dummy variable, $\boldsymbol{\beta 4 Female}$ is the sex dummy variable, where 1 is female and 0 is male, and $\boldsymbol{\gamma}$ is the year fixed effect. The model is also run with the territory dummy variable replaced with the consensus government dummy

[10] I also included controls for gender, whether the candidate was a member of cabinet, and district and year fixed effects. I included the controls and fixed effects gradually.

variable ($\boldsymbol{\beta_3 Consensus}$).[11] Now that the methods have been outlined, the thesis continues by presenting the results in the following section.

5.0. Results

5.1. Descriptive Statistics

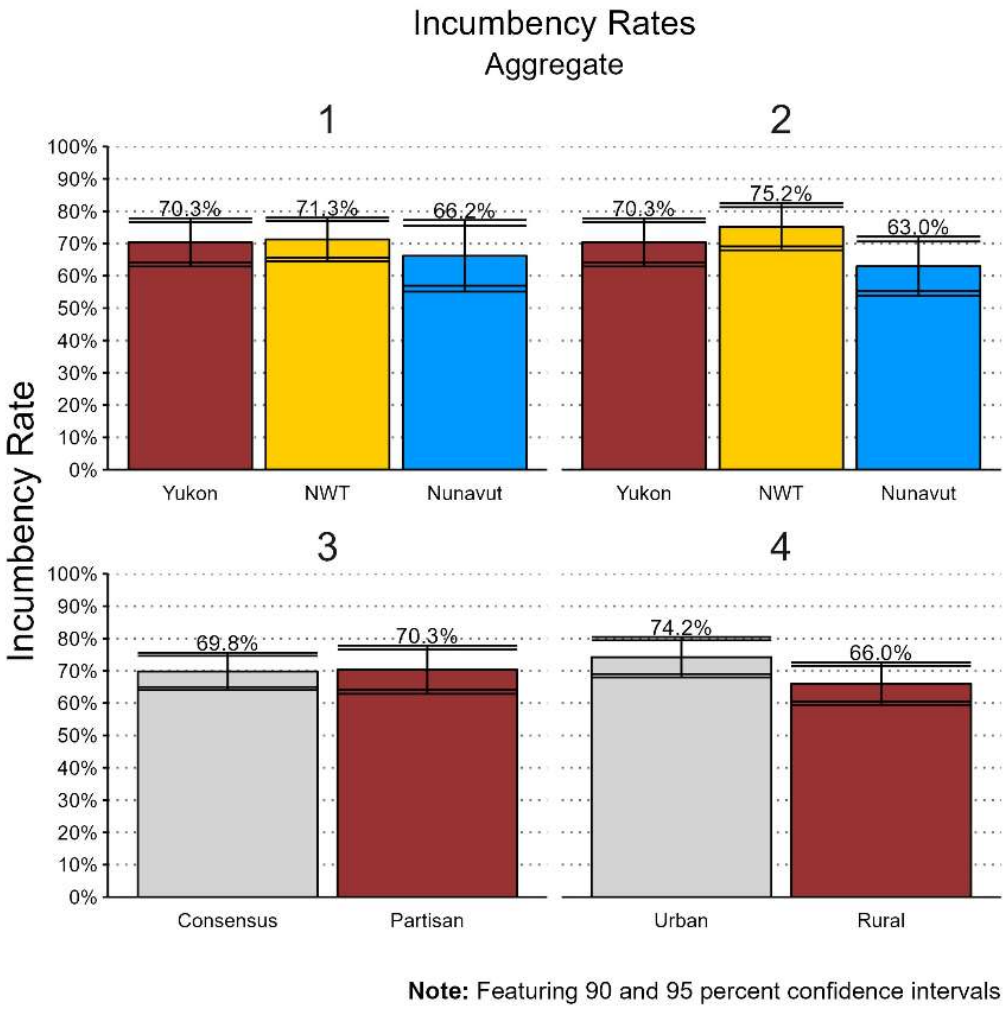


Figure 2. Incumbency rates by territory and riding type.

Overall, incumbents in the territories are successful in their re-election races 70.0 percent of the time. Figure 2 shows the overall incumbency rates and panel 1 shows overall incumbency rates by territory. In Nunavut, incumbents are successfully re-elected 66.2 percent of the time. By

[11] Due to the lack of data on challenger quality, I cannot make any definitive claims on the presence of a "scare-off" effect in the Northwest Territories and Nunavut.

comparison, incumbents are re-elected 71.2 percent of the time in the NWT. In the Yukon, Incumbents are successfully re-elected 70.3 per cent of the time. Panel 2 shows incumbency rates by territory with races from 1979 to 1994 located in now the Nunavut being calculated as part of Nunavut. Notably, the discrepancy between incumbency rates in Nunavut and the NWT precedes the division of the two territories. As shown in figure 2, panel 2 from 1979 to 1999 in the NWT, incumbents in ridings that are now part of Nunavut were successfully re-elected only 63.0 per cent of the time. By comparison, incumbency rates were 75.2 percent of the time in ridings that are remained in the NWT post-1999. However, the differences are not statistically significant at either 90 or 95 per cent confidence. These differences in incumbency rates between the NWT

and Nunavut do align with the fourth hypothesis, that incumbency rates are stronger in the NWT than in Nunavut, when considering statistical significance.

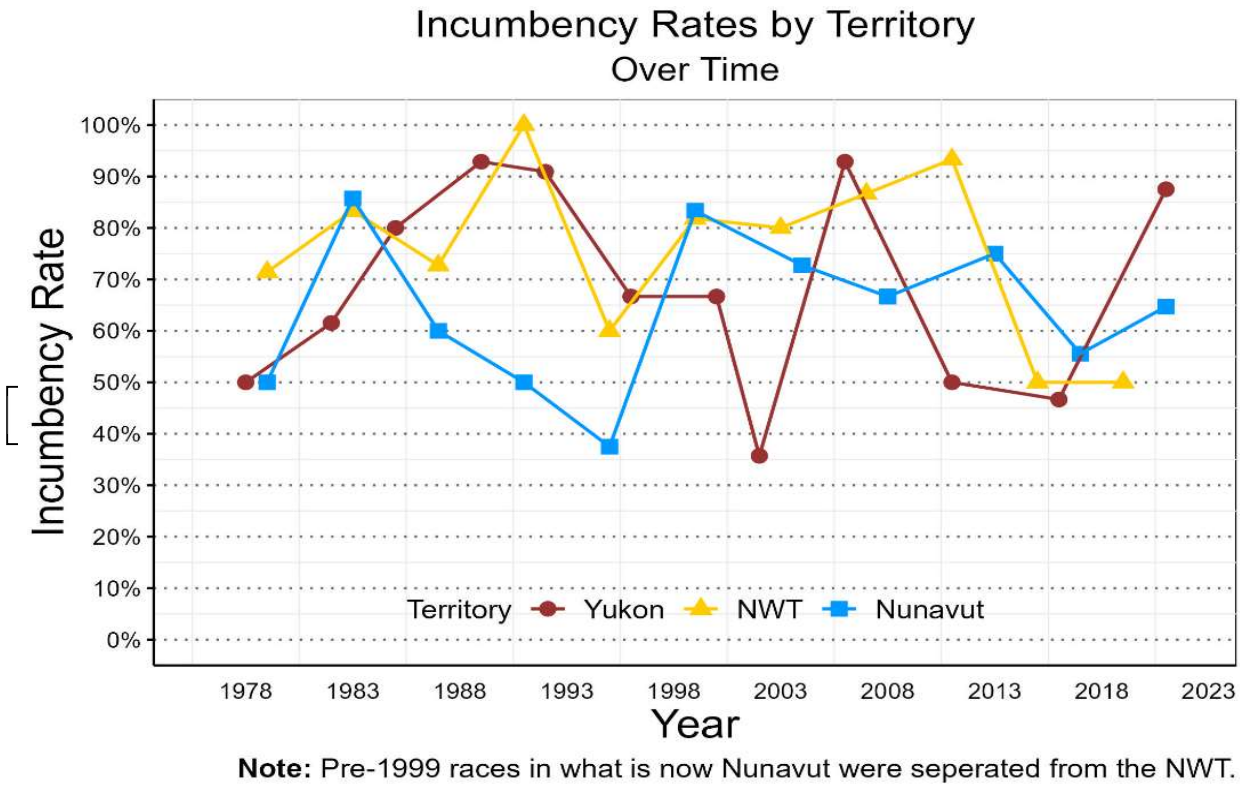


Figure 3. Incumbency rates by territory over time.

Figure 2, panel 3 shows the difference in incumbency rates between consensus government and Yukon's partisan system. In consensus government, incumbents are re-elected 69.8 percent of the time, compared to 70.3 percent in the Yukon. However, in the Yukon, when considering the incumbent party, instead of the incumbent candidate, incumbency rates drop to 64.11 per cent, raising the question of whether unpopular candidates are more likely to retire than run for re-election. The fourth panel shows incumbency rates between urban and rural ridings in

the three territories; this panel demonstrates that while urban ridings have slightly higher incumbency rates than rural ridings, this difference is not statistically significant. Lastly, it is important to note that these differences in incumbency rates are not statistically significant at either 90 or 95 percent confidence.

Figure 3 shows incumbency rates in the three territories over time. The results show that before the division of the Northwest Territories in 1999, except for 1983, incumbency rates in what became Nunavut were consistently lower than in the current boundaries of the NWT. These descriptive statistics do not align with the second hypothesis that incumbency advantage is stronger in consensus government than the Yukon. However, they show some alignment with the fourth hypothesis that incumbency advantage is stronger in the NWT than in Nunavut. Thus, the regression models are necessary to test the statistical significance of these findings.

Table 4 shows descriptive statistics on the margin of victory for elections in Yukon versus consensus government elections, as well as with the NWT and Nunavut separately. The average margin of victory in consensus government is 19.1 percentage points, and the median margin of victory is 14.1 percentage points. By contrast, the average margin of victory in Yukon elections is 15.7, and the median margin of victory is 13.2 percentage points.[12]

[12] Appendix 1 shows a cumulative number of elections by margin of victory, in 5 percentage point bins.

Territory/System	Mean	Median	Number of Races
Yukon	15.65%	13.24%	231
NWT	20.61%	15.55%	169
Nunavut	17.76%	13.63%	179
Consensus	19.15%	14.12%	348
Total	17.75%	13.74%	579

Table 4. Margin of victory descriptive statistics.

In all three territories, typically around 3 candidates run per election race. However, the distribution of the number of candidates is different between consensus government and Yukon. Over half (68.0 percent) of races in the Yukon have been contested by only 2 candidates. Conversely, in the NWT and Nunavut only 30 percent of races have been contested by 2 candidates. Moreover, there have been no acclamations in the Yukon whereas in consensus government, where there has been a total of 42 acclamations (27 in the NWT, and 15 in Nunavut), making up 10.8 percent of all races.

These descriptive statistics contradict the second hypothesis that incumbency advantage is stronger in consensus government compared to the Yukon. However, it appears that there is preliminary support for the fourth hypothesis of incumbency advantage being stronger in the NWT than in Nunavut. To further test the hypotheses, the thesis uses a regression discontinuity design, followed by logistic regression models.

Algorithm	BW	LATE
CCT	0.173	-0.003
IK	0.177	-0.003

Table 5. Regression discontinuity design results using CCT and IK bandwidths.

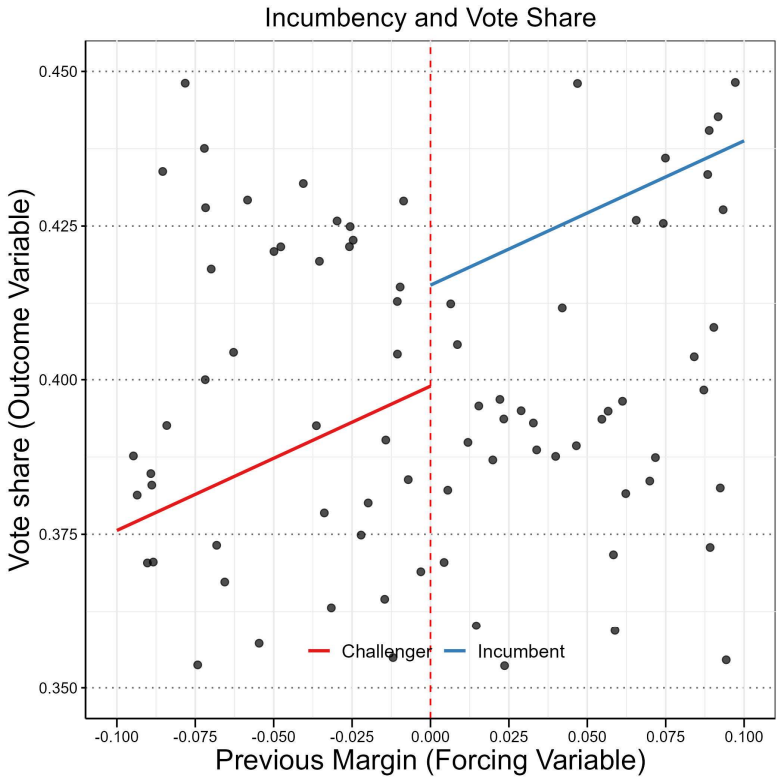


Figure 4. Incumbency and vote share RD design visualization.

5.2. Regression Discontinuity Model

The results of the regression discontinuity model were unable to find any strong evidence supporting the existence of incumbency advantage in the territories. Figure 4 shows the predicted vote share for incumbents compared to challengers around the cutoff, providing some evidence of a statistically significant incumbency advantage. However, the RD regression models do not find any statistically significant evidence of an incumbency advantage. Running the RD regression using IK optimal bandwidths finds a local average treatment effect (LATE) of -0.003, again showing no evidence of an incumbency advantage. Likewise, using CCT optimal bandwidths finds a LATE of -003, providing no evidence of an incumbency effect. The RD results can be found in table 5.

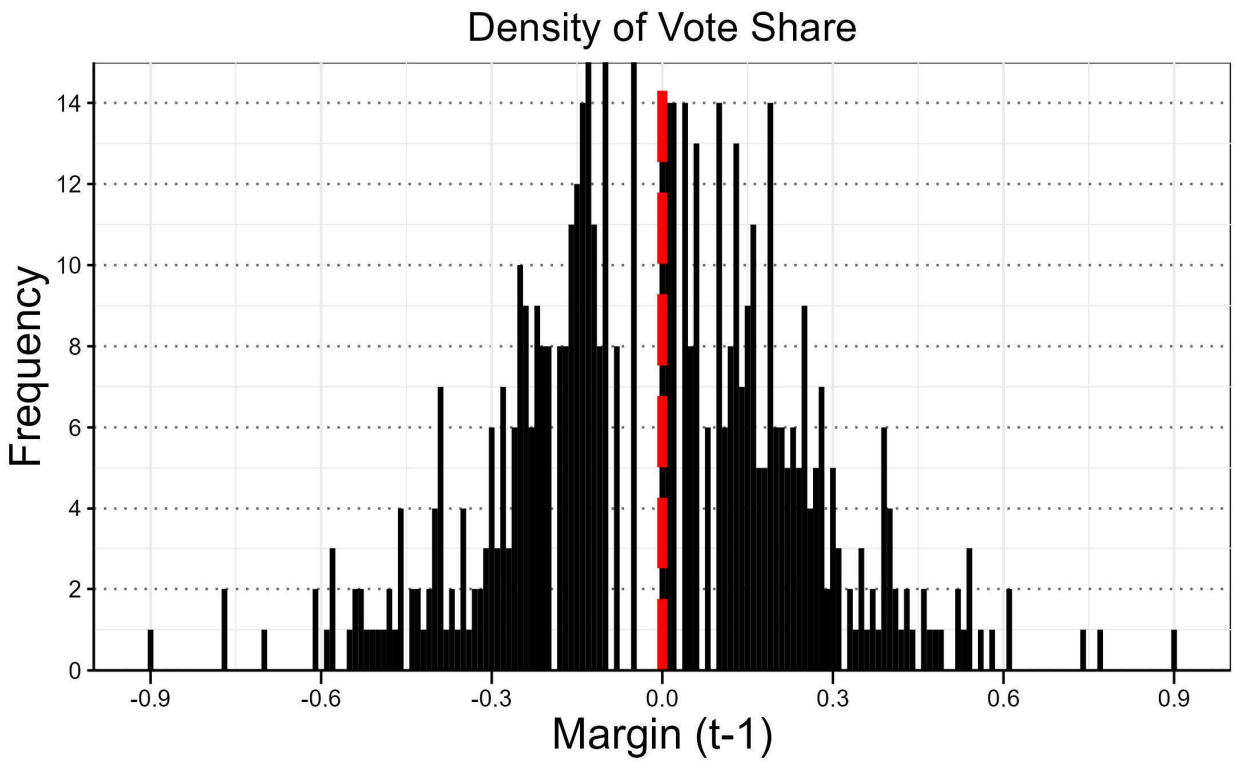


Figure 5. Consistent density at the RD cutoff

To ensure that sorting at the cutoff does not bias the results, figure 5 shows the distribution of observations both before and after the cutoff. Figure 5 indicates that there is no artificial sorting occurring around the cutoff. Moreover, using the McCrary Density test, we can show that there is no discontinuity of the running variable around the cutoff. To ensure that the estimates are robust, I ran the model on various bandwidths to determine whether the estimate remains consistent. The results, shown in figure 8, indicate that from a bandwidth of 2 and greater, the estimate remains largely consistent, with the main change being the shrinking

confidence intervals.

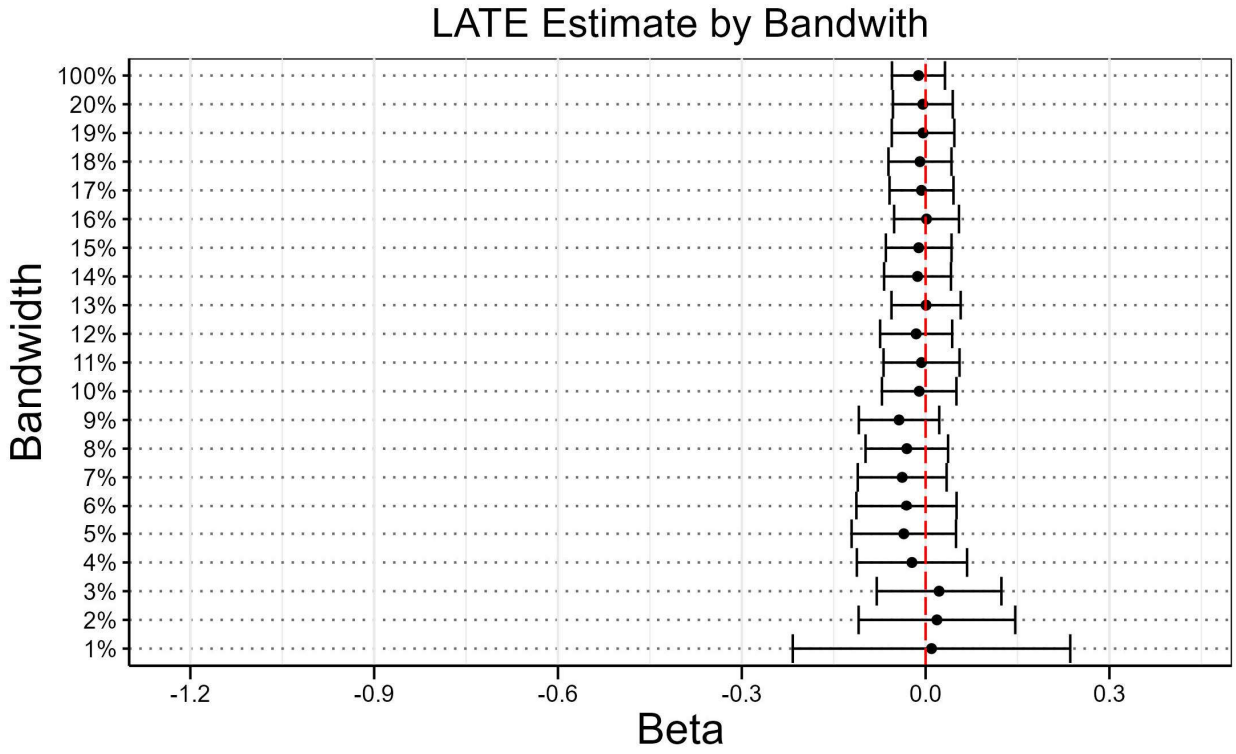


Figure 6. Local average treatment effect (LATE) at various bandwidths

Furthermore, to show the representativeness of the samples at smaller bandwidths, I calculated summary statistics at various bandwidths. These summary statistics are shown in table 6. The table demonstrates that from the 1% to 8% bandwidths less than a quarter of total races are present in the subsample. At the 20% margin of victory bandwidth, just over half of the total races are included in the subsample. In terms of geographic coverage, at the 7 percent margin bandwidth, over half of the electoral districts are included in the subsample. By the 20 percent margin bandwidth, 85 percent of electoral districts are present in the subsample. In general, rural elections are consistently representative in the smaller bandwidths when compared to the overall dataset. At all bandwidths, the number of races in the NWT, Nunavut and Yukon are

representative of the overall sample. Lastly, by the 2 percent bandwidth, over half of election years are represented in the bandwidth. By the 4 percent election bandwidth, 82.14 percent of election years are represented. These results should that observations in bandwidths closer to the cutoff are relatively representative of the entire sample. This strengthens the regression discontinuity design's external validity.

	Bandwidth												
	1%	**2%**	**3%**	**4%**	**5%**	**6%**	**7%**	**8%**	**9%**	**10%**	**15%**	**20%**	**100%**
% of races	12.00	27.00	43.00	57.00	68.00	79.00	89.00	104.00	116.00	136.00	182.00	225.00	327.00
Average margin of victory (t-1)	0.60	1.12	1.67	2.11	2.48	2.92	3.32	3.91	4.40	5.14	7.03	9.07	16.99
% of total districts with 1+ obs.	12.00	25.00	35.00	42.00	47.00	54.00	59.00	65.00	69.00	74.00	85.00	93.00	101.00
% of races in rural districts	50.00	33.33	39.53	40.35	39.71	44.30	46.07	44.23	44.83	45.59	46.15	48.89	51.38
% of races in NWT	25.00	33.33	34.88	31.58	33.82	35.44	32.58	33.65	31.90	31.62	30.77	31.56	32.72
% of races in Nunavut	25.00	22.22	18.60	21.05	22.06	24.05	24.72	25.00	27.59	26.47	24.73	24.89	26.61
% of races in Yukon	50.00	44.44	46.51	47.37	44.12	40.51	42.70	41.35	40.52	41.91	44.51	43.56	40.67
% of election years with 1+ obs.	39.29	64.29	82.14	82.14	89.29	89.29	92.86	92.86	92.86	96.43	96.43	100.00	100.00

Table 6. Representativeness of various bandwidths

In sum, we were unable to find a strong statistically significant incumbency advantage in the territories.[13] While the regression discontinuity design was unable to find any statistically significant incumbency advantage, we can use the logistic regression models to further test different factors associated with incumbency advantage in the territories.

[13] The inability of the RD design to find any significant effect is in part due to the small sample size of the study, as discussed in the limitations section. Thus, the logistic regression model must be used to supplement the RD design model, since it does not require the same number of observations.

5.3. Regression Model 1

We are unable to determine a causal effect of incumbency in the territories through the regression discontinuity design. Nevertheless, we use a logistic regression to provide a descriptive analysis of how incumbency varies between both the NWT and Nunavut, and then between consensus government and the Yukon's partisan electoral system. Table 7 shows a series of logistic regression models, with covariates gradually added, with model 5 being the main regression model.

Model	Description	Observations
Model 1	Incumbency and territory dummies, and interaction.	1239
Model 2	Model 1 + Sex	1230
Model 3	Model 2 + Interaction between sex and incumbency	1230
Model 4	Model 1 + Interaction between incumbency and rural	1230
Model 5	Model 4 + Year fixed effects	1230
Model 6	Model 5 + Interaction between sex and incumbency	1230
Model 7	Model 6 + Interaction between territory and sex dummy	1230
Model 8	Model 7 + Number of candidates	1230
Model 9	Model 8 + Interaction between the number of candidates and incumbency dummy	1230

Table 7. First regression model, various model specifications for robustness. Model 5 is the main regression model.

The results of the first logit models are shown in table 8. The consensus government subsample indicates some variation in the likelihood of an incumbent gaining re-election between Nunavut and the Northwest Territories. First, there is a strong relationship between incumbency and electoral success in consensus government. The odds ratio shows that incumbents are 16.690 times more likely to be elected than non-incumbents, which is significant at 99.9 percent confidence. Additionally, the odds ratio for the interaction between the Nunavut and incumbency dummies indicates that incumbents in Nunavut are 45 percent less likely to be re-elected than incumbents in the NWT, significant at 90 percent confidence. The weaker level of incumbency advantage in Nunavut aligns with the fourth hypothesis. Moreover, the results indicate that

incumbents in rural ridings are 54 per cent less likely to be re-elected than incumbents in urban ridings, significant at 95 percent confidence, contradicting the third hypothesis that incumbency is stronger in rural districts than in urban districts.

	Model								
Predictor	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Intercept	0.260*** (0.000)	0.280*** (0.000)	0.290*** (0.000)	0.280*** (0.000)	14.880 (0.800)	13.650 (0.806)	14.390 (0.802)	18.590 (0.784)	12.190 (0.816)
Incumbent	11.600*** (0.000)	11.210*** (0.000)	10.620*** (0.000)	16.560*** (0.000)	16.690*** (0.000)	16.200*** (0.000)	16.170*** (0.000)	9.990*** (0.000)	29.750*** (0.000)
Nunavut	1.150 (0.362)	1.140 (0.385)	1.140 (0.400)	1.120 (0.471)	1.130 (0.443)	1.130 (0.448)	1.120 (0.516)	1.100 (0.591)	1.090 (0.616)
Incumbent * Nunavut	0.490* (0.025)	0.490* (0.025)	0.490* (0.027)	0.550† (0.070)	0.550† (0.069)	0.550† (0.069)	0.550† (0.071)	0.700 (0.298)	0.850 (0.663)
Woman	NA	0.700† (0.051)	0.650* (0.039)	0.670* (0.033)	0.670* (0.036)	0.660* (0.046)	0.640 (0.111)	0.630 (0.113)	0.620 (0.103)
Incumbent * Woman	NA	NA	1.440 (0.443)	NA	NA	1.140 (0.790)	1.140 (0.786)	1.170 (0.755)	1.180 (0.761)
Rural	NA	NA	NA	1.060 (0.721)	1.050 (0.772)	1.050 (0.776)	1.050 (0.773)	1.120 (0.511)	1.110 (0.535)
Incumbent * Rural	NA	NA	NA	0.460* (0.023)	0.460* (0.023)	0.470* (0.029)	0.470* (0.029)	0.530† (0.072)	0.590 (0.159)
Nunavut * Woman	NA	NA	NA	NA	NA	NA	1.060 (0.868)	1.130 (0.751)	1.160 (0.704)
Candidates	NA	NA	NA	NA	NA	NA	NA	0.730*** (0.000)	0.790*** (0.000)
Incumbent * Candidates	NA	NA	NA	NA	NA	NA	NA	NA	0.680** (0.002)
Year	No	No	No	No	Yes	Yes	Yes	Yes	Yes
Observations	1239	1230	1230	1230	1230	1230	1230	1230	1230

† $p < 0.1$, * $p < 0.05$, ** $p < 0.005$, *** $p < 0.001$

Note: P-values in parentheses.

Table 8. First regression model results. Model 5 is the main regression model. Results presented as odds ratios.

The results remain relatively consistent across model specifications. The one exception is in models 8 and 9. Controlling for the number of candidates causes the interaction between

incumbency and the territory dummy to lose significance. However, the interaction between incumbency and urban ridings remains consistent in all the models except for the model 9. Two other noteworthy results are that incumbents are 32% less likely to be re-elected with each additional challenger they face (99 percent confidence), and that women are approximately 30 percent less likely to be successfully elected than men (95 percent confidence). Lastly, the odds ratio for the interaction between incumbency and the rural dummy finds that incumbents in rural ridings are 54% less likely than incumbents in rural ridings to gain re-election.

In sum, based on these findings, we can not accept the third hypothesis. In fact, the opposite relationship is present, with the incumbency effect being stronger in urban ridings than in rural ridings. Second, we can accept the fourth hypothesis, as the results suggest that the incumbency advantage in Nunavut is weaker than in the Northwest Territories. Now that we have been able to test differences in incumbency advantage between the NWT and Nunavut, we can run the second model to test the first hypothesis on incumbency advantage being stronger in consensus government than the Yukon's party system.

5.4. Regression Model 2

Now that we have examined the differences between incumbency advantage in Nunavut and the NWT, we can look at whether there is a difference in the incumbency advantage in consensus government compared to in the Yukon. The results of the second series of logistic regression models, as shown in table 9, do not illustrate a significant difference in incumbency advantage between consensus government and the Yukon's partisan system. Thus, we can reject the second hypothesis, that incumbency advantage is stronger in the NWT and Nunavut than it is in the Yukon. Additionally, when the Yukon is included in the sample, the overall incumbency advantage in the territories remains strong. Incumbents are 10.4 times more likely to be elected

compared to non-incumbents. Incumbents in rural areas are 37 percent less likely to be re-elected than their rural counterparts, significant at 90 percent confidence. The gap in incumbency rates across the territories between urban and rural MLAs is consistent with the consensus-government-only sample, albeit slightly weaker. Women are 20 percent less likely to be elected than men, significant at 90 percent confidence, which also aligns with the consensus-only sample, but slightly weaker. Likewise, incumbents are about 30 percent less likely to be elected with each additional candidate they face, and like the first model, the inclusion of the number of candidates in the model renders the previously statistically significant estimates no longer significant.

Based on these findings, we are unable to find a significant difference in incumbency advantage between the Yukon's partisan system and the NWT and Nunavut's consensus system. Thus, we are unable to accept the second hypothesis. Moreover, like in the consensus-only sample, the interaction between incumbency and rural ridings finds that incumbents in rural have a weaker incumbency advantage. This finding further rejects the second hypothesis. As demonstrated in this section, the results of the regression models indicate mixed findings of the hypothesis. The subsequent section provides additional analysis of these results, including how they fit in with the broader political science literature.

	Model								
Predictor	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Intercept	0.290*** (0.000)	0.300*** (0.000)	0.310*** (0.000)	0.300*** (0.000)	1981.860 (0.340)	1718.230 (0.349)	2748.310 (0.320)	3045.670 (0.315)	2593.770 (0.328)
Incumbent	8.240*** (0.000)	8.280*** (0.000)	7.670*** (0.000)	9.950*** (0.000)	10.170*** (0.000)	9.570*** (0.000)	9.660*** (0.000)	8.660*** (0.000)	25.740*** (0.000)
Consensus	0.980 (0.881)	0.980 (0.876)	0.980 (0.855)	0.980 (0.855)	1.000 (0.986)	1.000 (0.999)	1.080 (0.612)	1.350* (0.043)	1.290† (0.082)
Incumbent * Consensus	0.990 (0.978)	0.960 (0.879)	1.000 (0.992)	1.010 (0.972)	1.000 (0.992)	1.030 (0.926)	1.020 (0.948)	0.780 (0.350)	0.800 (0.415)
Woman	NA	0.800† (0.094)	0.750† (0.062)	0.780† (0.074)	0.800 (0.101)	0.770† (0.088)	0.930 (0.745)	0.910 (0.659)	0.920 (0.694)
Incumbent * Woman	NA	NA	1.340 (0.389)	NA	NA	1.210 (0.574)	1.170 (0.638)	1.230 (0.546)	1.260 (0.517)
Rural	NA	NA	NA	1.020 (0.887)	1.000 (0.981)	1.000 (0.993)	1.000 (0.984)	1.030 (0.838)	1.020 (0.852)
Incumbent * Rural	NA	NA	NA	0.670 (0.117)	0.660 (0.110)	0.680 (0.136)	0.670 (0.128)	0.760 (0.308)	0.850 (0.552)
Consensus * Woman	NA	NA	NA	NA	NA	NA	0.710 (0.222)	0.740 (0.287)	0.730 (0.269)
Candidates	NA	NA	NA	NA	NA	NA	NA	0.720*** (0.000)	0.780*** (0.000)
Incumbent * Candidates	NA	NA	NA	NA	NA	NA	NA	NA	0.700** (0.002)
Year	No	No	No	No	Yes	Yes	Yes	Yes	Yes
Observations	1961	1952	1952	1952	1952	1952	1952	1952	1952

† $p < 0.1$, * $p < 0.05$, ** $p < 0.005$, *** $p < 0.001$

Note: P-values in parentheses

Table 9. Second regression model results. Model 5 is the main regression model. Results presented as odds ratios.

6.0. Discussion

The results above found mixed results regarding our hypotheses. First, we found evidence in support of the fourth hypothesis that incumbency advantage is stronger in the NWT than in Nunavut. However, there is no evidence in support of the second hypothesis that incumbency advantage is stronger in consensus government than in the Yukon. Thus, it appears that while the incumbency advantage in the NWT is stronger than in Nunavut, there is no significant difference

in incumbency advantage between the Yukon's partisan system and the NWT and Nunavut's non-partisan system of consensus government. Moreover, there appears to be a relatively significant difference between incumbency rates in urban versus rural ridings. Incumbents in urban districts are more likely to be re-elected than their rural counterparts. This result holds in both the first and second models and means that we can not accept the third hypothesis.

The next section runs several robustness checks to test whether the results are biased. First, I test whether the incumbency estimates are biased by strategic exit by incumbents. More specifically, I test whether MLAs tend to retire rather than run for re-election based their election win being decided by a slim margin of victory. Second, I test whether challengers strategically enter a race based on the incumbent's margin of victory in the previous election, which allows us to test the fourth hypothesis.

6.1. Strategic Exit by Incumbents

To ensure that the results of the regression model are not biased by underperforming incumbents deciding to retire instead of running for re-election, I test for strategic exit by incumbents. The results of the logistic regression to measure the presence of strategic exit, shown in table 10, indicate some evidence of strategic exit. The consensus-government only model has an odds ration of 0.970, which is statistically significant at 99 percent confidence. This result indicates that per 1 point decrease in vote margin in the previous election, incumbents are 3 percent less likely to run for re-election. However, in the territories-wide model, the odds ratio of zero indicates no evidence of strategic exit. These results indicate that in consensus government there is a slight presence of the scare-off effect; however, this relationship does not hold when the Yukon is included in the model.

This approach of measuring strategic exit is not perfect, because it does not account for shocks that occur during that Member's term, such as scandals or economic downturns (Kendall and Rekkas 2012). However, it is the best method available with the current dataset I have.[14] Along with strategic exit, we are also interested whether there is a relationship between previous election performance, and the number of challengers an incumbent faces, We test this relationship as a proxy for the scare-off effect on challenger quantity.

	Model	
Predictor	**Consensus**	**Territories-wide**
Intercept	2787.360 (0.735)	0.000 (0.627)
Margin (t-1)	0.970** (0.002)	1.000 (0.761)
Rural (Ref = Urban)	1.630 (0.110)	1.220 (0.346)

† p < 0.1, * p < 0.05, ** p < 0.005, *** p < 0.001
Note: P-values in parentheses.

Table 10. Strategic exit logistic regression results. Results presented as odds ratios.

6.2. Scare-off Effect

The logistic regression models found a negative correlation between the number of challengers an incumbent faces, and their probability of winning. These results remain consistent across both models, and regardless of territory or political system. However, there is still uncertainty about whether challengers are more likely to enter the race when the incumbent had a narrow victory in the previous election. To test whether there is a relationship between an incumbent's previous margin of victory and the number of challengers they face in the subsequent election I ran a regression with the outcome variable as the number of challengers faced by an incumbent in election t and the main predictor variable being the margin of victory in

[14] In the future, this test of strategic exit can be enhanced by including additional covariates, such as a dummy variable to account for whether the candidate experienced a scandal. As discussed previously, the use of legislative assembly ethics inquiries as a measure for scandal may be a good starting point. Another addition could be the use of census data, such an unemployment data, or the Community Well-being Index (CWB) data to control for economic factors.

election t-1. Table 11 shows the result of the odds ratios for the models measuring the strategic entry of challengers. The results demonstrate that in both the consensus government and territories-wide samples, there is a slight negative relationship between the margin of victory in the previous election and the number of challengers an incumbent face. This aligns with the first hypothesis. For each increase in the percentage of margin of victory in election, t-1 is associated with the incumbent facing 1% fewer challengers.

	Model	
Predictor	**Consensus**	**Territories-wide**
Intercept	1.540*** (0.000)	2.070*** (0.000)
Margin (t-1)	0.990* (0.012)	0.990* (0.013)
Nunavut (Ref = NWT)	1.400** (0.002)	1.150 (0.131)
Female (Ref = Male)	1.190 (0.308)	1.070 (0.532)
Rural (Ref = Urban)	1.430** (0.002)	1.220* (0.014)

† p < 0.1, * p < 0.05, ** p < 0.005, *** p < 0.001

Note: P-values in parentheses.

Table 11. Scareoff effect poisson regression results. Results presented as odds ratios.

To further contextualize these results, figure 10 shows the predicted number of challengers based on the margin of victory in the previous election. These figures demonstrate that there is a slight negative correlation between number of challengers and the previous margin in the previous election. However, the correlation is extremely minor, and lacks much substantive significance.

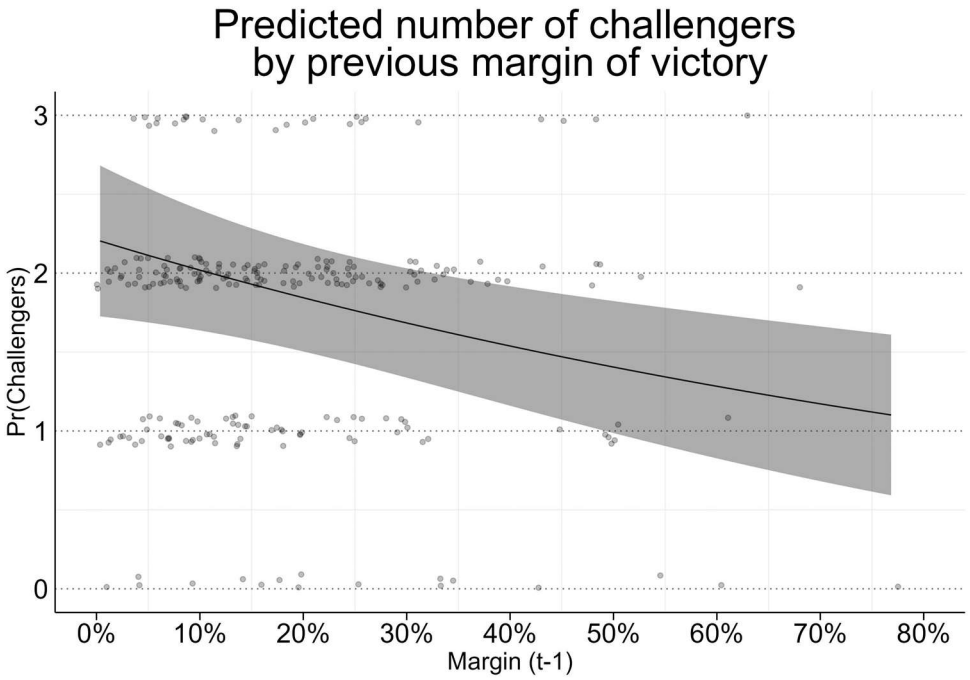


Figure 10. Predicted number of challengers by previous margin of victory

While we can identify a statistically significant relationship between the margin of victory in the previous election and the number of challengers and incumbent faces in the subsequent election, this relationship is lacking substantive significance. However, there does not appear to be major evidence of the scare-effect of incumbency advantage when it comes to challenger *quantity*. There is only a weak relationship between previous vote share and number of challengers. Now that we have been able to explore the issues of scare-off effect and strategic exit, the subsequent subsection revisits the hypotheses.

6.3. Hypotheses Revisited

An overview of the hypotheses and results can be found in table 12. In conclusion, I was able to confirm the first and fourth hypotheses. First, there appears to be some evidence in the scare off effect in consensus government, as there is a clear negative relationship between an incumbent's margin of victory in election t, and the number of candidates they face in the

subsequent election. However, this relationship is incredibly weak and lacks substantive significance. Second, we were unable to find a difference in the strength of incumbency advantage in consensus government compared to the Yukon. Thus, we cannot confirm our second hypothesis, regarding the role of partisanship in undermining incumbency advantage. Penultimately, I found the opposite relationship in terms of urban-rural differences in incumbency rates, as in both consensus government and the three territories samples, the effect of incumbency tends to be stronger amongst urban incumbents, compared to their rural counterparts. Lastly, I can confirm the fourth hypothesis, that the incumbency effect is stronger in the NWT than Nunavut. In sum, this thesis yielded mixed results, including confirming one of the hypotheses with substantively significant findings. Based on these findings, we can now discuss how they fit into the broader political science literature, and its contributions to the areas of electoral studies, and Northern Canadian politics.

Hypothesis Number	Hypothesis	Result
H1	There is a negative relationship between the margin of victory in election t and the number of challengers the incumbent faces in t+1.	Confirmed (Weak relationship)
H2	Incumbency advantage will be stronger in the NWT and Nunavut than in the Yukon.	Rejected (No effect found)
H3	Incumbency advantage is stronger in rural districts compared to urban districts.	Rejected (Opposite effect found)
H4	Incumbency advantage in Nunavut is weaker than in the Northwest Territories.	Confirmed

Table 12. Hypotheses and results

6.4. Contributions and Broader Implications

Along with results of the hypotheses, this thesis has broader implications in various areas of research, particularly the study of political science research methodologies, Northern

Canadian politics, and Canadian politics more generally. First, this research displayed some of the challenges of research methodologies in political science, especially when dealing with small-sized case studies. Specifically, this thesis further showed that while the RD design is an extremely popular method of measuring the incumbency advantage, due to its need for a large number of cases around the cutoff, it is not necessarily the best tool to be used for smaller-sized case studies.

Consequently, this thesis demonstrates that oftentimes one methodological tool cannot be solely used in research, but instead must be used in concert with other available tools. The logistic aggression models are less robust than the RD design, and do not allow for the estimation of a causal effect. With that being said, the logistic regression models allow for a descriptive analysis of incumbency advantage in the territories. The logistic regression models allowed for this thesis to find differences in incumbency rates between the NWT and Nunavut, as well as urban-rural incumbency differences. The requirement to utilize both the regression discontinuity design along with the logistic regression model demonstrates that oftentimes in small-N quantitative studies, the conclusions tend to be more fuzzy and less certain. This is in contrast to large sample-size case studies which enable the use of more robust causal inference research designs.

Second, this thesis contributed to the incumbency literature by testing assumptions of incumbency advantage using a unique case study of Canada's three territories. By examining incumbency advantage in the territories, I was able to yield findings that contradicted the assumptions of previous incumbency advantage literature. These results suggest that partisanship must not be overemphasized when studying incumbency advantage, but instead acts in unison with factors such as demographics and urban-rural differences. For example, the third hypothesis

found that incumbency advantage in the territories tends to be stronger in urban, compared to rural districts, which contradicts the previous incumbency literature. However, the thesis was able to find a slightly weak negative relationship between an incumbent's margin of victory in the previous election and the number of challengers they face in the subsequent election, which aligns with the previous incumbency literature on the scare-off effect.

Lastly, this thesis contributes to the territories and Canadian politics literature. Up to this point there has been a limited number of quantitative political science studies on Northern Canada, Additionally, no paper has been published using elections data from all three territories. Thus, this thesis was able to use a case study that has never been used before in the study of incumbency advantage. However – as discussed earlier in this section – perhaps there are valid reasons for the limited quantitative political science research on Northern Canada, due to the small-sample sizes and difficulty in obtaining data.

In sum, this thesis contributed to three subfields of political science research. First, this thesis demonstrated the methodological challenges of working with small samples sizes, which have the tendency to limit the ability to use causal inference methods. Likewise, this thesis contributed to the incumbency advantage literature, using a non-partisan case study, which showed that partisanship should not be over-emphasized when studying incumbency. Lastly, this paper contributed to the Northern Canadian politics literature, by presenting a new dataset on territorial elections, and using quantitative methods on a case study that has previously relied on qualitative research. By doing this, this thesis was able to demonstrate the challenges of conducting quantitative elections research on Northern Canada, due to data availability concerns and small sample sizes.

7.0. Conclusions

This thesis contributes to the areas of electoral studies and Northern Canadian politics using a regression discontinuity design and logistic regression models to measure incumbency advantage in the NWT and Nunavut's consensus government system, in comparison to the Yukon's partisan electoral system. First, this thesis was unable to find any definitive causal effect of incumbency in consensus government, through the regression discontinuity design. Second, there does not appear to be a statistically significant difference between incumbency rates in consensus government and the Yukon, as demonstrated in the second model.

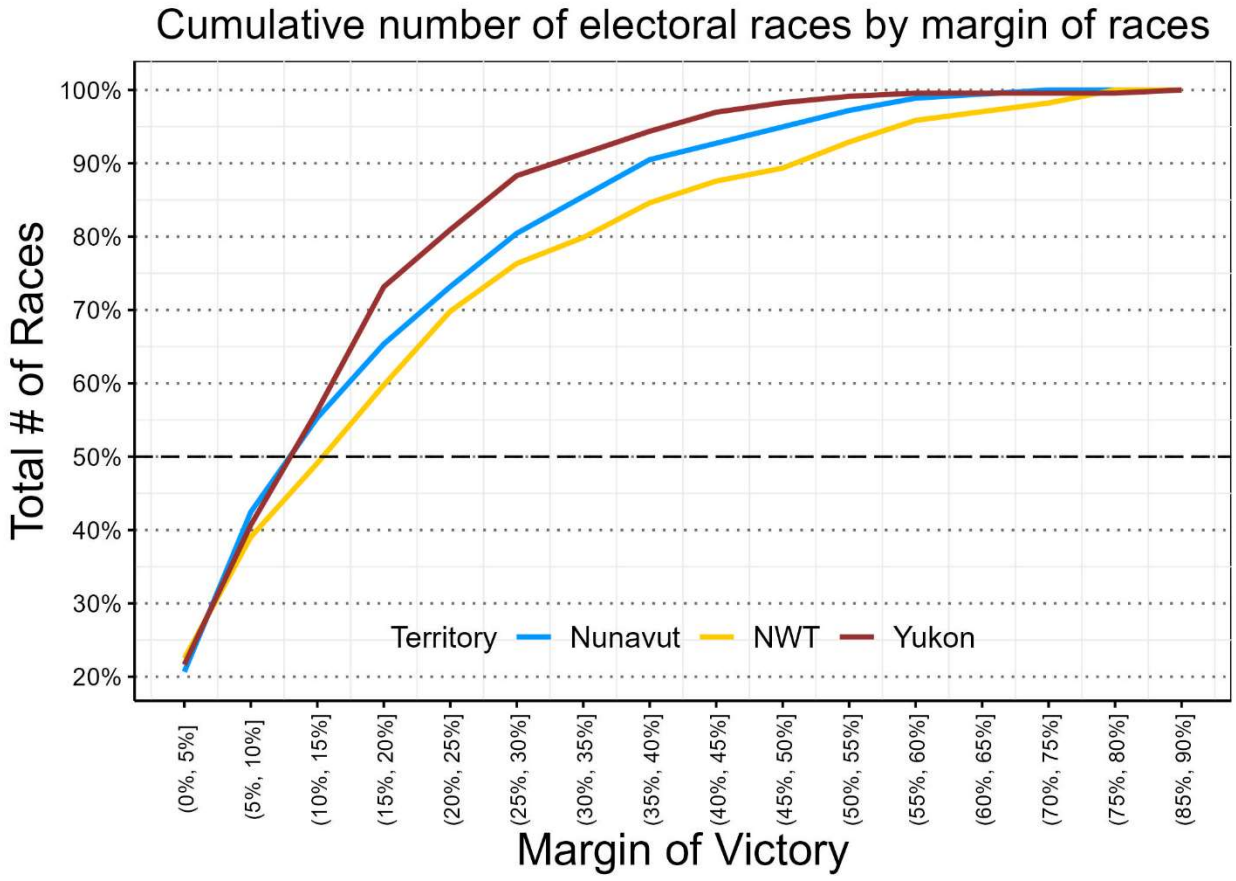
In addition, this thesis was able to confirm the first hypothesis regarding the scare off effect. The results indicate that there is a negative relationship between the margin of victory in election t-1 and the number of challengers and incumbent faces in election t. However, while this finding is statistically significant, the relationship is incredibly minor, and lacks substantive significance. Furthermore, we were unable to confirm the second hypothesis, as there was no evidence to demonstrate the scare-off effect in the three territories. Penultimately, in both the territory-wide and consensus-only models, there the results indicate that urban incumbents are more likely to be re-elected than their rural counterparts, aligning with the third hypothesis. Lastly, the stronger level of incumbency advantage in Nunavut compared to the NWT aligns with the fourth hypothesis, as there is a clear statistically significant difference in incumbency rates in the territory compared to the NWT.

In general, this thesis found that many of the assumptions regarding incumbency advantage found in previous studies in partisan systems remain consistent in a non-partisan system. For example, there appears to be some presence of the scare-off effect in consensus government, in terms of challenger quantity, as fewer challengers enter a race where the

incumbent received a large portion of the vote share in the previous election. However, this effect is incredibly weak, lacking much in terms of substantive significance. Likewise, there does not appear to be a major difference in incumbency rates between consensus government and the Yukon's partisan system. Instead, it appears other factors play a more significant role beyond partisanship, such as rural versus urban differences, and differences in the importance of campaign financing.

In conclusion, this thesis provides the groundwork for additional quantitative studies on non-partisan consensus government in the NWT and Nunavut, and the Yukon's partisan electoral system. While there are some limitations to the data – such as the small sample size, and lack of some covariates – they present an additional opportunity for more research going forward, namely the coding additional variables of interest for the data set, using an approach like that used by Johnson et al. (2021) in their dataset for federal election candidates.

Appendix 1 – Cumulative number of electoral districts by electoral margin.



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