

# Strongholds and Battlegrounds: Local Electoral Competition in Canada

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## **Abstract**

Despite the nationalization of politics, the study of local district dynamics remains fundamental to our understanding of Canadian electoral politics. Making use of official results from nine federal elections since 1979, this paper proposes a new classification based on parametric modelling, and focused on the stability of local competition across elections. Districts are divided into two categories – strongholds and battlegrounds – depending on successive performances by major parties. This new classification sheds light on a dimension of electoral competitiveness that is not taken into account by traditional measures of party competition. We present two applications in the Canadian context where this new classification can improve our understanding of electoral dynamics.

**Keywords:** Electoral Politics; Local Politics; Canada

*“[The 2004 election] was a salutary reminder that there are no nationally elected political offices to fill in Canada (p.2).”* Carty and Eagles (2005)

## 1 Introduction

Scholars in Canadian electoral politics have spent much time studying voters’ and parties’ behaviour at the national level. Part of the reason why the focus has been on politics in Ottawa is the perceived importance of higher politics in a modern state: Macroeconomic and foreign policies are debated and shaped in the capital, not locally. Moreover, popular and academic perceptions converge on the conclusion that decision power is now concentrated in the hands of the Prime Minister and his or her closest aides (Savoie 2000; Goldenberg 2006; Flanagan 2007).

There is thus very little (perceived) relevance for backbenchers and members of Opposition parties. Indeed another reason for the focus on national politics is a dearth of significant findings from those who have shown interest in local Canadian politics. It has been argued that party discipline limits the agency of Members of Parliament (MPs), forcing them to focus on constituency work (Docherty 1997; Docherty and White 2004) that have little to do with their legislative duties. The literature also finds that local candidates’ quality (Irvine 1982) and campaigning (Cunningham 1971; Clarke et al. 1979; Blais et al. 2003) have very little impact on vote choice in a general election.

There are exceptions, however. And there seems to be a new stream of research that has emerged in the last decade. We know that the local context helps voters to form expectations regarding candidates’ chances of winning in the district (Blais and Bodet 2006). District’s characteristics also have an impact on MPs behaviour in Parliament, at least during Question Period (Soroka, Penner and Blidook 2009). Local candidates and organizations do influence the kind of electoral campaigns run in electoral districts (Sayers 1999; Carty, Eagles and Sayers 2003). But the burden of proof remains on the side of those who believe in the importance of local politics.

The purpose of this article is to propose a new measure of electoral context that will create new opportunities in research, and help bring the study

of local politics back to fashion. Our ambition is to overcome measurement inadequacies found in the political behaviour literature, particularly regarding contextual factors. By making available a refined measure of electoral competitiveness, we hope to convince students of Canadian politics to go back to the conclusions drawn from previous operationalizations and question them thoroughly.

We owe a great debt to the work of Carty and Eagles (2005) who gave us the idea of using parametric statistics in the context of local electoral politics. In a book chapter titled *Small Worlds and Local Strongholds*, the authors make use of residuals computed from a linear regression model to identify local strongholds in the 2000 general election. Their model has great explanatory power, and offers a nice parametric criterion that is consistent with the authors' qualitative analysis of these local electoral context. However, the cross-sectional framework used by the authors is a shortcoming since it ignores the role of local political traditions and variations of competitiveness over time. Our method overcomes this weakness.

## 2 Local Electoral Competitiveness in Canada

Local electoral competitiveness in the Canadian context has a long tradition of instability. When looking at the composition of the House of Commons since the early 1920s, one must recognize the fact that, despite the domination of the Liberal Party of Canada in Cabinet, local contests for elected office have been highly competitive with a high turnover rate among Members of Parliament (Ward 1947; Docherty 1997). Incumbency does help for re-election in Canada (Krashinsky and Milne 1985) but the country has also a long history of spectacular elections<sup>1</sup> that brought significant renewal of Parliament, and important realignments of the electoral landscape.

Electoral variability in Canada is accounted by several factors. Among them, partisan loyalty and regional cleavages have played an important role. Partisan loyalty was first operationalised in United States by the Michigan School (Campbell et al. 1960). The measure was rapidly adopted by American politics scholars but questions were raised regarding its validity outside the American context, and most specifically in Canada. Some argue that

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<sup>1</sup>1921, 1958, 1984, and 1993 general elections illustrate this point.

the use of party identification north of the American border is questionable (Meisel 1975), in large part due to its unusual levels of instability across elections (Leduc et al. 1984). These conclusions are challenged by first Clarke et al. (1979), who offered a definition that included both durable and flexible partisans, and by Johnston (1992) who claims that instability is an artifact of survey design. The least we can say is that Canadian voters have experienced recurring electoral introspection over the years that have played a role in electoral politics. Another important factor that drives political competitiveness is the saliency of regional linguistic and economic cleavages observed in Canada. This diversity fosters the emergence of irreconcilable political demands that are recuperated by smaller parties, which sometimes thrive and then challenge the electoral order. Canada has thus seen the rise and fall of a whole series of regional parties which built support based on sentiments associated with regional or cultural grievances (Mallory 1954; Schwartz 1974; Cross 2002; Young and Archer 2002).

The importance of partisan instability and regional heterogeneity are good evidence of the importance of investing more time in the study of district-level politics. But one question remains: What is the best way to measure competition? The two most popular measures in the literature are the effective number of parties (Laakso and Taagepera 1979; Lijphart 1994) and Endersby et al.'s competitiveness index (Endersby, Galatas and Rackaway 2002). We argue that both measures, despite their respective qualities, do not tell the whole story. A new operationalisation is needed. In the next section, we discuss the pros and cons of these measures of competitiveness in the context of five fictional electoral districts, and we present a new measure that nicely complements these original two.

### **3 Measures of Competitiveness**

For the sake of the argument, we discuss here three measures of competitiveness using five fictional districts over three consecutive elections. Table 1 shows vote shares gathered by parties in each election (the winning plurality is in bold characters) and three measures of competitiveness that we discuss below. For the moment, let us ignore the last three columns and focus on raw electoral numbers.

(Table 1 about here)

Party A is definitively dominant in this party system. It won nine local elections, spread across four districts over the course of these three elections. Party B managed to win only three local contests, over two districts. Party C has won district 4 in all three elections but has not had any success elsewhere. District 1 is the most contested. Party A managed to win a majority and a plurality of votes in the first and the third election while party B won the second contest. Party C is weaker but did manage to increase its vote share by 15 percentage points between the second and the third election, helping Party A to recapture the district despite gathering the same percentage of votes as in the second (lost) election. Compared to district 1, district 2 does not show signs of strong competition. Party A won all elections by good margins (30%). However, parties B and C did experience high volatility in vote share across time, exchanging second place and 20 percentage points in each election. District 3 saw the emergence of party B during the second election due in large part to the increase of party C's vote share at the expense of party A. District 4 is dominated by party C while A and B gather around a quarter of the votes each. Finally, district 5 shows a similar pattern to district 4 but this time to the advantage of party A which gathered strong pluralities in the first two elections and a short majority in the last election.

We now discuss three measures of competitiveness and apply them to this fictional example. We show, using the fictional example presented above, how each measure illustrates a unique dimension of competition and how these dimensions, when brought together, each shed light on different aspects of electoral competition.

### **3.1 A Measure of Choice (ENP)**

The first measure of competitiveness we discuss is the effective number of parties (ENP) as proposed by Laakso (1977) and Laakso and Taagepera (1979). Laakso and Taagepera (1979) define the ENP as “the number of hypothetical equal-size parties that would have the same total effect on fractionalization of the system as have the actual parties of unequal size (4).” In other words, ENP standardized electoral fractionalization by giving the number of equally strong parties needed to find the same electoral choice. ENP is presented by its advocates as a proxy for electoral competition but it is more appropriate to think about it in terms of the complexity that voters had to face during the election campaign. Formally, ENP takes the form:

$$(1) \quad ENP = \frac{1}{\sum_{p=1}^N \text{Vote Share}_p^2}$$

An ENP of 1 means the presence of a monopolistic party while an ENP of three or higher expresses strong multipartyism. Table 1 shows how ENP varies across elections and districts. Electoral choice is the most diverse in district 3, followed by 4 and 5. District 1 shows the strongest change over time as ENP goes from 2.38 to 2.89. ENP is a very useful measure of choice but it does not tell the whole story. First, it does not inform us of *which parties* are at the forefront of the electoral menu. The order of parties changes across elections at least once in all districts and the ENP is not sensitive to this reality. The second district illustrates that point quite spectacularly as party B and C exchange second place while ENP remains at 2.17. District 3 exhibits a constant rise of party C but very little variation in ENP. The second weakness of this measure is that it does not tell enough about the dominance of certain parties. Districts 2 and 4 are the best examples as the winning party remains, in both cases, not significantly challenged by contenders. Let us now see how the second measure of competition behaves in these five scenarios.

### 3.2 A Measure of Closeness (CI)

Measures of competitiveness have been developed by a series of scholars over the years around the concept of closeness between leading parties.<sup>2</sup> Closeness between leading parties is especially for those interested in rational thinking during election: If a voter wants to maximize her utility and pick the best option available, what matters is not the number of existing parties in an election but the distance between leading parties. Among the numerous operationalisations offered, Endersby, Galatas and Rackaway (2002) make a convincing argument in favour of a functional form that takes into account relative strength of parties and the amount of electoral choice that voters face. Formally, this competitiveness index ( $CI_k$ ) takes the form:

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<sup>2</sup>See for example Silberman and Durden (1975), Cox (1988), Cox and Munger (1989), and Alvarez and Nagler (2000).

$$(2) \quad CI_k = k^k \sum_{p=1}^k Vote Share_p$$

where  $k$  is the number of competing parties, and *Vote Share* is the fraction of the vote gathered by party  $p$  at election  $t$  in district  $d$ . The CI score is bounded between 0 and 1, where higher values mean more competition. The authors suggest using different values of  $k$  to capture the different dynamics at play. In an article that makes use of Endersby et al.'s measure, Johnston, Matthews and Bittner (2007) choose to fix  $k$  at the rounded effective number of parties ([ENP]):

$$(3) \quad CI_{ENP} = [ENP]^{[ENP]} \sum_{p=1}^{ENP} Vote Share_p$$

This strategy simplifies interpretation and we thus follow the same path. CI goes a step further than ENP since it takes into account electoral choice through *ENP* but also the relative strength of leading parties through the remaining of the equation. This is why district 2 and 4 look more similar on CI than on ENP. Within districts, the variation of CI is also meaningful, as a decrease in the distance between the leading party and the second contender in district 3 causes an increase in competitiveness on the CI scale. Even so, CI captures only parts of the electoral story. Firstly, the order of parties is not taken into account by the measure. A good example is district 2 where the shift between parties B and C has no impact on the index. Secondly, CI tends to overstate the importance of third parties across elections. District 1 is a good example. When the three elections are taken individually, the third election does look significantly more competitive than the second or the first. However, if one knows that party C did not perform well in the first two elections, its better performance in the third contest seems a less impressive in term of competitiveness: All three elections remain essentially a two-party race between party A and B.

Our point here is that Endersby et al.'s measure of closeness does not take into account the ongoing electoral context of an election. CI is static and election-specific. There is thus a need to build a dynamic measure of

competitiveness that would overcome CI's limits. Our measure of Party Support Stability (PPS) performs that task.

### 3.3 A Measure of Party Support Stability (PSS)

Measuring competition over longer periods of time necessitates a combination of measures that take into account both static and dynamic dimensions of electoral politics. One option would be to compute static measures (ENP or CI) for each election in each riding and aggregate across time using district-specific means or medians. This strategy would only capture a small portion of the electoral dynamic since (in)consistent patterns cannot be expressed in aggregated measures: means and medians are less informative than vote share data. Moreover, aggregation flattens specificity by ignoring the fact that, for example, some parties dominate others over multiple elections (i.e. districts 2, 4, and 5) or experience instability in its electoral support (parties B and C in district 2).

A better strategy is to build a measure of competitiveness that makes use of information in multiple elections to capture almost exclusively dynamic (in)stability. Our measure is a parametric typology that classifies electoral districts into two categories: *strongholds* and *battlegrounds*. Strongholds can be non-competitive or weakly-competitive. A non-competitive stronghold is defined as a district where there exists no coalition of parties which could have defeated the winning party three elections in a row. In practice, that means that the same winning party has gathered at least 50% of valid ballots in each election during that period. Non-competitive strongholds have low ENP, low CI, but also show a great deal of party support stability over time. An overwhelming majority of districts in SMP systems do not reach that status since the presence of third parties jeopardizes majorities almost all the time. The bulk of districts are thus divided between weakly-competitive strongholds and battlegrounds. Weakly-competitive strongholds remain considerably safer than battlegrounds. Three criteria need to be fulfilled to gain a “weakly-competitive stronghold” status. The first criterion is built around a simple linear model that takes the following form:

$$(4) \quad \%Vote_E = S \times \%Vote_{E-2}$$

where  $\%Vote$  is the percentage of valid votes by a given party and  $S$  is

the coefficient of association (or the slope) between vote shares in the current election ( $E$ ), and two elections previous ( $E-2$ ). After estimating that simple model for all parties of interest, we have all the information needed to filter districts who fulfill the following three conditions:

- After regressing party  $p$ 's district vote shares in a given election on its vote shares from two elections previous, the district's residual is within one standard deviation on either side of the mean residual

AND

- In the district, party  $p$  gathers a vote share larger than the smallest winning plurality in any district in the country in the given election

AND

- No other party fulfills the first two conditions in the district under study.

The conditions listed above contain two elements that need further clarification: the choice of regressor and the choice of stability measure. The regressor is the vote share for the party two elections previous. The choice of lag aims at capturing an element of vote share stability across time, keeping in mind that elections usually occur every few years. Using higher lags would be costly since it would increase the potential role of party realignment and redistricting. The second lag is thus a fair compromise between short term loss of information and long term loss of comparative validity. The second element that needs discussion is the rather arbitrary choice of stability cut-off. We opt for "one standard deviation on either side of the mean residual" for two reasons. First, it is specific to each party's absolute variation in vote share across time, and second, the interval is not too restricting, leaving enough space to allow 2/3 of districts to fulfill that condition.

For instance, using our five fictional ridings, one finds that regressing Party A's vote share at election  $E$  on its vote share two elections previous ( $E-2$ ) produces residuals<sup>3</sup> with a mean of 0.93 and a standard deviation of

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<sup>3</sup>Estimates available on request.

6.31. The first condition is fulfilled in a district if its residual is inside the interval  $[-5.38, 7.25]$ . This first condition is more stringent for party B since residuals have a standard deviation of 3.52 around their mean. The first condition is thus fulfilled for party B in a given riding if its residuals are somewhere inside the interval  $[-3.15, 3.89]$ . Party C shows similar variation as party A with a standard deviation of 6.45 and an interval of  $[-7.300, 5.602]$ . The second condition is straightforward. In this example, the threshold is 40% since this percentage represents the smallest winning plurality in all three elections. Keep in mind that this threshold could have been different across elections if a different threshold had been observed then. The third condition is easily fulfilled in our example because there is no district where two parties both fulfill the first two conditions. As stated earlier, districts that do not have a stronghold status are categorized as battlegrounds. In our example, two out of five districts fall in to that category. Table 1 above shows ENP, CI and PSS status for all five fictional districts.

District 1 offers a narrower electoral menu (less choice) than district 4 but is less stable across time. Districts 1 and 3 are both classified as battlegrounds but Endersby et al.'s measure of closeness shows that district 3 was less contested in the first two elections. These measures complement each other well in many different contexts. We will now show how it performs with real electoral data.

## 4 Two Applications in the Canadian Context

Now that we have demonstrated that a measure of stability is useful to the study of local electoral dynamics, we propose two applications drawn from the Canadian context. The process that leads to a classification of Canadian districts into two categories produces three parameters that are interesting in themselves. There is a trend coefficient ( $S$ ) that informs us of how party support changes over elections at the national level, but also residuals' moments (mean and standard deviation) that tell us more about the level of stability across districts. We discuss these in more details in this section.

We first propose a portrait of socio-economic landscapes that produce stable support for parties. We offer a classification of electoral districts for

three party configurations – 1979 to 1984<sup>4</sup>, 1993 to 2000, and 2004 to 2008 – and show how these district-level patterns have changed over the years. The first party configuration (1979-1984) is part of the third Canadian party system (Carty 1992) while the last two are part of the fourth party system (Carty, Cross and Young 2000).

The second application tests the relationship between electoral competition and turnout at the district level. We look specifically at the last three elections as an example of what contribution our measure of party support stability can make to the study of political participation in an ecological framework. We show that party support stability is a new dimension in the relationship between electoral competition and turnout that cannot be taken into account by traditional measures.

## 4.1 Party Support Changes and Stability

Three parties have been in government in Canada: The Liberal Party (LPC), the Progressive-Conservative Party (PCP) and the Conservative Party (CP).<sup>5</sup> The LPC has been in power for almost 70 years in the twentieth century with a left-to-centre platform that advocates for centralized federalism, a strong welfare state, equality of opportunity, and multiculturalism. The LPC has always been stronger in urban and more diverse districts, but has lost most of its clout in Quebec – a former bedrock of Liberal support – after the creation of the Bloc Québécois in 1993. Interestingly, the Liberal hegemony has been challenged on numerous occasions by spectacular Progressive-Conservative landslide victories (1957 and 1984 are good examples) that have had endur-

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<sup>4</sup>The 1988 election was unique in the Canadian political history as the campaign was a referendum on the Free-Trade Agreement (Johnston et al. 1992) negotiated by the Progressive-Conservative Prime Minister, Brian Mulroney. It is thus excluded from the analysis.

<sup>5</sup>The Progressive-Conservative Party and the Conservative Party are fundamentally the same party since the latter is the product of a merger between the former and another right-wing party (Reform Party) in the early 2000's. We argue that the distinction between the PCP and the CP is useful to grasp the political context in certain instances – figure 1 for example – but that it does not matter if one is interested in longitudinal analysis. That being said, we acknowledge that the Progressive-Conservative and the Reform Party competed for votes aggressively and their subsequent merger was more a strategic decision from both leaderships to increase their seat shares than an ideological convergence between their memberships.

ing effects on electoral politics. After ten years of internal conflict on the right flank of the political spectrum (Flanagan 2007), a united Conservative Party has since formed two minority governments since 2006, breaking 11 years of Liberal control over Cabinet. Though there exist significant political differences between the late PCP and the CP, both parties stand for economic liberty and openness, and share similar electoral clienteles. The New Democratic Party (NDP) was created in the early 1960s to offer an electoral lever to the organized labour movement. Despite a long series of charismatic leaders and tangible success at the provincial level, the NDP has never been able to surpass the LPC as the main progressive party in the way the Labour Party replaced the Liberals in United Kingdom. However, as a result of some regional strongholds, notably in the Prairies and in southern Ontario, the party's survival has never been seriously challenged.

Two regional parties are included in our analysis. First, the Bloc Québécois (BQ) has played a significant role in Quebec politics since the 1993 election, winning repeatedly a majority of seats in that province. The BQ is a separatist party that has opted for a parliamentary strategy from the beginning and that is now actively part of the House of Commons dynamics (Young and Bélanger 2008). It states that it wants to work within Canadian democratic institutions to defend the interests of all Québécois, while still aiming for independence in the long run. A second regional party, the Reform Party (REF), also appeared with the fourth party system but merged with the Progressive-Conservatives in 2003. It was a grassroots party from Western Canada in direct lineage with older agrarian and populist parties that had shaken Canadian politics before the Second World War. Despite its pan-Canadian ambitions, the Reform Party never managed to establish a solid electoral base outside British Columbia and the Prairies. Its positions on official bilingualism and social policies were especially at odds with Quebec voters, where the party was never successful. In 2000, the Reform Party disbanded but most of its prominent figures moved to the newly created Canadian Alliance (CA) to run the 2000 election under new leadership. The results were again disappointing, as the party did not manage to enlarge its support beyond its traditional clienteles. Figure 1 shows the distribution of strongholds and battlegrounds over time.

(Figure 1 about here)

We use percentages instead of raw numbers on the  $y$  axis because the

number of ridings has increased by almost 10% since 1979, making absolute numbers misleading. On top of this, the 1993-2000 party alignment is problematic since there was a redistricting between 1993 and 1997, making correspondence complex. Our strategy has then been to keep only those districts which incorporate 10% or less of another district on the new electoral map, and consider them “comparable” to the 1993 districting. We thus manage to salvage 202 of a potential 295 districts. Contrary to United States, redistricting in Canada is in the hands of a non-partisan body not concerned about incumbents re-elections and/or minority group representation. The only criteria are population balance and respect of provincial quotas. We can thus consider that our sample of 202 districts is not biased in favour of strongholds or battlegrounds.

We can see in figure 1 that despite its recent difficulties, the LPC remains the only party able to maintain a good level of party support stability at the district level.<sup>6</sup> The recent electoral success of the Conservative Party is illustrated in the bottom frame as the distribution of strongholds (if we exclude the BQ) is quite similar to what was observed between 1979 and 1984. A second important element here is the link between the number of parties competing during these periods and the proportion of districts with battleground status. As figure 1 shows, the percentage of battlegrounds has decreased between 1979-1984 and later periods, despite the fact that more parties are competing in these most recent elections. This might seem counterintuitive at first (more parties should mean more competition) but once we take in to account the importance of regionalism in Canadian politics, the explanation becomes rather obvious. There is indeed a larger electoral offer in the whole country after the 1993 election but it does not translate into more choice at the district level. The CPC was replaced by the Reform Party/Canadian Alliance in Western Canada, and by the Bloc Québécois in Quebec, while losing support in Ontario. Interestingly, the average ENP<sup>7</sup> and CI<sup>8</sup> do not vary much over time meaning that this apparent additional competition on the national stage is just an artifact of intense regional politics.

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<sup>6</sup>Looking at non- and weakly-competitive strongholds separately makes the discussion both conceptually difficult and empirically redundant. Results presented in this article would not be significantly different if we had decide to use a three-category classification.

<sup>7</sup>ENP goes from 2.730 to 2.821 to 2.902 over the three periods under study.

<sup>8</sup>CI goes from 0.589 to 0.577 to 0.496 over the three periods under study.

## 4.2 A Portrait of Canadian Strongholds

We are interested in finding out what strongholds look like in terms of socio-economic landscape. To achieve this, we estimate party-specific models for both the LPC and conservative parties.<sup>9</sup> As figure 1 shows, stable support for conservative parties shift across party alignments from the Progressive-Conservative Party in 1979-1984, to the Reform Party/Canadian Alliance in 1993-2000, and finally to the Conservative Party since 2004. We thus use these three parties in our estimations, depending on the party system. The dependant variable takes the value 1 if a district is a stronghold and 0 otherwise. We have matched electoral data to census data<sup>10</sup> from these time periods. We test the relationship between party support stability and six socio-economic characteristics at the district level. Since census data follow a gamma distribution, with high density close to zero and only a few cases above the mean, we divide our socio-economic measures into quartiles that take the values 1 to 4. This strategy also standardizes estimated effects across characteristics.

We also include dummies for the fourth party system's party alignments to take into account the structural variations in party support stability over time. Two interactions are also tested. First, we expect districts in the higher quartiles of % of francophones to have deserted, to a certain extent, the Liberal Party's base support during the fourth party system after the emergence of the Bloc Québécois. Second, we expect a strengthening of the relationship between economic dependancy toward primary sector jobs and the likelihood of being a conservative stronghold in the fourth party system since the Reform Party/CA and its successor the Conservative Party are stronger in regions of Canada where oil, gas, and mining industries thrive than the Progressive-Conservative Party was previous to the 1993 election.

(Table 2 about here)

Table 2 shows estimates of two probit models with clustered standard errors around provinces. The first model refers to Liberal strongholds.<sup>11</sup> The

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<sup>9</sup>The NDP and the BQ are ignored for the following reason: There are too few NDP strongholds (4.68%) in our pool of data and too few districts with BQ candidates (126) to ensure reliable maximum-likelihood estimates.

<sup>10</sup>We make use of 1981, 1996 and 2006 census data publicly available through CANSIM.

<sup>11</sup>The regressand takes the value 1 when a district is a stronghold and 0 otherwise.

results suggest that districts with higher unemployment and more manufacturing jobs have a higher likelihood of showing strong party support stability beneficial to the LPC. On the other hand, districts with high percentages of jobs in the primary sectors are less favourable to the Liberals. These relationships are all quite substantial. Moving up one quartile on manufacturing and unemployment increases on average the likelihood of being a Liberal stronghold by 4.06 and 6.96%, respectively<sup>12</sup>. The same change on primary sector decreases that likelihood by 6.02%. % of lone-parent families and of allophones do not seem to have any effect on the likelihood of being a Liberal stronghold. As expected, there has been a shift in the relationship between % of francophones (quartiles) and the likelihood of being a Liberal stronghold. In the third party system, a jump of one quartile was associated with an increase of 8.76% but the relationship disappears between 1993 and 2000. Since 2004, the relationship is actually negative with a marginal effect of 5.07%. Interestingly, and as figure 1 shows, this shift happens at a time when the Liberal Party was increasing its number of strongholds. One explanation for this apparent paradox could be the migration of Liberals' main support from francophone Quebec to Ontario.

What about conservative strongholds? We see to a certain extent the mirror of what we just discussed relative to the Liberals'.<sup>13</sup> % of unemployed and of jobs in the manufacturing industry is negatively associated with the likelihood of being a conservative stronghold. The magnitude of the relation is quite important with marginal effects of -12.07% and -5.67%. Keeping everything else equal, districts with higher % of lone-parent families are on average 5.08% less likely to be conservative strongholds. While there is no significant association between % of allophones and stronghold status, conservative parties do not perform well in districts with higher proportion of francophones. Our intuitions relative to % of jobs in the primary sector are confirmed. The relationship between this regressor and the likelihood of being a conservative stronghold is not significant in the third party system, but significant and positive in the fourth. Going up one quartile in the % of primary sector jobs increases the likelihood of being a conservative stronghold by 11.49% between 1993 and 2000 and by 11.25% between 2004 and 2006.

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<sup>12</sup>Estimates drawn from the “dprobit” command in Stata 11.

<sup>13</sup>Keep in mind that a district cannot hold a stronghold status for more than one party at a time.

These estimates offer a nice portrait of Canadian electoral politics since 1979. Can we learn more by looking at specific parameters used in the classification process? In the next sub-section, we look at two specific cases that illustrate the usefulness of these auxiliary parameters in the context of local politics.

### 4.3 Illustrations of Party Support (In)Stability

To illustrate how our measure of party support stability sheds light on how electoral support varies over time, we look at two examples. The first example is the PCP between 1979 and 1984. This is an interesting period for the PCP since the party won a plurality of seats in 1979, then lost control of the government in 1980, before winning the second largest majority of seats in Canadian political history in the 1984 election. Over the whole period, we thus expect party support instability but still a large number of strongholds. We also expect a slope above 1 since, on average, the PCP did better almost everywhere in 1984 than in 1979.

(Table 3 about here)

Table 3 shows OLS estimates of a regression of 1984 PCP vote share on 1979 PCP vote share. An increase of one percentage point in 1979 is associated with an estimated increase of 1.180 percentage points in 1984. On average, predictions on  $y$  underestimate vote share by 8.189 percentage points with a standard deviation of 19.271. Figure 2 shows how vote shares varied between the 1979 and the 1984 election. Hollow dots are battlegrounds, and black dots strongholds. The two dotted lines show the smallest winning pluralities in both elections (34.78% in 1979 and 34.97% in 1984). Strongholds can thus only be found in the upper right quadrant. But fulfilling that condition is not sufficient. Districts also had to reach the minimum winning plurality in 1980 (33.80%), they need to be within one standard deviation of the estimated slope, and these characteristics must not have been shared between two or more competitors. One can notice that there is a concentration of districts in the top-left quadrant. These districts were responsible for Mulroney's landslide victory in 1984 since this is where the PC managed to increase its support during that historic election. They are considered battlegrounds as party support instability reaches its paroxysm in these districts.

Interestingly enough, this cluster includes 68 districts from the province of Quebec<sup>14</sup> where Mulroney made most of his gains in 1984. These districts were all lost in the 1993 election, except Sherbrooke where Jean Charest managed to keep his seat, despite his party's implosion.

(Figure 2 about here)

Despite the peculiar case of Quebec, the PCP did manage to build a solid base of unchallenged districts during that period with 112 strongholds, mostly in Ontario and Alberta. Interestingly, the party had 41 weakly-competitive and 6 non-competitive strongholds in Ontario but the ratio is quite the opposite in Alberta with 20 non-competitive and a single weakly-competitive stronghold.

A second interesting case useful to examine party support stability is the most recent party configuration (2004-2008). After a short victory that led to a minority government in 2004, the LPC finally lost power in January 2006. With a new leader in Stéphane Dion and a new platform that emphasized environmental aspirations, the LPC did extremely poorly in 2008, gaining their second worst vote share in the party's electoral history. We expect a slope smaller than 1 since Dion did worse in term of vote share than his predecessor, Paul Martin. However, party support stability should be higher than in the previous example since the LPC experienced a decrease in vote support across the board, without much regional variation.

(Table 4 about here)

Table 4 shows OLS estimates of a regression of 2008 LPC vote share on 2004 LPC vote share. An increase of one percentage point in 2004 is associated with an estimated increase of 0.751 percentage points in 2008. As expected, the LPC lost support rather systematically in this period, but a quick look at the residuals informs us that the instability around this systematic effect is a lot less important than in the previous example. On average, predictions on  $y$  underestimate vote share by only -1.083 percentage points

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<sup>14</sup>Quebec was over-represented among battlegrounds between 1979 and 1984, as it formed 43.53% of this group but only 26.60% of total ridings. The only Progressive-Conservative stronghold during the years 1979-1984 was Joliette, where Roch Lasalle had a long career as a federal MP and even became Mulroney's Public Works minister in 1984.

with a standard deviation of 7.369. Figure 3 illustrates the concentration of districts around the estimated slope. It also shows how, despite the systematic loss of support across the board, the LPC has been able to keep a solid base of districts during this darker period for the party.

(Figure 3 about here)

As figure 3 illustrates, a majority of Liberal non-competitive strongholds did not suffer from the general loss of support between 2004 and 2008. Some of them are indeed situated far away from the estimated slope. It is worth noting that there is also a concentration of under-performing districts below the trend line, which shows how some districts have lost up to 20 percentage points over four years. The LPC could count on 58 strongholds between 2004 and 2008. The bulk of these districts are in Ontario (33) though Quebec and the Maritimes are also well represented.

It is interesting to compare figure 2 and 3. The dispersion of districts around the estimate slope is almost three times less important in the LPC example than in the PCC one. The Liberals managed to do poorly, but systematically poorly, while the Progressive-Conservatives perform extremely well but were never able to stabilize their support. History will tell us what outcome is the most damaging.

In this section we have presented our new classification in the context of local electoral politics. By taking into account the dynamic dimension of elections, we can overcome some of the difficulties associated with available measures, and improve our understanding of group support in Canadian electoral politics. Most of the study conducted on the link between voters and electoral outcomes have made use of survey data. Work by the Canadian Election Study (Johnston et al. 1992; Blais et al. 2002) is essential to our understanding of how Canadians vote, but a meso-level analysis like ours sheds a different light on election by highlighting the stability of certain relationships. The two approaches are thus complementary. In subsection 4.4, we look at a second example related to political participation in Canada, using our measure of stability on the right-hand side of the equation.

## 4.4 Competitiveness and Turnout

Our new typology of electoral districts can also illustrate how party competitiveness at the district level affects voter turnout in SMP systems. For the sake of simplicity, we limit our analysis to the last three federal general elections (2004, 2006 and 2008) in Canada. We estimate a parsimonious model where closeness of the race and party support stability are tested simultaneously. The literature on voter turnout in SMP systems is rich, both in comparative and Canadian politics. Blais (2006) and Geys (2006) offer exhaustive reviews of the relevant research on the topic. They both describe how electoral institutions and competition matter in different contexts. Institutional effects are of small interest here since all 308 districts in Canada share the same electoral system and party finance rules, with similar party organizations. However, electoral competitiveness varies across districts. The hypothesis here is that we should observe an increase in turnout when elections are competitive at the local level.

Geys (2006) is particularly interesting to our project since his review focuses on aggregate-level predictors of political participation. He finds that electoral competition (or closeness) seems to be significantly correlated to turnout, but acknowledges that there is also a solid body of literature supporting the opposite. Among those studies which support the hypothesis, two causal mechanisms are generally proposed: (1) rational choice theorists argue that voters change their behaviour when they perceived a change in the likelihood of casting a decisive ballot, as leading parties get closer in terms of vote share (Downs 1957; Riker and Ordeshook 1968), while (2) resource model advocates that the political and economic elite invests more money and time in campaign events and advertising when an election is hotly contested, bringing voters to the polls in greater number (Key 1949; Cox and Munger 1989; Berch 1993).

The individual-level literature is also of interest. Blais (2006) suggests that turnout should be higher in competitive districts since “voters have more options to choose from (118).” More choice means a higher likelihood of finding a party close to one’s preferences, and, hence, more chance for voters to feel a desire to see a party win. Interestingly, empirical findings tend to suggest that fractionalization of the electoral choice depresses

turnout instead<sup>15</sup>. However, these empirical analyses are mostly conducted at the national level under the assumption that party competition is similar all over the country. But there are exceptions. Matsusaka and Palda (1993, 1999) make use of a multi-level model and conclude that, even though electoral competition is associated with turnout percentages at the district level, the relationship seems to disappear at the individual level. For their part, Johnston, Matthews and Bittner (2007) test for a differentiated effect for new eligible voters and find that competition (in the form of Endersby et al.’s competitiveness index) matters exclusively for that demographic.

Our model makes use of district-level data only. We include Endersby et al.’s measure of closeness and our measure of party support stability. We also opt for a change model covering three elections from 2004 to 2008. A change model is superior for three reasons. First, we prefer to think of district-level turnout as a process over a longer period of time, instead of a static phenomenon. We believe that contextual factors ought to have a cumulative impact on voters’ behaviour and looking at our data over three elections is the best way to tackle this reality. Second, most of our regressors are constant across time, making panel estimation problematic (Frees 2004). Finally, turnout has been declining in Canada over the last few decades (Blais et al. 2002). Knowing this, it is important to purge our data from non-stationarity and a change model is the simplest way to achieve this.<sup>16</sup> Formally, our dependent variable is as follows:

$$(5) \quad \Delta\%Turnout = \%Turnout_{(2008)} - \%Turnout_{(2004)}$$

Our turnout model includes one level variable, two measures of competitiveness (closeness and stability), and a series of regional dummies. We include turnout level in 2004 since districts which begin with higher levels of turnout in 2004 might have less space for increase over time, meaning  $\beta_1$  should be negative. We also include a series of dummies to control for regional differences. Ontario is the region of reference. We include Endersby et al.’s competitiveness index (CI), where  $k$  equals  $ENP$ , to test if a more

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<sup>15</sup>See for example Jackman (1987), Blais and Dobrzynska (1998), and Franklin (2004). This list is far from exhaustive.

<sup>16</sup>See chapter 10 to 12 of Wooldridge (2000) for a comprehensive coverage of this issue.

heated contest among the main challengers increases turnout.<sup>17</sup> We expect the relation to be positive, in line with Endersby et al’s findings about the 1993 and 1997 elections. Since CI varies across elections, we opt for the median of the these three elections. This strategy has its limits, but is a sensible compromise since within each riding the variation across time is manageable ( $\sigma_{CI} = 0.154$ ).

The second dimension of competition that might affect turnout is party support stability. We include a dichotomous variable that takes the value 1 if a district is a battleground and 0 otherwise. We expect its coefficient, ( $\beta_7$ ), to be positive, as more uncertainty about which party is going to win should create an incentive for voters to go to the polls. We also include an interaction term between the two measures of competitiveness to see if a closer contest has a greater effect on turnout in battlegrounds than in strongholds. We again expect a positive relationship. All the continuous variables have been mean-centred so that the intercept,  $\beta_0$ , equals the variation in turnout between 2004 and 2006 in Ontario’s strongholds, controlling for all other factors. Formally the (linear) model is:

$$\begin{aligned}
 \Delta\%Turnout = & \beta_{(0)} + \beta_1\%Turnout_{(2004)} + \\
 (6) \quad & \beta_2Maritimes + \beta_3Quebec + \beta_4Prairies + \\
 & \beta_5(BC + Territories) + \beta_6CI_{ENP} + \\
 & \beta_7Battleground + \beta_8(CI_{ENP} \times Battleground)
 \end{aligned}$$

We estimate four models in order to follow the evolution of estimates as new covariates are added. Model 1 includes control variables and CI while model 2 includes control variables and Battleground only. Model 3 adds both measures of competitiveness to see how  $\hat{\beta}_6$ ,  $\hat{\beta}_7$ ,  $\hat{\sigma}_{\hat{\beta}_6}$  and  $\hat{\sigma}_{\hat{\beta}_7}$  behave when both measures are included. Since we believe that closeness of the race and stability are two different dimensions of competitiveness, we do not expect a major changes. We already know that party support stability and competitiveness are weakly correlated ( $\sigma_{(CI,Battle)}=0.233$  with a p-value of 0.656) but we still need to test whether these two measures show a joint effect on change in turnout. This is why model 4 adds the interaction between the two measures of competitiveness. If  $\hat{\beta}_8$  is found to be positive and statistically

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<sup>17</sup>Effective number of parties is not included in this model since Endersby et al’s competitiveness index incorporates ENP in its computation.

different from 0, that would suggest a larger electoral menu has more impact on turnout when there is party support instability. On the other hand, if  $\hat{\beta}_8$  is negative and significant, it would suggest that the effect of closeness of the race is mitigated by party support stability. Models are estimated using Ordinary Least Squares (OLS), with robust standard errors and 200 bootstrap replications.

(Table 5 about here)

$\beta_1$  is not significantly different from 0 at the usual levels of confidence. Also, we do find regional variation, as Quebec and the Maritimes seem to be less affected by decline in electoral participation than Ontario, controlling for other relevant factors. As expected, a closer race among leading parties does increase turnout by an average 0.499 percentage points for every 0.1 increases on the CI scale. Considering that CI ranges from 0.207 to 0.834, the magnitude of this coefficient is certainly non-trivial. Model 3 shows that taken alone, Battleground status increases turnout over this three-election cycles by 1.187 percentage points. Interestingly, the inclusion of CI and Battleground in model 3 does not alter significantly their respective effects (and their estimated standard errors) found in model 1 and 2. This is a good indication that measures of closeness and party support stability are, as argued earlier in this article, proximates for two very different concepts. Contrary to what was expected, our two measures of competitiveness do not increase turnout when interacted. What model 3 tells us is that the closeness of the race only has an impact on change in turnout when we find party support stability. The effect is, then, important. An increase of 0.1 on the CI scale increases turnout by 0.612 percentage points. In battlegrounds, where party support stability is low, the effect of closeness of the race disappears completely ( $\hat{\beta}_6 + \hat{\beta}_7 + \hat{\beta}_8 = 1.070$  with a p-value of 0.656).

This application of our original parametric typology to the study of turnout tells us two interesting stories about the multidimensional nature of competition. First, vote share data can be operationalized in multiple ways to explain different phenomena. CI and our measure of stability indeed make use of the same data but tell two different stories. One informs us about the impact of closeness on turnout at the local level while the other tells us how dynamic party support instability affects turnout, but also mitigates the impact of closeness. Secondly, as the regression estimates show,

two independent (i.e. orthogonal) dimensions of competitiveness have a significant impact on change in turnout, supporting our argument about the limits of static measures of competitiveness.

## 5 Conclusion

The objective of this article is to offer a new measure of competitiveness that improves the quantitative toolbox available in political science. Party Support Stability (PSS) is complementary to Laakso's Effective Number of Parties and Endersby et al.'s Competitiveness Index (CI) since it operationalizes the dynamic dimension of local electoral politics instead of looking only at the contemporary context. To illustrate the utility of this new measure, we have presented two applications in the Canadian context. However, PSS is easily exportable to other democratic polities, as long as the local district remains a significant unit of analysis. PS could also be a useful tool for all kinds of research questions – both related to electoral politics and otherwise. For example, one could test the impact of battleground status on the amount of money parties invest in preparation for an upcoming election. In a comparative framework, one could study the relative instability of political support in newly-established democracies relative to older democratic systems.

In the introduction, we stated that scholars of Canadian politics have invested a lot of energy in the study of voters and parties. This is also true in other countries and sub-disciplines. We hope that the development of new quantitative tools aimed at improving our understanding of contextual variables will prompt a resurgence of interest in the discipline for meso-level analysis. This new measure of competitiveness is a step in that direction. As the phrase cited in the introduction reminds us, incontestable facts about politics are sometimes too obvious to be acknowledged.

## Tables and Figures

Table 1: Five Fictional Electoral Districts

Dist	Elect	Party A	Party B	Party C	$ENP$	$CI_{ENP}$	Status
1	1st	<b>50%</b>	40%	10%	2.38	0.80	Battleground
	2nd	40%	<b>50%</b>	10%	2.38	0.80	
	3rd	<b>40%</b>	35%	25%	2.89	0.94	
2	1st	<b>60%</b>	30%	10%	2.17	0.72	Stronghold <sub>A</sub>
	2nd	<b>60%</b>	10%	30%	2.17	0.72	
	3rd	<b>60%</b>	30%	10%	2.17	0.72	
3	1st	<b>40%</b>	38%	22%	2.83	0.90	Battleground
	2nd	35%	<b>40%</b>	25%	2.89	0.94	
	3rd	30%	<b>42%</b>	28%	2.90	0.95	
4	1st	20%	28%	<b>52%</b>	2.57	0.78	Stronghold <sub>C</sub>
	2nd	25%	24%	<b>51%</b>	2.63	0.82	
	3rd	20%	25%	<b>55%</b>	2.46	0.55	
5	1st	<b>48%</b>	30%	22%	2.71	0.85	Stronghold <sub>A</sub>
	2nd	<b>49%</b>	24%	27%	2.69	0.85	
	3rd	<b>50%</b>	28%	22%	2.65	0.83	

Figure 1: Strongholds and Battlegrounds Over the Years

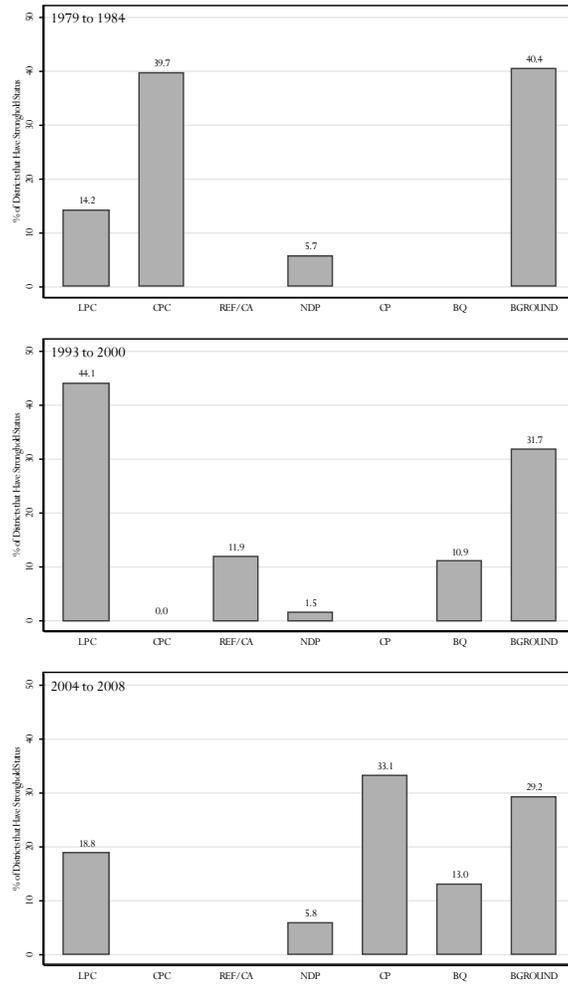


Table 2: Probit Estimates - Predictors of Strongholds

	(1)	(2)
	LPC	Cons
% Lone-Parent Family Quartiles	-0.0491 (0.0747)	-0.182** (0.0764)
% Unemployed Quartiles	0.258** (0.0850)	-0.431** (0.124)
% Jobs in Manufacturing Quartiles	0.151** (0.0514)	-0.203** (0.0822)
% Jobs in Primary Sector Quartiles	-0.223** (0.0893)	0.0675 (0.112)
% Allophones Quartiles	0.0689 (0.0792)	-0.0570 (0.0913)
% Francophones Quartiles	0.324** (0.133)	-0.407** (0.147)
4th Party System (I)	2.672** (0.893)	-2.291** (0.795)
4th Party System (II)	1.605** (0.491)	-1.109** (0.245)
$4th\ PS(I) \times \%Franco\ Q$	-0.613** (0.250)	
$4th\ PS(II) \times \%Franco\ Q$	-0.513** (0.153)	
$4th\ PS(I) \times \%Primary\ Q$		0.343** (0.145)
$4th\ PS(II) \times \%Primary\ Q$		0.335** (0.103)
Constant	-2.633** (0.418)	2.677** (0.457)
Observations	792	792
Pseudo $R^2$	0.186	0.335

Clustered standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$

Table 3: OLS Estimates - 1984 PCP Vote Share

	<b>Slope</b>
1979 PCP Vote Share	1.180
Observations	282
Residuals	$\mu = -8.189; \sigma = 19.271$

Figure 2: Progressive-Conservative Party: 1979-1984

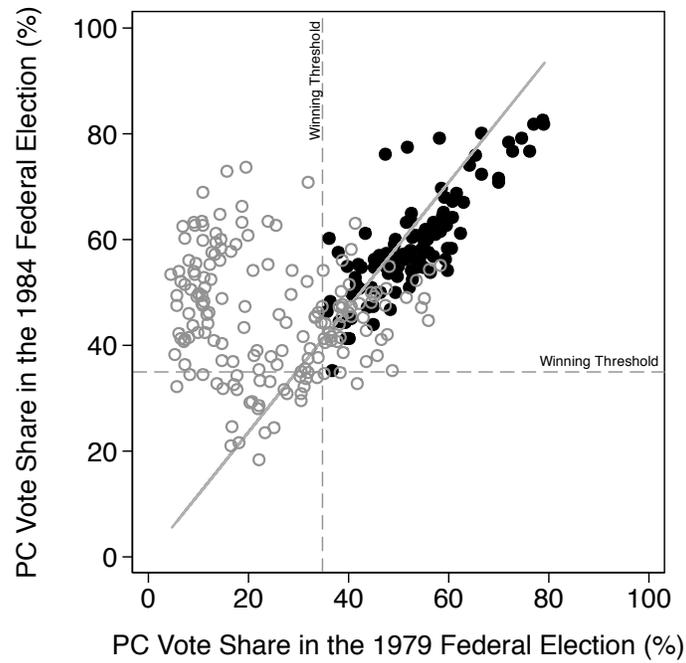


Table 4: OLS Estimates - 2008 Liberal Vote Share

	<b>Slope</b>
2004 Liberal Vote Share	0.751
Observations	307
Residuals	$\mu = -1.083; \sigma = 7.369$

Figure 3: Liberal Party: 2004-2008

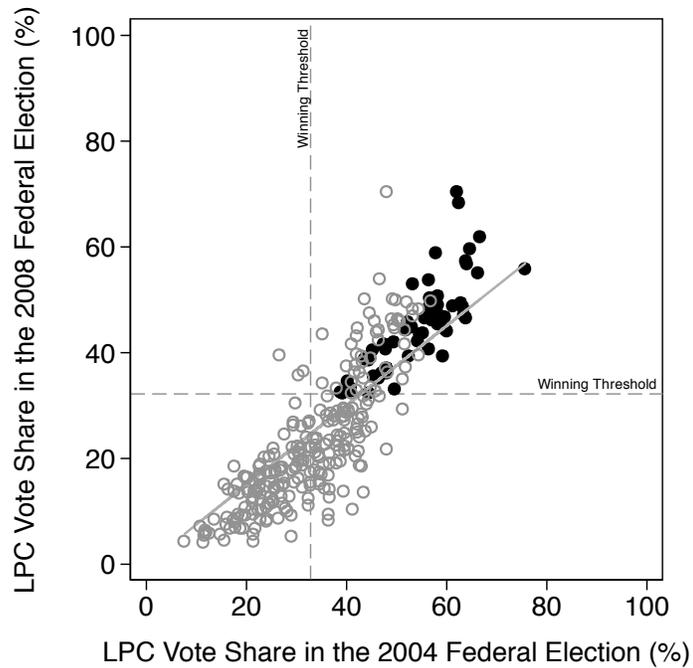


Table 5: OLS Estimates - Predictors of Change in Turnout

	(1)	(2)	(3)	(4)
% Turnout (2004)	-0.0491 (0.0447)	-0.0593 (0.0403)	-0.0468 (0.0447)	-0.0486 (0.0435)
Maritimes	2.054** (0.799)	2.193** (0.762)	1.895** (0.824)	2.150** (0.838)
Quebec	4.377** (0.486)	3.757** (0.402)	4.286** (0.491)	4.323** (0.488)
Prairies	-0.220 (0.567)	-0.544 (0.512)	-0.133 (0.562)	-0.00488 (0.552)
BC + Territory	0.0953 (0.374)	0.231 (0.326)	0.140 (0.340)	0.180 (0.332)
$CI_{ENP}$	4.997** (1.603)		4.417** (1.616)	6.127** (1.582)
Battleground		1.187** (0.321)	1.000** (0.329)	1.139** (0.330)
$CI_{ENP} \times Battleground$				-6.196** (2.203)
Constant	-3.203** (0.206)	-3.372** (0.199)	-3.478** (0.217)	-3.510** (0.215)
Observations	308	308	308	308
Adjusted $R^2$	0.295	0.288	0.310	0.320

Robust standard errors in parentheses

Bootstrap: 200 replications

\*  $p < 0.10$ , \*\*  $p < 0.05$

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