

RESEARCH ARTICLE

Influences on the Number and Gender of Candidates in Canadian Local Elections

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Abstract

We explore influences on the number of candidates, and female candidates in particular, who contest mayoral elections in Canada. We draw on an original cross-national data set of election results from mayoral elections in Canada's 100 largest cities between 2006 and 2017. An average of 4.96 candidates contested mayoral elections in this period, and 16 per cent of all candidates were women. Density and mayoral prestige were related to higher numbers of candidates; in contrast, incumbent candidates and the availability of other elected positions were related to lower numbers. Notably, the presence of a female incumbent was related to higher numbers of women running for the position of mayor; in contrast, higher mayoral salaries were associated with an increase in the number of male but not female candidates. This analysis enhances our understanding of the factors underlying contested local elections, as well as the factors that appear to facilitate women contesting local elections.

Résumé

L'objectif de cet article est d'explorer les facteurs susceptibles d'influencer le nombre de candidats, et plus précisément de candidates, qui se présentent aux élections municipales au Canada. À partir d'une base de données portant sur les élections à la mairie au sein des 100 plus grandes villes du Canada entre 2006 et 2017, nous montrons qu'en moyenne, au cours de cette période, 4,96 candidats se sont présentés aux élections municipales. De plus, parmi l'ensemble des candidats, 16 per cent d'entre eux étaient des femmes. Deux facteurs contribuent à expliquer en partie la présence d'un nombre plus élevé de candidats : la densité de la population d'une part et le prestige du poste d'autre part. Deux facteurs contribuent également à expliquer un nombre plus faible de candidats : la présence de candidat sortant et la présence d'autres postes électifs à pourvoir. Plus encore, selon le sexe des candidats, des distinctions apparaissent : les candidates sont plus susceptibles de se présenter si le candidat sortant est une femme. Les salaires contribuent également à augmenter le nombre de candidats, mais pas de candidates. Cette analyse permet donc d'affiner notre compréhension des joutes électorales à la mairie, ainsi que d'identifier certains facteurs qui semblent influencer la présence de candidates.

Introduction

Mayoral elections held in Canadian cities between 2006 and 2017 exhibited substantial variation. For example: the race for mayor of the mega-city of Toronto, Ontario, in 2014 had 64 registered candidates, of whom only 5 were women. In contrast, the 2008 mayoral election in Surrey, British Columbia, was contested by only two candidates, a woman and a man. Finally, the 2009 mayoral election in Lévis, Quebec, resulted in the acclamation of the race's single candidate, who was a woman. These three examples demonstrate how the dynamics of mayoral races in Canadian cities, particularly with respect to the number of candidates and their gender, can vary significantly. The diverse institutional and socio-demographic contexts of these municipal settings suggest that this variation in local electoral dynamics can be systematically explained.

In this article, we seek to do just that. We draw on an original and comprehensive data set of Canadian local election results to address three research questions. First, how many candidates contest mayoral races in Canadian cities, and what proportion of these candidates are women? Second, what factors influence the number of candidates who run in mayoral races? Finally, what factors differentially influence the number of female and male candidates who run in local mayoral elections? We demonstrate that socio-demographic and institutional factors influence both the total number of candidates in mayoral races and the number of women who decide to contest these elections.

Studying the number of candidates who contest office at the local level provides a glimpse into the competitiveness and thus the democratic health of Canadian local politics. Low numbers of candidates may indicate that local politics is dominated by municipal electoral machines that disallow challengers; that citizens are not engaged with local politics or find the functions of local government to be unimportant; or, that citizens have a low sense of external efficacy that translates into the sense that they cannot affect what occurs in local government (see, for example, Trounstein, 2008). Low numbers of candidates may also deprive voters of any real choices and may further alienate them from local politics. Low numbers of candidates may also indicate that local democratic health is poor. In contrast, a healthy roster of candidates for voters to choose from may indicate a vibrant local democracy. Our exploration of the number of candidates who run for local office addresses this important democratic concern, and we begin with cautionary studies that note a relatively high number of acclamations in local mayoral elections in Canada (for example, Champagne and Patry, 2004; Couture, 2015).

In addition, this article contributes to an overall understanding of the socio-demographic and institutional conditions that shape the decisions of women to run for local public office. The historic under-representation of women as elected officials in Canada has important democratic implications. Feminist critics in particular have argued that elected bodies cannot be fully representative of the populations they are tasked to serve when only a small proportion of their members are women (for example, Andrew *et al.*, 2008). Furthermore, a substantial body of literature demonstrates that higher proportions of women in representative bodies have implications for the nature of debate and policy making as well as the policy outputs that result (for example, Barnes, 2016; Volden *et al.*, 2013).

Women are often thought to enjoy a “municipal advantage,” by which it is meant that women are more likely to be elected at lower than at higher levels of Canadian government; however, Tolley (2011) casts doubt on this proposition. The general though contested view (see, for example, Fulton, 2012) is that men and women perform equally well when they are official candidates (for example, Anzia and Berry, 2011; Fox and Lawless, 2004), but the lower number of women who contest mayoral seats therefore leads to a lower overall number of women holding these positions (Federation of Canadian Municipalities, 2017). Therefore, it is important to understand the conditions under which women are more or less likely to contest these public offices as an essential prerequisite to understanding the underrepresentation of women and other equality-seeking groups in Canadian governments. Our analysis, in contrast to accounts that emphasize obstacles to womens’ access to elected office, contributes to an understanding of the ‘supply side’ of the problem by emphasizing the institutional, socio-demographic and individual correlates of womens’ candidacies in mayoral elections.

In addition, participation by female candidates in local races increases voter turnout, particularly among other women (for example, De Paolo et al., 2014). While this affect has been called into question in Canada (Breux et al., 2017; Couture et al., 2014), the prospect of higher turnout as a result of more women participating as candidates justifies a closer examination of the phenomenon of female candidates.

Finally, this analysis contributes to the development of a literature on Canadian municipal electoral politics that is cross national in scope and quantitative in its methodology. Studies of this nature have traditionally tended to focus on a single city or province, and these studies have produced a deeper understanding of these jurisdictions (see, for example, Moore et al., 2017). Pan-Canadian studies are, in contrast, much rarer (but see Breux and Couture, 2018; Lucas, 2017). Furthermore, with some exceptions (for example, Tolley, 2011), the exploration of the sex of candidates and gender issues in local Canadian government tends to focus on a single province or city (for example, Gavan-Koop and Smith, 2008; Mevellec and Tremblay, 2016), and the same is often true of the question of ethnic background (Andrew et al., 2008). This article contributes to the emerging broad, comparative, pan-national study of Canadian political behavior at the local level.

Running for mayor

Socio-demographic, institutional and individual factors all shape the number of candidates who contest elections. As Voda et al. note, “Candidacy is sometimes viewed as the supreme form of political participation” (2017: 26). Accordingly, the factors that shape the number of candidates in election campaigns are similar to those that shape political participation in general. Consistent with other analyses, we argue that both socio-demographic and institutional factors are likely to exercise some influence on the decision to contest elections and therefore must be considered together.

Socio-demographic factors refer to contextual, ecological characteristics of cities that are seen to be important to shaping the number of candidates that contest local office. These factors include the size of the local electorate, the density and degree of

cohesion of the community and the community's relative homogeneity or heterogeneity.

The size of the local electorate is an important variable in terms of explaining the number of candidates who contest local elections (see, for example, Frandsen, 2002). On one hand, quality candidates are less likely to be intimidated by the challenge of running in smaller population centres, and the face-to-face method of communication that characterizes campaigning in such communities is more likely to be familiar to potential candidates (Oliver, 2012). This should increase the number of candidates. On the other hand, fewer ambitious candidates are available in the small pools of such communities, which might mean that fewer candidates contest these races.

Tests of this relationship generally confirm that electorate size influences the number of candidates who run for office. In Europe especially, smaller municipalities often have difficulty generating candidates (for example, Rysavy and Bernard, 2013). The same is also true of Quebec elections (Champagne and Patry, 2004; Couture, 2015), and it appears equally applicable to the rest of Canada, where elections by acclamation remain a relatively common occurrence. Voda *et al.*, however, in a study of a municipal grouping in the Czech Republic, provide a contrasting result: the relative number of candidates in their study decreased along with increases in absolute population size (2017: 33).

The size of the electorate appears to affect the candidacies of men and women differently. Lightbody, for example, finds that "the city size itself (50,000 or more) produces no statistical difference" in the extent of male and female representation (2006: 190). In contrast, Carroll and Sanbonmatsu do find a relationship between city size and the sex of elected officials: the presence of women mayors is negatively related to the population of cities (2010: 6). This finding is surprising for several reasons. Populous cities, for example, may be less traditional than smaller population centres and therefore more open to electing women. Larger population centres are also likely to have organized groups of supporters who are willing to rally behind the presence of women in politics (Smith *et al.*, 2012). Substantiating these expectations, Lightbody finds that women candidates who run in districts tend to do better in more rather than less populous districts (2006: 190).

Higher density and greater heterogeneity are generally considered to be related to a decrease in community cohesion and a decline in local political participation. Studies that detect such results are based on the hypothesis that when there is an increase in new residents, electoral participation tends to be lower and may potentially discourage the participation of new political candidates (Voda *et al.*, 2017). Accordingly, density and heterogeneity are, like overall electorate size, thought to reduce the number of candidates who contest public office. At the same time, dense, diverse urban settings are likely to be ideal environments for the development of organizations to support political candidacies, particularly from local marginalized communities. Thus, density and heterogeneity may lead to more candidates. Finally, Lappie and Marshall (2018) have shed light on the extent to which a sense of place also matters when it comes to candidates. More precisely, the characteristics of place may make the mayoralty more attractive for potential candidates.

Institutional factors constitute the second set of factors that influence the number of candidates in municipal elections. Institutional factors relate to the systems of election and representation employed, including whether ward or at-large systems are used to elect candidates, the size of council relative to the overall population and whether municipal parties are present. These institutional factors do appear to shape potential candidates' decisions to run for office.

Canadians elect councillors in ward, at-large or mixed systems (see, for example, Koop, 2016). The influence of institutional factors on the number of candidates that run is gendered. As Crowder-Meyer et al. note, "while King (2002) presents evidence that districts benefit women, many others find no effect and a number of studies have shown that women make up a slightly larger share of city councils elected at-large" (2015: 5). Others show that women are more likely to run on a district level since these constitute smaller areas and are perceived as being "easier" to win than running at large (Smith et al., 2012).

Another element of the overall institutional environment of local elections that should be considered is the size of city council (Trimble and Arsiccott, 2003). According to Kjaer (2007), an increase in the number of seats to be filled may, in some cases, cause an increase in the number of candidates who run.

The attractiveness of the position of councillor is also likely to affect the number of candidates who decide to contest these positions. Desirability is related to the salary associated with the position as well as the duration of the mandate. Couture (2015) shows that incumbent mayors in Quebec are more likely to face challengers or to not run for re-election when salaries are higher. While there is a relationship between desirability and the number of candidates who run, these factors produce gendered results. Welch and Karnig (1978), for example, show that high salaries have a negative effect on the number of women holding mayoral positions. The duration of the mayor's mandate is also significant: Trounstein and Valdin (2008), for example, show that a three-year (rather than a four-year) mandate has a positive effect on the number of women on council.

A third institutional factor that affects the number of candidates is the presence or absence of local political parties. City elections in Canada tend to be characterized by nonpartisanship, although parties have formed and have helped shape electoral competition in several of the large cities in Quebec and British Columbia (Couture et al., 2018). In other cities, slates of candidates bound together by shared ideas are formed. Such coalitions, as well as nonpartisan rhetoric, may in fact mask informal linkages to party organizations (Sproule-Jones, 2007).

In Canada, the activity of parties varies from city to city. This variation provides an opportunity to compare systems of electoral competition with and without political parties. From a theoretical standpoint, political parties constitute a hurdle to candidates entering races since these candidates must first triumph in party primaries or nominations (Osborne and Slivinski, 1996). Well-established parties, through their organizational and informational capacities, play a crucial role in shaping who runs for office and who is subsequently successful. Furthermore, if parties are committed to greater diversity in the candidates they present to voters, then the presence of parties may lead to greater numbers of women successfully contesting public office (Spicer et al., 2017). In contrast, voters in nonpartisan elections exhibit a stronger preference for candidates with greater career experience, as

well as candidates who can successfully signal partisan or ideological affiliation without directly using labels (Kirkland and Coppock, 2017). More specifically, when the elector does not have a partisan attachment and the candidate's valence is constant, Fulton has shown that electors tend to "use candidate gender and character valence as a voting heuristic" (2014: 626).

The presence of incumbent candidates is directly related to the institutions that structure these elections. The presence of an incumbent candidate may discourage the arrival of new entrants into the political sphere, especially at the municipal level, in part because candidates cannot rely on party labels to assist them as first-time candidates within the low-information context of local politics (Breux and Bherer, 2011; Cutler and Matthews, 2005). Incumbent candidates therefore have the substantial benefit of already being known by electors, and challengers must cope with this disadvantage (Moore *et al.*, 2017; Siemiatycki, 2011). As De Benedetto *et al.* note, "... the strategic decision to stand as a challenger in an electoral contest is influenced by the characteristics of the incumbent" (2015: 23).

Finally, individual factors must be considered. Recent studies have established that candidate characteristics play an important role in shaping turnout (for example, De Benedetto *et al.*, 2015). Similarly, certain individual-level characteristics of potential candidates are important to determining whether those candidates ultimately decide to run for public office.

Sex is an important individual-level characteristic that exercises a direct influence on individuals' decision to contest public office. Getting into politics includes a recruitment phase. If recruitment efforts are directed at both men and women, the way in which such efforts are perceived is different. Butler and Preece find that "[women] believe this help often goes disproportionately to male recruits. The male respondents do not perceive there to be gender disparities in the extent of the support implied by recruitments" (2016: 843).

An argument often made to explain the lower proportion of elected women in local public office is that there are too few women in the "eligibility pool." For example, Fox and Lawless argue that there are "simply too few women occupy [ing] high-level positions in the professions that serve as pipelines to careers in politics" (2004: 265). Instead, women tend to hold employment types that are "less competitive," which makes them less likely to run for office. The reduced presence in the eligibility pool also makes it more difficult to raise the funds required to run for public office. However, Anzia and Berry (2011) remind us, based on Jenkins (2007), that female candidates generally raise the same amount of money as their male counterparts but that to achieve this, they have to work harder.

Additionally, women tend to perceive themselves as less qualified for public office. For example, Pruyzers and Blais demonstrate that young Canadian women tend to be "less politically ambitious than men of a similar age" (2017: 248). Men tend to have stronger political ambition than women, and women tend to feel less qualified for this type of function. This also partially explains why women are more likely to run for city councillor and generally wait to acquire more political experience before running for the position of mayor (Crowder-Meyer *et al.*, 2015). Consequently, women in office tend on average to outperform men (Anzia and Berry, 2011). Political ambition is not only a question of qualification but also a question of perceptions.

Some researchers have suggested that gender bias exists in the media treatment of candidates. Following Pruyers and Blais (2017), differences in political ambition can be partly explained by exposure to negative stereotypes about women in politics. Furthermore, women often encounter more resistance from their families than do men when they decide to run. Women also tend to be more concerned with raising their families before running for office. Women in politics are less likely to be married than their male counterparts and are less likely to have young children (Carroll and Sanbonmatsu, 2010).

Perceptions about women running for public office are also important to take into account when considering what a political career means for men and women and “how these perceptions limit political ambition” (Schneider et al., 2016: 12). These authors demonstrate “that political careers are seen as fulfilling power goals more than communal goals” (2015: 12) and that this could reduce women’s political ambitions. Mévellec and Tremblay (2016) point out that within their sample of mayors and mayors in Quebec, a “gendered” professionalization of the political career exists.

Potential candidates decide to run for local public office within the context of these factors. While socio-demographic factors change across cities and individual factors change across potential candidates, some general comments can be made about the common institutional-electoral characteristics potential candidates face in races for local office.

All Canadian cities share two institutional-electoral characteristics. First, mayoral candidates are elected in separate elections based on universal suffrage, a surprisingly presidential-style divergence from the parliamentary systems that characterize Canada’s national and provincial governments. Canadian city governments in this respect are closer to the “political city” model than the “administrative city” model (Frederickson and Johnson, 2001). Second, councillors are elected in all cities. Both the number of councillors and the means through which they are elected, however, differs depending on the city, with councillors elected at-large or in individual geographically defined wards (Koop and Kraemer, 2016).

Currently, the number of years between local elections is the same in all provinces: elections are held every four years. Several other officials are elected simultaneously with mayors and councillors. Among these are the positions of deputy mayor in Newfoundland and Labrador; hospital board members in New Brunswick; borough councillors or borough mayors for the cities of Sherbrooke and Montreal, Quebec; regional councillors in Ontario, the metropolitan regions of Windsor, Durham and Niagara Falls in particular; and commissioners for boards such as the Vancouver Board of Parks and Recreation.

Empirical Model and Hypotheses

Our analysis explores variation in two dependent variables: the total number of candidates who contest mayoral elections in Canada and the number of women who do so. The explanatory variables we expected to influence the number and gender of candidates in Canadian municipal elections fell into two groups: socio-demographic and institutional. At the heart of each of these two sets of variables is the presence of a weak informational context¹ that characterizes Canadian municipal politics.

We explore the effects of two socio-demographic variables, population and population density, on the number of candidates that run in Canadian local elections:

ΔPOP: We hypothesize, based on previous findings in the literature, that population is positively related to the number of candidates present. Similarly, we hypothesize that the number of female candidates who run would increase in larger population centres.

Density: The positive influence of density on electoral participation (Tavares and Carr, 2012) led us to suspect that potential candidates would more positively assess the prospects of running for office in denser rather than more sparse urban settings, since voter mobilization (particularly through local organizations) would be perceived as less difficult within the context of such settings. Consequently, we hypothesize that a dense setting would encourage the number of candidates in the running.

The second set of independent variables we explored were institutional in nature. These variables relate to both the institutions that structure local elections as well as characteristics of these local races.

Lag number and gender of candidates: We hypothesize that the number of candidates who ran in the previous election would be positively associated with the number of candidates in the new election. Also, a more competitive political scene would encourage more candidates to run for office. The numbers of female and male candidates in the previous election were included as separate independent variables, and we hypothesize that the presence of female candidates in previous elections would indicate that more women would run in subsequent campaigns.

Lag victory margins: We hypothesize that the winning margin of the incumbent mayor in the previous election would be negatively correlated with the number of candidates. Mayors who achieved a strong margin in the previous election would likely intimidate future challengers.

Councillor by population: This variable refers to the city population divided by the number of councillors elected, which provides an approximation of the population each councillor is responsible for. If the number of potential candidates remains static, then a reduction in the number of seats available should produce an increase in the overall number of candidates. We therefore expect that, the fewer positions, the more candidates would be interested in each position.

Other elected officials: This variable indicates whether other elected officials such as mayors and school board trustees are elected alongside mayors and councillors. Using the same logic employed above, we hypothesize that no other elected officials would increase the number of ambitious candidates who crowd into competition for the few councillors seats that are available to contest.

Party system: When parties are present, they regulate the entry point of credible candidates into the political process. Where parties are not present, in contrast, an important obstacle to entry is removed and the number of candidates should therefore increase. Thus, we hypothesize that the presence of political parties would reduce the number of candidates as political parties constitute a barrier to the entry of candidates. Notably, however, parties' selection processes might specifically privilege women, so we expect the number of women who run to be higher in the presence of parties.

Incumbent and woman incumbent: It is well established in the scholarly literature that the presence of incumbent candidates tends to discourage candidates from running, resulting in a lower overall number of candidates. In our study, a separate binary variable summarizing whether the incumbent is a woman was also included. While an incumbent may drive down the overall number of candidates, we suspect on the basis of related research that a female incumbent may have a role-model effect that would lead to an increase in the number of subsequent female candidates.

Terms in office: It is also well established that incumbent candidates can lead to political monopolies, discouraging potential challengers (for example, Trounstein, 2008). However, time in office could lead to voter weariness with incumbent mayors, and therefore to an increase in the number of challengers. We expect an incumbent candidate with several terms in office to have a curvilinear effect on the number of candidates who contest seats.

Wage and public expenditures: Both of these variables relate to the attractiveness of the position of councillors. We expect that the position of councillor would become more attractive with higher pay and would become more prestigious with higher levels of public expenditure. We expect that both pay and expenditures would be positively related to the number of candidates who run. However, differences in female and male candidates' motivations for contesting public office might lead to gendered differences in how this variable influences the number of women and men who run.

Methodology

In this project, we drew on a unique national database of Canadian municipal election results which is, to our knowledge, the first exercise of its kind in Canada. This database contains electoral, institutional and socio-demographic data on Canada's 100 largest cities between 2006 and 2017. Only the province of Prince Edward Island had no city on the list. Most of the municipalities were concentrated in three provinces: Ontario, Quebec and British Columbia. The smallest of these municipalities is Cornwall, Ontario, with a population of 46,340; the largest is Toronto with 2,615,060 inhabitants. We gathered the electoral data of these Canadian municipalities for the last three local elections between 2006 and 2017.

Table 1 presents the distribution of frequencies for the number of all mayoral candidates—male and female—in the 100 largest Canadian cities between 2006

Table 1. Frequency of Numbers of Mayoral Candidates

Number of Mayoral Candidates	Number of Municipalities	Percentage
1	10	3.3
2	60	20.0
3	62	20.7
4	54	18.0
5	39	13.0
6	22	7.3
7	16	5.3
8	10	3.3
9	6	2.0
10	4	1.3
11	1	0.3
12	3	1.0
14	1	0.3
15	6	2.0
17	1	0.3
20	1	0.3
38	1	0.3
40	1	0.3
64	1	0.3
Total	300	100.0

and 2017. The number of candidates in Canadian municipal elections varied widely. Notably, we found 10 cases of election by acclamation for the mayoral position. Overall, 20.0 per cent of elections had two candidates in the running, 20.7 per cent had three and 18.0 per cent had four. However, 114 elections had five candidates or more. Toronto, Canada's most populous city, had the three highest incidences with 64, 40 and 38 candidates for mayor, respectively. On average, there were 4.96 candidates in these races, and the median was 4 candidates.

To what extent do women contest mayoral races? [Table 2](#) presents the distribution of the number of women who ran for mayor in the study period. Of all 1,491 mayoral candidates included in our data set, only 234 or 15.69 per cent were women. Furthermore, we found that 131 elections were held without a single female candidate in the running. This represents 43.7 per cent of the elections studied in the 100 largest Canadian cities: just under half of all mayoral elections in Canada between 2006 and 2017 had no women running for the position. This must be viewed as a problematic outcome with respect to the representation of women in elected office.

Additionally, 121 elections had one woman in the running, which represents 40.3 per cent of the cases studied. However, 35 elections had two women running and 13 elections had 3 women or more women in the local mayoral race.

[Table 3](#) presents descriptive statistics for our explanatory variables. We noted significant variation for most of these variables. This was especially the case with municipal expenditures per capita, which varied between \$708.28 in Ajax and \$4,428.18 in Thunder Bay. The average was \$1,771.52 and the median was \$1,619.52. The same was true for the mayor's salary. The lowest salaries were \$36,757 in New Westminster, British Columbia; \$36,968 in Fredericton, New-Brunswick; and \$38,000 in Saint John, New-Brunswick. The highest salaries

Table 2. Frequencies of Number of Female Mayoral Candidates

Number of female candidates	Number of municipalities	Percentage
0	131	43.7
1	121	40.3
2	35	11.7
3	10	3.3
4	2	0.7
5	1	0.3
Total	300	100.0

Table 3. Independent Variables Descriptive Analysis

Variables	Minimum	Maximum	Mean	SD
Lag number of mayoral candidates	1	44	4.54	4.59
Lag number of women candidates	0	4	0.69	0.81
Lag number of men candidates	0	42	3.85	3.35
Δ POP (%)	-8.25	71.39	7.42	9.12
Lag victory margins	0.0004	100.00	30.62	26.27
Log density	-0.10	3.72	2.77	0.58
Incumbent	0	1	0.77	0.42
Three or more terms in office	0	1	0.24	0.43
Woman Incumbent	0	1	0.17	0.37
Wage (1 per \$10,000)	33.08	185.14	89.58	32.10
Spending per capita (1 per \$1,000)	0.71	4.43	1.77	0.73
Councillors/POP (1 per 10,000)	0.10	2.78	0.95	0.59
Other elected officials	0	1	0.39	0.49
Party system	0	1	0.21	0.41
Alberta	0	1	0.09	0.29
British Columbia	0	1	0.19	0.39
Quebec	0	1	0.20	0.40
Other provinces	0	1	0.09	0.29

were \$185,137 in Mississauga, Ontario, and \$181,813 in Montreal, Quebec. On average, mayors earned \$89,580.

Our dependent variable was the number of candidates for mayoral elections in each city, which we then subsequently divided into women and men. While this variable was discrete and positive, it was also asymmetrically balanced to the right. A higher number of candidates in the running was rare, whereas the presence of just a few candidates was much more common. We therefore modelled the effect of our variables using both negative binomial regression and Poisson regression. These methods are appropriate for estimating count variables. Poisson regression is recommended when the average of the dependent variable is equal to the median. If this is not the case, the negative binomial regression is more appropriate. We therefore used Poisson regression to estimate the number of women candidates and negative binomial for the number of men running as candidates for mayor. Additionally, we used a zero-truncated negative binomial regression model to analyze the determinants of the total number of candidates for office because there were 0 cases in which no candidates ran for mayor.

In terms of our method of data analysis, the panel consisted of three elections in 100 municipalities for a total of 300 observations. This research design may have affected the error terms of our estimates. We therefore controlled for the presence of autocorrelation and heteroscedasticity that could contaminate the statistical significance of our estimates. To correct these estimates, we opted for a variance–covariance matrix of the estimator (VCE) cluster–robust standard errors model. Additionally, we also introduced into the model a dummy variable for the level of election (first election = reference) and fixed effects for the provinces (Ontario = reference) to control for contextual factors that were not included in our analysis but that might affect the number of candidates running for mayor.

Results

Table 4 presents the results of the regression analysis for the number of candidates that contest mayoral elections. It is divided into three models. Model A presents the results of the number of candidates for mayor (men and women). Model B presents the results only for the number of women candidates. Finally, model C presents the estimates for the number of men.

First, we consider model A to identify the determinants of electoral competitiveness in large Canadian cities. Several variables reached conventional levels of statistical significance. The lag dependent variable is associated significantly with the number of candidates, regardless of gender. More precisely, the number of candidates in the previous election is associated with the number of candidates in the present election. The marginal effect (Dy/Dx) shows that one more candidate in the previous election is associated with an increase of 0.15 candidates in the present election. This effect was 0.14 for female and 0.18 for male candidates.

In terms of socio-demographic determinants, population density was expressed logarithmically and is positively associated with the number of candidates. This means that the more densely populated a city, the greater the number of citizens in the running for the position of mayor. This relationship is significant, with a threshold of 5 per cent. However, models B and C show that this relationship is only significant for the number of men running as candidates. The number of women who contest mayoral elections does not appear to be affected by the density of the city in which they were running.

The presence of an incumbent mayor in the race influences the number of candidates. This relationship is significant, with a threshold of one per 1,000 in model C. In fact, the presence of an incumbent candidate reduces the number of candidacies by 1.71 (Dy/Dx) (Table 4). This relationship is the same for both men and women. Both women and men were similarly dissuaded from contesting public office when an incumbent mayor was in the race. The presence of an incumbent candidate reduces the number of female candidacies by 0.38 and male candidacies by 1.29.

One variable exercises an influence on the number of women, but not men, who ran for mayoral positions. Model C demonstrates that the presence of a woman incumbent candidate did not affect the overall number of male candidates in the race. But, as shown in Model B, this factor did appear to affect the number of women who contested the seat. The presence of an incumbent female candidate

Table 4. Regression Models with R.C.V.E.

Dependent variable	A) Number of mayoral candidates		B) Number of women		C) Number of men	
	Zero-truncated negative binomial regression		Poisson regression		Negative binomial regression	
	Coef. (SE)	Dy/DX	Coef. (SE)	Dy/DX	Coef. (SE)	Dy/DX
Constant	1.21*** (0.27)	–	–0.33 (0.56)	–	0.93** (0.29)	–
<i>Independent variables</i>						
Lag dependent variable	0.04*** (0.004)	0.15	0.20** (0.06)	0.14	0.04*** (0.01)	0.18
Lag margins victory	–0.01 (0.001)	n.s.	–0.00 (0.000)	n.s.	–0.01 (0.01)	n.s.
ΔPOP (%)	–0.01 (0.003)	n.s.	–0.01 (0.01)	n.s.	–0.004 (0.003)	n.s.
Log Density	0.12* (0.05)	0.49	0.14 (0.12)	n.s.	0.12* (0.06)	0.36
Incumbent	–0.37*** (0.06)	–1.71	–0.49*** (0.14)	–0.38	–0.33*** (0.06)	–1.29
three or more terms in office	0.12 (0.08)	n.s.	0.08 (0.15)	n.s.	0.09 (0.11)	n.s.
Women incumbent	0.01 (0.09)	n.s.	0.64*** (0.13)	0.54	–0.18 (0.11)	n.s.
Wage (1 per \$10,000)	0.04** (0.01)	0.16	–0.004 (0.02)	n.s.	0.04** (0.01)	0.13
Spending per capita (1 per \$1,000)	0.10** (0.03)	0.23	0.18** (0.06)	0.12	0.08* (0.03)	0.15
Councillors/POP (1 per 10,000)	–0.30** (0.09)	–1.22	–0.49** (0.18)	–0.31	–0.22* (0.09)	–0.90
Others elected officials	–0.19** (0.07)	–0.76	–0.11 (0.13)	n.s.	–0.20** (0.07)	–0.46
Party system	–0.08 (0.12)	n.s.	0.02 (0.25)	n.s.	–0.09 (0.11)	n.s.
Second election	0.10 (0.07)	n.s.	–0.06 (0.14)	n.s.	0.11 (0.07)	n.s.
Third election	0.09 (0.07)	n.s.	–0.03 (0.14)	n.s.	0.09 (0.07)	n.s.
Alberta	–0.38** (0.15)	–1.37	–0.03 (0.20)	n.s.	–0.43* (0.18)	–1.31
BC	–0.24* (0.10)	–0.95	–0.18 (0.21)	n.s.	–0.23** (0.09)	–0.86
Quebec	–0.31* (0.14)	–1.17	0.03 (0.29)	n.s.	–0.36** (0.13)	–1.29
Other provinces	–0.46*** (0.10)	–1.59	–0.05 (0.18)	n.s.	–0.47*** (0.11)	–1.14
N	(300)		(300)		(300)	
Cluster	100		100		100	
Log Pseudo-likelihood	–697.11		–310.33		–588.74	
Wald Chi-square	910.01***		107.64***		767.72***	
Pseudo R ²	0.30		0.10		0.19	

*p < 0.05 ; **p < 0.01 ; ***p < 0.001

increased the number of female candidacies by 0.54, as shown in the marginal effects (Dy/Dx) in [Table 4](#).

Mayoral salary exercises a statistically significant effect on the number of candidates in mayoral races. For each increase of \$10,000 in salary, there is a 0.16 increase in the number of candidates. The attractiveness of mayoral positions, as evidenced by their salary, exercises a significant positive effect on the number of candidates who sought the position. This effect, however, was differentiated by sex. Models B and C show that this effect exists for men but not women.

Similarly, public expenditures also exercise an effect on the number of candidates who ran. As hypothesized, the relationship is positive. As public expenditures increase, so too does the number of candidates who contested city office. For each increase of \$1,000 in public expenditures per capita, the number of candidates increases by 0.23. This relationship is significant with a threshold of 1 per cent and holds true regardless of gender. For each additional \$1,000 of public expenditures per inhabitant, we observe an increase of 0.12 candidates for women and 0.15 for men.

We also found that several institutional variables exercise an influence on the number of candidates who contest mayoral elections. First, the total number of councillor positions present is negatively associated with the number of candidates running for the mayoral position. In fact, an increase of one councillor position per 10,000 inhabitants reduces the number of candidates running for mayor by 1.22. This relationship is significant, with a threshold of 1 per cent. This was true for both genders according to models B and C. For each increase in the number of councillor per 10,000 inhabitants, there is a decrease of 0.31 in female candidates and of 0.90 in male candidates. Furthermore, the presence of other elected positions aside from councillor and mayor during an election influences the number of candidates. This effect reduces the number of candidates by 0.76. As shown in model C, however, this relationship is only significant for the number of men running as candidates. More precisely, the number of men was reduced by 0.46 in this context.

We revisited several of our findings regarding similarities and differences in how our explanatory factors explain the number of women and men who ran for mayor. Several explanatory variables produced statistically significant effects that are similar for both women and men. The presence of an incumbent candidate reduces the number of both male and female candidates. There is a reduction of 0.31 for women and 1.65 for men. The same is also true for per capita public expenditures. We also found a similar relationship in terms of the number of councillors per inhabitant.

Our analysis also uncovered statistically significant effects that shaped the number of female and male candidates differently. Population density, for example, only affects male candidates; density had no statistically significant effect on the number of female candidates running for office.

Of crucial importance, the number of female candidates is higher when the incumbent candidate is female. This means that women are more likely to run for office when the mayoral incumbent is a woman. [Figure 1](#) shows a plot of the interaction effect between the presence of an incumbent seeking re-election (divided into male and female incumbents) with the number of female candidates.

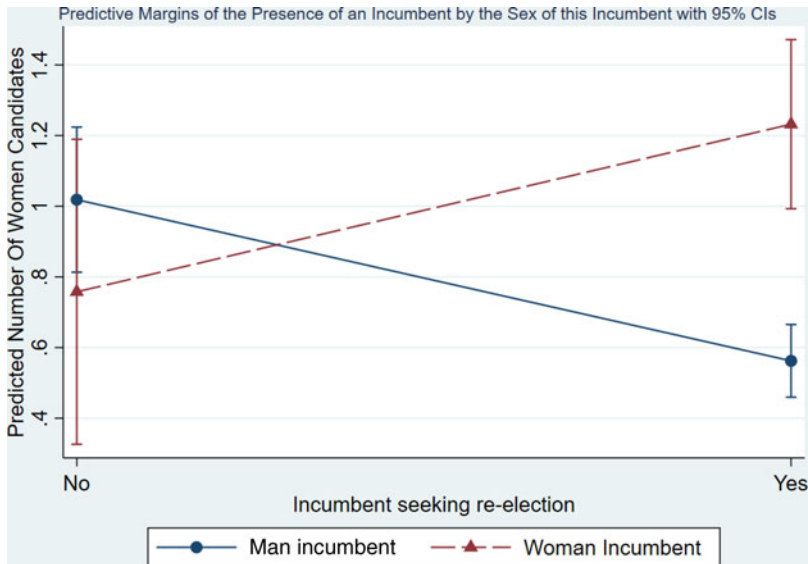


Figure 1. Predictive margins of the presence of an incumbent by the sex of this incumbent with 95% confidence intervals.

Clearly, women were more likely to run for office when the incumbent mayor was a woman.

Discussion

We address three research questions in this article. First, how many candidates contest mayoral races in Canadian cities, and what proportion of these candidates are women? We found that an average of 4.96 candidates ran in all Canadian mayoral elections between 2006 and 2017. While acclamations for the position of mayor are still a reality of local politics in Canada, we found a relatively small incidence of this phenomenon: only 3.3 per cent of all races examined in Canadian cities had an acclaimed mayoral candidate. This finding is a positive indicator of the health of local democracy in Canada.

Our findings with respect to women who ran for mayor are far less encouraging. In total, only 15.69 per cent of candidates who contested mayoral races between 2006 and 2017 were women. Further still, just under half of all mayoral races in our sample (43.3%) had no female candidates whatsoever. Despite the perception of local politics as being comparably receptive to participation by women candidates, the reality of local politics in Canada is that close to half of all mayoral elections include no women candidates, thereby depriving voters of the option of voting for a woman mayor.

Second, what factors influence the number of candidates who run in mayoral races? We found that dense urban settings led to more candidates contesting the mayoral position; in contrast, the presence of an incumbent mayor discouraged

challengers and, accordingly, depressed the total number of candidates. The prestige of the position—as measured by the wage of mayors and the per capita spending of the city—was positively related to the number of candidates who contest the seat. As was expected, more prestigious mayoral positions encouraged greater competition. Both the presence of more councillors relative to the population and other elected officials drove down the number of mayoral candidates. As we hypothesized, the availability of other elected offices meant that fewer candidates contested the position of mayor. All of these findings, including the directions of the coefficients, confirm our hypotheses and are theoretically justifiable.

We suspect that the role of density in increasing the number of candidates present in mayoral races relates to the low informational context of Canadian municipal politics. Canadians generally have less information about local than about federal or provincial election campaigns, and the absence of local parties in most cities aggravates this problem. However, our findings suggest that information may be both better communicated and easier to access in dense urban settings than in less concentrated municipalities. Denser settings are more likely to host specific locally focused media, which might help to explain this trend. Notably, however, density did not have a significant effect on the number of female candidates. Future research may explore other elements that shape a candidate's decision to run for office such as the influence of stereotypes and group composition (Trounstein and Valdini, 2008).

Finally, what factors differentially influence the number of female and male candidates who run in local mayoral elections? Women but not men were more likely to run when a female incumbent was present, confirming extant research that finds that the profile of female incumbents may affect the types of candidates who subsequently contest their position (De Benedetto and de Paola, 2015).

This finding raises more questions: When a woman plans to run for mayor, is the sex of the incumbent a variable that is knowingly taken into account by women candidates? If yes, is this because women challenging other women feel that the race is more equal than when men are present (Anzia and Berry, 2011)? Or do incumbent women exercise a role model effect, encouraging other women to pursue the position after them? As Crowder-Meyer and her colleagues note, "...when women run for more prestigious political offices, they are more politically experienced than male candidates for the same office" (2015: 2).

We also found that higher mayoral salaries are related to more male but not female candidates. Women appear to be less motivated by financial concerns and prestige when seeking local elective office. This finding is in line with the literature. As Carroll and Sanbonmatsu note, "In both their decision to run for municipal office the first time and their decision to seek the mayoralty, women are more often than men motivated by their concern over one or two particular public policy issues and less often motivated by a longstanding desire to run for public office" (2010: 23).

Such interrogations lead to more profound interrogations of the influence of gendered perceptions as far as political careers are concerned. Based on 10 interviews with female and male mayors in the province of Québec, Mévellec and Tremblay (2016) show that once in office, women tend to move further than men from the "municipal amateur career" to a "professional and political" career.

A professional and political career is a career that focuses on “delivery, the city level, a close link to the municipal political parties, and a strong dissociation between politics and other social activities” (Mévellec, 2018: 162). Further research is needed in this area to determine how such a result can be applied to Canadian cities and how it could be a result of the political ambitions and decisions of women.

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Note

1 As Cutler and Matthews state with respect to low informational contexts in local elections, “...in comparison with national elections, municipal elections provide voters with less political information (that is, information relating to issues, candidates and the like) and the information that is provided tends not to be well organized into coherent, partisan packages. The municipal voter, then, faces challenges of both informational quantity and quality” (2005: 360).

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