The Gendered Digital Turn: Canadian Mayors on Social Media

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"One fundamental problem facing democracies is the continued lack of gender equality in political leadership" Inglehart & Norris, 2003: 127.

Women continue to occupy lesser positions of power at all political levels in Canada, although scholars still argue on the accessibility of municipal politics to women. However, no previous study has systematically examined the gender ratio of mayors across Canada, as well as their (active) use of social media platforms in a professional capacity. Using novel data, this study examines the proportion of mayoral positions filled by women across the country, as well as the variation in social media adoption and active use by gender. Results show that women are still strongly underrepresented in positions of political power at the municipal level and that there is a higher proportion of female mayors who have a Facebook page, as well as Twitter and Instagram accounts and who actively use them outside of electoral campaigns, when compared with their male colleagues' social media practices.

Keywords: Canadian politics, Municipal politics, Social media, Representation, Gender

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Introduction

There is still little research on municipal politics in Canada, as it is often overlooked by researchers, who prefer to focus on the provincial and federal levels, as they obviously attract more media and citizen attention. Although Canadian local politics are often believed to be more accessible to women seeking to participate in politics (Brodie 1985), gender parity has not yet been reached. This is also true for local governments in the United States (Holman, 2017) and in Europe (Johansson, 2006; Steyvers & Medir, 2017). However, although the greater accessibility holds true to some extent in Canada (Tremblay & Mévellec, 2013), positions of power at the municipal level are not (Tolley, 2011). Among the obstacles limiting the number of female mayors is the unequal distribution of power in Canadian politics, but also the gendered media bias towards female political actors (Goodyear-Grant, 2013).

Alternatively, social media has become an important political tool in order to broadcast information, exchange with citizens and to circumvent traditional communication channels (Enli, 2017). Hence, this study aims to first examine the proportion of mayoral positions filled by women across the country in order to better shed light on the social media adoption rate by Canadian mayors, and particularly by female mayors. It is done by creating a database of all Canadian mayors and takes account of their presence and active use of 3 social media platforms: Facebook, Twitter and Instagram. Analyses focus on the variation of social media adoption and active use according to the gender of mayors across provinces and territories, as well as by municipality population size. Unlike other research on municipal governments, this study examines all Canadian mayors by merging data from

Statistics Canada's 2016 census, provincial municipal directories, and social media accounts identified on Facebook, Twitter and Instagram.

Results suggest that women are still strongly underrepresented in positions of political power at the municipal level, as 19,4% of all mayoral positions across Canada are held by women. Also, results show that female mayors are more inclined than their male colleagues to use social media in order to control their message, thereby circumventing the media to exchange with their constituents. Additionally, a higher proportion of female mayors both have and actively use a Facebook page, as well as a Twitter and Instagram account, than their male counterparts. Finally, there is also a greater proportion of female Canadian mayors who are actively multiple social media platforms, than male mayors.

Background and theoretical concepts
Municipal politics in Canada

Canada is a vast country composed of 10 provinces and 3 territories. The federal government has a national mandate and, like its provinces, operates from a parliament. Although the relationship between federal and provincial governments is often perceived as being equal, the municipal governments are seen as occupying a subordinate status (Tolley, 2011: 574). These local governments are entirely under the legislative control of provincial government (Lightbody, 2006: 17) and unlike at the provincial and federal levels of government, political parties at the municipal level are scarcer.

As previously mentioned, this study focuses on political actors at the municipal level, as they are often overlooked by researchers. Indeed, Larsson and Svensson (2014) note in their article focusing on the literature on the use of digital tools by political actors that political communication scholars need to devote greater attention to regional or local politics, in order to balance the amount of work at the national level: "[…] as political communication research has typically focused on national or international levels of study, scholars within the field should also make efforts to contribute to our knowledge of online practices at the hands of politicians at regional and local levels" (Larsson & Svensson, 2014). Additionally, Raynauld and Greenberg (2014), note that "much attention has been devoted to provincial and national politics, particularly during key moments, such as elections or intense debates relating to contentious policy issues or political controversies, while local or community-based political contexts have been largely overlooked" (412). Accordingly, political communication researchers are beginning to take an interest in this level of government, particularly in light of the fact that "[...] many local governments rival their provincial and federal counterparts in terms of social media deployment and usage, particularly for engagement-oriented pursuits [...]" (Gruzd & Roy, 2016, p. 80). In fact, there have been studies on the role of social networking platforms in the formation of local electoral dynamics during the municipal election in Ottawa in 2010 (Raynauld & Greenberg, 2014), as well as on the potential of social media as an election tool during the 2010 Niagara election (Hagar, 2014). Thus, the municipal level is of great interest to study a representation bias and to distinguish digital communication strategies according to gender. Mayors are, after all, political actors who are found in large numbers in Canada and because of their leadership position, they are likely to be subjected to significant media coverage in their community, unlike most elected at the federal and provincial levels. In this sense, this study aims to offer new insights, not only on local politics' social media practices, but also on the role of gender, by going beyond Gruzd and Roy's (2016) critical

examination of social media usage by municipal governments. Although their study is one of the rare to focus on municipalities in multiple provinces, by examining municipal governments in Calgary, Ottawa, Regina, and Halifax, this study goes further by looking at all Canadian mayors.

The municipal level is often considered as being more accessible for women, mainly because it is easier to reconcile with family life (Brodie, 1985) and deals with more policies that directly affect daily lives (Trimble, 1995). This is consistent with results from Tremblay and Mévellec's (2013) work on the feminization rate of the municipal level. They compared women's representation in city halls to that in the Canadian legislature. Their results are promising, as they show that the feminization rate is higher at the municipal level, namely of 21% in 2002 and 26% in 2009, compared to 19% in 2002 and 21% in 2009 at the provincial and federal level. This is consistent with work by Blais and Gidengil (1991), as well as Brodie (1985), who reach the conclusion that women find greater electoral success at the municipal level. However, this feminization rate combines both female councillors and female mayors. Although these results suggest a greater accessibility for women in politics, it could also be hiding an unequal distribution of positions of power. For example, the first and only female Prime minister of Canada was Kim Campbell in 1993 when Brian Mulroney retired from politics. At the time of writing, out of the 10 provinces and 3 territories, there is only 1 female Premier: Rachel Notley in Alberta. According to Trimble and Arscott (2003), female politicians are usually on the sidelines when it comes to positions of power, such as party leader, premier and prime minister. They are usually chosen to lead a party in times of crisis and remain in power for less than 2 years. Similarly, O'Neill and Stewart (2009) compared the experiences of male and female party leaders at the provincial and federal levels in Canada between 1980 and 2005. Their results reveal that major parties are less likely to elect women as their leaders, while parties on the ideological left are more likely than other parties to select women. Additionally, male politicians enjoy longer tenures as leaders and often find greater electoral success. Finally, Tolley (2011) examined the electoral presence of women in federal, provincial and municipal governments and found an important underrepresentation of women in mayoral positions, but also in other positions of power at the federal and provincial level.

The gender bias

In addition to the lack of women in positions of power in Canadian politics, research shows the existence of a gender bias towards female politicians in the media (Goodyear-Grant, 2013, Robinson & St-Jean, 1995; Tremblay & Bélanger, 1997). In fact, Goodyear-Grant (2013) argues that women in politics often receive less visibility in the media than their male counterparts, which can affect voters' perceptions of candidates as visibility can be interpreted as a guarantee of the quality of a candidate. Female politicians are also often represented by gendered personality traits (Robinson & St-Jean, 1995) and are more heavily criticized (Tremblay & Bélanger, 1997). Shor et al. (2015) analyzed the coverage of female politicians in newspaper articles and their findings suggest that sexism is commonplace and operates in ways that minimize women's political abilities in order to focus on stereotypes and their appearance. Similarly, the private life of female politicians can also negatively affect their mediatized political image. Indeed, according to a qualitative analysis of journalistic discourse of news stories, editorials and articles

published in the printed media in Quebec during 4 leadership races, female politicians' personal lives can negatively affect their mediatized political image (Lalancette & Lemarier-Saulnier, 2013). Thomas and Bittner (2017), for their part, examined parental status in politics, with a particular interest on its effect on female politicians. Their results suggest that a male politician with a family is perceived much more favorably than his female counterpart with children. Furthermore, according to the thesis of gendered mediation, the news media reflects the dominant culture and is thus often dominated by a male narrative (Goodyear-Grant, 2013). Hence, there is often a double standard when analyzing a political candidate's competence (Braden, 1996). Finally, recent studies show that the mass media prove to be an obstacle stopping women from participating in politics in the province of Quebec and that the newspaper coverage during municipal elections is still biased towards male candidates (Théberge-Guyon, et al., 2018).

Disintermediation and gender bias

Hence, social media platforms, such as Facebook, Twitter and Instagram, could help political actors – as well as their communication team – to bypass the media by directly addressing interested citizens. Indeed, digital media could allow political actors to disseminate information autonomously (Parisi & Regra, 2007) without having to respect news media's standards or framing (Parmelee & Bichard, 2012). This "disintermediation" is the circumvention of the media by direct representation and was first introduced to communication research by Katz and Dayan (1992) who looked at whether media events influenced television reporting. They were interested in television events that acted as a break from the media routine and as a national gathering. According to Thomas and Bittner (2017), "even the most cautious communication strategy cannot fully control the way in which the media report, frame and analyze women in politics" (11). It is therefore not surprising that politicians avoid having to rely on traditional communication channels (Broersma & Graham, 2012).

This hypothesized "digital turn" would also be consistent with the results from the social media report by Gruzd, Jacobson, Mai and Dubois (2018) in which they show that, among Canadians who are online, 94% have at least one social media account. Among the three platforms included in this study, Facebook is the most popular, as 84% of respondents have an account and 79% use it on a daily basis. It also attracts the most varied users, especially in regard to age. Twitter is the 4th most popular platform in Canada, as 42% of respondents use Twitter. This platform attracts younger users, ranging from 18 to 34 years of age, alike Instagram, the 6th most used platform. The latter also attracts more female users (Gruzd et al., 2018).

Finally, according to the results of a study by Kalsnes, Larsson and Enli (2017), relying on survey data, each platform has a different (and implicit) function: Facebook acts as a sphere of political interaction for average citizens, while Twitter remains a platform reserved for a smaller group of citizens who are generally more interested in politics.

Research questions

Therefore, this study seeks to shed light on the social media adoption rate of Canadian mayors, particularly by female mayors, by creating a repertory of all mayors across the country, as well as their social media presence and active use of Facebook, Twitter and Instagram. The literature suggests that female mayors may be more inclined than their male

colleagues to use social media in order to control their message and circumvent the gender bias in the media coverage. Hence this study aims to answer the following research questions:

> *What is Canadian mayors' social media adoption rate? How many mayors who have a Facebook page, a Twitter account and/or an Instagram account actively use them? To what extent does the adoption and active use of social media platforms vary according to mayors' gender?*

Methods
Data collection
     To examine Canadian mayors' social media adoption rate and active use according to their gender, it was necessary to first create a database. As municipal politics is under provincial jurisdiction, it is difficult to come upon complete aggregate information about Canadian mayors, especially that no official data currently exists on all Canadian mayors, as the Federation of Canadian municipalities doesn't have verified data for the entire country after 2015. Data collection began in mid-November 2018, once municipal elections in Ontario, Yukon, Northwest Territories, British Columbia, New Brunswick, Manitoba and Prince Edward Island were over and official results were available, and it ended in mid-January 2019.

     The first step in creating the database was identifying every municipality within each of the 10 provinces and 3 territories. Population size was also identified by using data from Statistics Canada's 2016 census. It was then possible to use election results or municipal directories to identify mayors and their gender. When not specified, the latter was verified by examining pictures and pronouns used, either in newspaper articles or on the municipality's website.

     However, mayors are not the only heads of municipal governments across the country, as there are also chiefs, reeves and heads of council, to name but a few. The Government of Alberta (2019) refers to the municipal head of council as a Chief Elected Official (CEO) that can be a mayor, reeve or chairperson and the Government of Northwest Territories (2019) defines the CEO as either mayor or chief and as having the same responsibilities. As their role is similar – if not identical – to that of mayor, this study includes them and will refer to all heads of municipal governments – or CEOs – as "mayors". Also, some municipalities were excluded during the data collection when mayoral positions had not been filled for various reasons. For example, this is the case for four municipalities in New Brunswick: Aroostook, Oakwood, Hanwell and Shediac.

     The second step was identifying mayors on three social media platforms: Facebook, Twitter, and Instagram. The goal was to calculate the proportion of mayors who have a Facebook page, a public Twitter account, as well as a public Instagram account. The decision to focus solely on Facebook *pages* arose when noticing that some mayors used Facebook *profiles* to share information about their municipality. However, although some used their profile in a professional capacity, others had a more hybrid approach, by mixing both their professional and personal lives. This can be an ethical issue, as "one of the biggest areas of concern with social media data is the extent to whether such data should be considered public or private data" (Townsend & Wallace, 2016, p. 5). Larsson (2015) also stresses the importance of considering the open or closed nature of data. Fortunately,

Facebook has diversified its functionalities by allowing users the possibility of creating a profile, which is usually preferred for personal use, or a page, which is preferred by professionals hoping to gain insight into their followers by using the promotion tools and analytics. This decision was also made in light of the fact that it is nearly impossible to identify a clear list of requirements for a Facebook profile to be deemed "professional" without doing an entire content analysis of said profile beforehand. Also, when multiple accounts for one mayor were found, which was often the case on Twitter, the one most recently used was selected.

Once the accounts were identified, a certain level of post-electoral social media activity was verified in the beginning of the month of January 2019. It seemed reasonable to believe that an active account would publish at least one post between December 1st and January 12th, if only to announce the municipality's Holiday Season schedule. This verification helped to weed out campaign-centric accounts.

Data analysis

Once the database was complete and verified, the proportion of female mayors across provinces and territories was examined, as well as by population size. To facilitate the analysis, municipalities' population size was divided into 5 categories: (1) 200 000 or more (2) 100 000 – 199 999 (3) 50 000 – 99 999 (4) 10 000 – 49 999 (5) 9 999 or less.

Social media presence and active use was then analyzed on a comparative basis according to gender on three levels: national, provincial and territorial, and then by population size. The proportion of mayors who are present on multiple platforms and who actively use them was also compared between female and male mayors across Canada, by province and territory, as well as by population size.

Finally, the tables of results in the following section do not include results from tests of independence as this study examines the entire population of Canadian mayors.

Results

This section presents descriptive statistics, as well as cross-tabulations which allows the comparison of results by gender. Results are presented in five sections. The first focuses solely on the proportion of female mayors across Canada. The second section examines Canadian mayors nationwide, whereas the third takes gender into account alongside the national data. The fourth and fifth sections narrow the results, respectively, by provincial and territorial level, and by population size.

A – Proportion of female mayors across Canada

Table 1 outlines the distribution of female mayors across Canada by province and territory.

Table 1 – Proportion of female mayors in each province and territory

Province or territory	Number of mayors	Proportion of female mayors
Alberta	**341**	19,9%
British Columbia	**162**	25,9%
Manitoba	**137**	14,6%
New Brunswick	**102**	21,6%
Newfoundland and Labrador	**276**	26,1%
Northwest Territories	**33**	24,2%
Nova Scotia	**49**	30,6%
Nunavut	**25**	32,0%
Ontario	**429**	22,1%
Prince Edward Island	**63**	25,4%
Quebec	**1124**	19,0%
Saskatchewan	**769**	13,3%
Yukon	**15**	26,7%
Canada	*3525*	*19,4%*

Results show that 19,4% of all mayoral positions in Canada are held by women. The smallest proportion of female mayors is found in Saskatchewan (13,3%), Manitoba (14,6%), Quebec (19%) and Alberta (19,9%), whereas the highest proportion is found in Nunavut (32%) and Nova Scotia (30,6%). It is, however, important to note that there are 25 mayors in Nunavut and 49 in Nova Scotia, therefore making percentages more sensitive to single cases.

Table 2 – Proportion of female mayors by municipality population size

Population	Number of mayors	Proportion of female mayors
200 000 or more	**27**	14,8%
100 000 – 199 999	**34**	11,8%
50 000 – 99 999	**50**	16,0%
10 000 – 49 999	**313**	22,4%
9 999 or less	**3101**	19,3%
Total	*3525*	*19,4%*

Results in table 2 suggest that smaller municipalities may be more accessible to women running for mayor, as the highest proportions are found in municipalities with a population of 10 000 to 49 999 residents (22,4%) and of 9 999 or less (19,3%). Results also show that female mayors are fewer in municipalities with a population of 50 000 residents or more. For example, there are a total of 8 female mayors in municipalities with a population size of 100 000 residents or more: Josée Néron (Saguenay, Quebec), Kathryn McGarry (Cambridge, Ontario), Marianne Meed Ward (Burlington, Ontario), Valérie Plante (Montréal, Quebec), Bonnie Crombie (Mississauga, Ontario) and Karen Redman (Waterloo, Ontario).

B – Canadian mayors' social media presence and active use

Table 3 summarizes the proportion of Canadian mayors who have a social media account or page, as well as those who actively use them.

Table 3 - Proportion of Canadian mayors who have a social media account or page, as well as those who actively use them

Social media platform	Proportion of mayors who have an account or page	Proportion of mayors who actively use account or page
Facebook page	12,2%	7,3%
Twitter account	11,6%	6,6%
Instagram account	5,8%	2,3%
N	3525	3525

Results suggest that very few mayors have a social media account, and that even less – nearly half – actively use it. A greater proportion of mayors actively use Facebook (7,3%) and Twitter (6,6%), but very few actively use Instagram (2,3%).

C – Canadian mayors' social media presence and active use according to gender

This section focuses on mayors' social media presence, as well as their active use of such platforms according to their gender.

Table 4 – Proportion of Canadian mayors with a social media presence and who actively use social media platforms according to gender

Social media platform	Proportion of mayors who have an account or page		Proportion of mayors who actively use account or page	
	Male	Female	Male	female
Facebook page	10,8%	18,2%	6,2%	12,1%
Twitter account	10,3%	16,9%	5,9%	9,5%
Instagram account	4,9%	9,5%	2,1%	3,2%
N	2840	685	2840	685

Results in Table 4 suggest that, not only are there more female mayors who have a Facebook page (18,2%), compared with 10,8% for their male colleagues, there are also more female mayors who actively use their page (12,1%) when compared to male mayors (6,2%). This greater digital presence is maintained for Twitter (16,9%) and Instagram (9,5%), although the – positive – gender gap in the active use is somewhat smaller.

Table 5 – Proportion of Canadian mayors who actively use social media platforms according to gender

Number of platforms	Proportion of mayors by number of social media platforms		Proportion of mayors by number of social media platforms actively used	
	Male	Female	Male	Female
None	83,7%	73,4%	90,2%	82,8%
1 platform	9,2%	13,7%	6,6%	11,4%
2 platforms	4,7%	7,6%	2,1%	3,9%
3 platforms	2,5%	5,3%	1,1%	1,9%
N	2840	685	2840	685

Overall, there is a higher proportion of female mayors who are present on multiple platforms and actively use them. Indeed, there are 5,7% more female mayors, than their male counterparts, who are present on multiple social media platforms. Similar results emerge when looking at their active use, as there is a positive gender gap of 2,6%.

To conclude this section, at the national level, there is a higher proportion of female mayors who are present on Facebook, Twitter and Instagram, and who actively use them. Similarly, there is a higher proportion of female mayors who are present on multiple social media accounts and actively use them.

D – Canadian mayors' social media presence and active use compared by gender at the provincial and territorial level

In this section, results from analyses similar to those above are broken down by province and territory to take a closer look at variations in social media active use by both female and male mayors.

Table 6 - Proportion of Canadian mayors who actively use Facebook, Twitter and Instagram according to gender at the provincial and territorial level

	Facebook		Twitter		Instagram	
Province	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
Alberta	6,2%	13,2%	8,8%	16,2%	2,6%	4,4%
British Columbia	17,5%	33,3%	12,5%	26,2%	8,3%	9,5%
Manitoba	1,7%	10,0%	9,4%	5,0%	0,0%	10,0%
New Brunswick	5,0%	13,6%	8,8%	13,6%	5,0%	9,1%
Newfoundland & Labrador	2,0%	1,4%	6,9%	1,4%	0,0%	1,4%
Northwest Territories	0,0%	37,5%	0,0%	12,5%	0,0%	25,0%
Nova Scotia	20,6%	33,3%	11,8%	13,3%	5,9%	0,0%
Nunavut	0,0%	12,5%	0,0%	12,5%	0,0%	0,0%
Ontario	16,8%	20,0%	19,5%	26,3%	9,0%	5,3%
Prince Edward Island	2,1%	6,3%	4,3%	0,0%	2,1%	0,0%
Quebec	6,4%	11,7%	1,6%	3,8%	0,5%	1,4%
Saskatchewan	0,6%	0,0%	1,5%	2,0%	0,0%	0,0%
Yukon	9,1%	0,0%	9,1%	0,0%	0,0%	0,0%
Canada	6,2%	12,1%	5,9%	9,5%	2,1%	3,2%

Results in table 6 suggest that, although there is a higher proportion of female mayors who actively use social media platforms overall, this positive gender gap disappears in a few provinces and territories. For example, in Manitoba, there is a greater proportion of female mayors who actively use their Facebook page (10%) and Instagram account (10%), than their male colleagues (1,7%; 0%), but results are reversed when looking at Twitter, as a greater proportion of male mayors actively use this platform (9,4%), than their female colleagues (5,0%). This situation also appears in Newfoundland and Labrador. Furthermore, except for mayors in Yukon, Newfoundland and Labrador, as well as Saskatchewan, there is generally a greater proportion of female mayors who actively use their Facebook page when compared to their male counterparts. Similar results arise when looking at the active use of Instagram, which proves to be the least popular platform among mayors. In fact, in nearly half of the provinces and territories, there are no male mayors who actively use Instagram, whereas the greatest proportion of female mayors who actively use Instagram is found in the Northwest Territories (25%), Manitoba (10%) and British Columbia (9,5%).

Table 7 - Proportion of Canadian mayors who actively use 1 or more social media platforms by gender at the provincial and territorial level

Province	1 platform		2 platforms		3 platforms		Total	
	Male	Female	Male	Female	Male	Female	Male	Female
Alberta	7,3%	17,6%	2,9%	5,9%	1,5%	1,5%	11,7%	25%
British Columbia	17,5%	16,7%	4,2%	19,0%	4,2%	4,8%	25,9%	40,5%
Manitoba	9,4%	5,0%	0,9%	10,0%	0,0%	0,0%	10,3%	15%
New Brunswick	6,3%	9,1%	6,3%	0,0%	0,0%	9,1%	12,6%	18,2%
Newfoundland & Labrador	6,9%	0,0%	1,0%	0,0%	0,0%	1,4%	7,9%	1,4%
Northwest Territories	0,0%	37,5%	0,0%	0,0%	0,0%	12,5%	0,0%	50%
Nova Scotia	8,8%	20,0%	14,7%	13,3%	0,0%	0,0%	23,5%	33,3%
Nunavut	0,0%	25,0%	0,0%	0,0%	0,0%	0,0%	0,0%	25,0%
Ontario	14,1%	23,2%	6,6%	9,5%	6,0%	3,2%	26,7%	35,9%
Prince Edward Island	2,1%	6,3%	0,0%	0,0%	2,1%	0,0%	4,2%	6,3%
Quebec	5,7%	10,8%	1,1%	0,9%	0,2%	1,4%	7,0%	13,1%
Saskatchewan	1,8%	2,0%	0,1%	0,0%	0,0%	0,0%	1,9%	2,0%
Yukon	18,2%	0,0%	0,0%	0,0%	0,0%	0,0%	18,2%	0,0%
Canada	*6,6%*	*11,4%*	*2,1%*	*3,9%*	*1,1%*	*1,9%*	*9,8%*	*16,8%*

Similarly, results on the active use of multiple social media platforms at the provincial and territorial level (Table 7) suggest that there is generally a greater proportion of female mayors who actively use multiple platforms. For example, in British Columbia, there is a greater proportion of female mayors who actively use at least 2 social media platforms (23,8%), compared to their male counterparts (8,4%). This also holds true in Alberta, New Brunswick, the Northwest Territories, Quebec and Manitoba. This positive gender gap holds generally holds true, except in Newfoundland and Labrador, Nova Scotia and Yukon.

Overall, when examining results at the provincial and territorial level, some areas, such as Newfoundland and Labrador, Nova Scotia and Yukon, indicate a gender gap in their active use of multiple social media platforms. However, results show that a higher proportion of female mayors actively use multiple social media platforms in Alberta, British Columbia, New Brunswick, Northwest Territories, Nunavut, Ontario, Prince Edward Island, Quebec and Saskatchewan. When taking a closer look at specific platforms, results suggest that there is a higher proportion of female mayors who actively use Facebook in most provinces and territories, except in Newfoundland and Labrador and Yukon. There is also a greater proportion of female mayors who actively use Twitter in 8 provinces and territories, and this trend holds true when looking at the active use of Instagram, as there is a higher proportion of female mayors in 8 provinces and territories.

E – Canadian mayors' social media presence and active use according to gender by population size of municipality

In this section, the analysis is pursued by dividing the sample by municipalities' population size in order to take a closer look at variations in social media presence and active use by female and male mayors.

Table 8 - Proportion of Canadian mayors who actively use social media platforms according to gender by municipality population size

Population	Facebook		Twitter		Instagram	
	Male	Female	Male	Female	Male	Female
200 000 or more	65,2%	75,0%	60,9%	100,0%	52,2%	50,0%
100 000 – 199 999	50,0%	75,0%	56,7%	50,0%	33,3%	25,0%
50 000 – 99 999	38,1%	62,5%	57,1%	100,0%	19,0%	62,5%
10 000 – 49 999	20,6%	37,1%	18,9%	27,1%	6,6%	7,1%
9 999 or less	3,2%	7,7%	2,7%	5,3%	0,5%	1,5%
Canada	6,2%	12,1%	5,9%	9,5%	2,1%	3,2%

Table 8 shows that there is a much greater proportion of mayors who actively use Facebook, Twitter and Instagram in more populous municipalities. For example, *all* female mayors in municipalities with a population size of 200 000 or more residents, as well as of 50 000 to 99 999 residents actively use Twitter, which represents nearly twice as many male mayors actively using Twitter within these municipalities (60,9%; 57,1%). Furthermore, results show that a greater proportion of female mayors actively use Facebook within all municipality population sizes. However, this proportion is much higher within municipalities with a population size of 50 000 residents or more. There is also a greater proportion of female mayors who actively use Twitter within municipalities of all population sizes, except for municipalities of 100 000 to 199 999 residents. Finally, the proportion of mayors who actively use Instagram according to gender varies greatly when divided by municipality population size. For example, the positive gender gap exists in municipalities with a population size of 99 999 residents or less, as 62,5% of female mayors and 19,0% of male mayors actively use Instagram in municipalities with a population size of 50 000 to 99 999 residents, 7,1% of female mayors and 6,6% of male mayors in municipalities with a population size of 10 000 to 49 999 and finally 1,5% of female mayors actively use Instagram, whereas 0,5% of male mayors actively use this platform in municipalities with a population size of 9 999 residents or less.

Table 9 - Proportion of Canadian mayors who actively use multiple social media platforms by gender according to municipality population size

Population	1 platform		2 platforms		3 platforms		Total	
	Male	Female	Male	Female	Male	Female	Male	Female
200 000 or more	8,7%	25,0%	13,0%	25,0%	47,8%	50,0%	69,5%	100%
100 000 – 199 999	30,0%	25,0%	20,0%	25,0%	23,3%	25,0%	73,3%	75,0%
50 000 – 99 999	26,2%	12,5%	26,2%	50,0%	11,9%	37,5%	64,3%	100%
10 000 – 49 999	20,6%	34,3%	10,3%	12,9%	1,6%	4,3%	46,9%	51,5%
9 999 or less	4,6%	8,5%	0,6%	2,0%	0,2%	0,7%	5,4%	11,2%
Canada	6,6%	11,4%	2,1%	3,9%	1,1%	1,9%	9,8%	17,2%

Similar results arise when examining multi-platform strategies. There is a greater proportion of female mayors who actively use multiple social media platforms (2 or more) in all municipalities. Furthermore, there is also a greater proportion of female mayors who actively use 3 platforms within all municipalities. Although the positive gender gap persists proportionally, results suggest that mayors' digital active presence varies greatly according to the population size of their municipality. Although 75% of female mayors within municipalities with a population size of 200 000 or more residents actively use multiple social media platforms, only 2,7% are found within municipalities with a population size of 9 999 or less.

Discussion and conclusion

This study's aim was to examine the positive gender gap in social media adoption and active use among Canadian mayors. Although it is difficult to confirm a link between the gender bias in media coverage and in politics and social media use by female mayors in Canada, these results offer a first glimpse into gendered variations in the adoption rate and active use of social media platforms by mayors in Canada. Results thus confirm the necessity to stratify political roles at the municipal level when reporting feminization rates. As previously mentioned, studies indicating a greater accessibility to municipal politics for women generally tend to look at both council and mayoral positions as whole, thus amplifying feminization rates as positions of power are generally held by men (Trimble & Arscott, 2003).

Even though women hold 19,4% – or a fifth – of all mayoral positions in the country and are mostly found in municipalities with smaller population sizes, results show that, nationally, there is a higher proportion of female mayors online who actively use a Facebook page, Twitter account and/or Instagram account. These results are unprecedented in the political communication literature.

Results also suggest that there is a greater proportion of female mayors who are present on Facebook, Twitter and Instagram, and who use them actively, when compared to their male colleagues. Also, results show that Facebook is the most actively used platform by both female and male mayors, whereas Instagram is the least popular. This is consistent with results from the social media report by Gruzd et al. (2018). It states that Facebook is the most popular platform in Canada and attracts the most varied user base. Furthermore, unlike Twitter, that can often be perceived as being a much more political sphere, Facebook can act as a sphere for political interaction among average citizens (Larsson & Enli, 2017). Additionally, according to Gruzd and Roy (2016), Facebook is useful in community building and encouraging participative forms of engagement. When analyzing variables at the provincial and territorial level, it appears that, among the social media platforms actively used by a higher proportion of female mayors, Facebook was the most popular in the Northwest Territories, Nova Scotia and British Columbia. Conversely, Twitter was mostly actively used – to a lesser extent – in British Columbia and Ontario, whereas Instagram was most the popular in the Northwest Territories. The variation in the active use of Twitter is particularly interesting when compared to results from Gruzd and Roy's (2016) study, which examines the social media practices by 4 municipal governments in Canada. Their results suggest a sizeable interest for Twitter. This may, however, be explained by the fact that all 4 mayors included in their study were men. This further

confirms the importance of taking gender into account when studying politicians' social media practices.

It is also interesting to note that there is a sizeable gap between mayors who are *present* on social media platforms and those who are *active*. This may be the result of campaign-centric communication strategies or of placeholder accounts. This study focuses on mayors as political actors who have an important role to play in citizens' daily life. It thus appears important to avoid electoral campaigns, as they are exceptional political periods that do not reflect daily communication practices (Van Aeslt & De Swert, 2009). Indeed, results in table 3 show that nearly half of all mayors who are present on social media platforms are actively using them. Additionally, when adding the comparison by gender (table 4), the gap between presence and activity tends to be larger for male mayors when looking at Facebook, as 10,8% of male mayors have a Facebook page, but only 6,2% actively use it, whereas 18,2% of female mayors are present and 12,1% are active. Table 5 confirms this by showing that 10,1% of male mayors are active on at least one platform and 17,2% of female mayors are active on at least one platform. Hence, results suggest that female mayors are most active on Facebook, Twitter and Instagram outside of an electoral campaign, when compared to their male colleagues.

Finally, when looking at the division by municipality population size, results show that there is strong relationship between social media adoption and active use among female mayors and population size. Specifically, as municipalities become smaller, the positive gender gap often decreases. The smaller gap could be explained by a lower level of professionalization in smaller municipalities, where the lack of resources and time make for limited digital communication strategies. However, although proportions get smaller, the positive gender gap remains.

Limitations and future research

Creating the database used herein highlighted many limitations and challenges, as municipal level political information can be difficult to come by. It was impossible to verify collected data, as the Federation of Canadian municipalities doesn't have verified data for the entire country after 2015. Furthermore, some provincial and municipal federation websites, such as Ontario, do not offer municipal directories, but rather municipal election results. Consulting electoral results online can be very time consuming and can sometimes facilitate oversights. Indeed, some mayors may resign during data collection. Furthermore, once the mayors were identified following Statistics Canada's database of municipalities, it was challenging to identify them on social media platforms for multiple reasons: some had multiple Twitter accounts, having abandoned accounts from past electoral campaigns, others go by nicknames or middle names. Therefore, one can spend hours looking for a (fictional) William B. Timmins, but need be looking for Bill Timmins, or even Bob Timmins. The most difficult platform to use for research purposes, however, is Instagram. Facebook and Twitter allow users to narrow a search according to name and peruse a list, which includes a picture and a few details. However, Instagram only allows users to search each other using a drop-down menu. It is then necessary to squint at the miniscule profile picture and cross-reference images and user names with Twitter profiles. When trying to compare numbers from this study to those from official sources, it was noticed that it had to be done provincially, but that there does not seem to be a public record of the distribution of mayors across the country.

Also, an additional limitation resides in the professionalization of municipal politics. Many mayors were not included in the Facebook sample, as they preferred to use Facebook profiles instead of official pages. Thus, as previously mentioned, this study focused on Facebook pages for ethical and privacy reasons.

Finally, this study aimed to act as a springboard to understand female mayors' motivations to use social media (or not) in a professional capacity, as well as the impact of gender on communication strategies. As no publicly available repertoire exists, it seemed necessary to create one so that future research can build upon it. This aim has been met.

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