

Do Elites Discriminate Against Female Political Aspirants? Evidence from a Field Experiment*

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ABSTRACT

Do elites exhibit gender bias when responding to political aspirants? Drawing on theories of gender bias, group attachment, and partisan identity, I conduct the first audit experiment outside the United States to examine the presence of gender bias in the earliest phases of the political recruitment process. Based on responses from 1,774 Canadian legislators, I find evidence of an overall gender bias in favor of female political aspirants. Specifically, legislators are more responsive to female political aspirants and more likely to provide them with helpful advice when they ask about how to get involved in politics. This pro-women bias, which exists at all levels of government, is stronger among female legislators and those associated with left-leaning parties. These results suggest that political elites in Canada are open to increasing female political representation and thus should serve as welcome encouragement for women to pursue their political ambitions.

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Introduction

Do elites exhibit gender bias when responding to political aspirants? Relative to their share of the voting population, women are significantly underrepresented in politics. The political recruitment process — the process of going from an eligible citizen to an elected representative — occurs in three distinct stages (Norris and Lovenduski, 1993; Krook and Norris, 2014). First, eligible citizens must select themselves as potential candidates. Second, those who aspire to political office must be selected as candidates by political parties. Finally, candidates must be selected as representatives by the voters. Gender distortions can occur at each of these stages, and studies have generally shown that women face higher barriers to representation than similarly situated men (Norris and Lovenduski, 1993; Fox and Lawless, 2004, 2010; Fulton et al., 2006; Fulton, 2012; Anzia and Berry, 2011). Most research has focused on the last stage of the recruitment process, where voters select their representatives. Here, though, I focus on a much earlier stage by examining whether elites discriminate against female political aspirants. Specifically, I examine whether elites are equally responsive to female and male political aspirants who signal an interest in a political career.

Most studies of the political recruitment process rely on observational data, which makes it difficult to isolate the effect of gender discrimination because of potential problems with omitted variable bias, selection bias, and post-treatment bias. Even when we observe differences between men and women, it's hard to know whether these differences are really due to the gender of the candidate or to some other unobserved or difficult to measure factor such as quality (Fulton, 2012; Fulton and Dhima, 2020), experience (McDermott, 2005) or attractiveness (Lenz and Lawson, 2011; Ahler et al., 2017). The issue of post-treatment bias, which has received relatively little attention in the literature, is particularly problematic (Montgomery, Nyhan and Torres, 2018; King and Zeng, 2006). An individual's gender is often determined early in an individual's life and affects most things they do or experience. Many of the things that scholars like to control for to isolate the effect of gender in their analyses, such as education and experience, are likely influenced by an individual's gender. This makes it extremely difficult to control for all of the potential confounders in an observational study of gender discrimination without inducing post-treatment bias (Crabtree, 2019). Worryingly, post-treatment bias can be in any direction (Montgomery, Nyhan and Torres, 2018). The methodological difficulties faced by observational studies in accurately identifying gender discrimination can have enormous potential costs. For example, some observational studies may erroneously indicate the presence of gender discrimination, leading policy makers and other actors to waste significant time and

money attempting to remedy a problem that does not in fact exist. Similarly, other observational studies may incorrectly indicate that gender discrimination is absent, inducing policy makers and other actors to overlook the very real negative consequences of discrimination felt by particular gender groups.

To avoid the potential methodological problems associated with observational studies, I employ an experimental research design, specifically an audit (or correspondence) experiment, to examine elite gender discrimination. Audit experiments are especially useful for investigating sensitive topics, like gender discrimination, because they allow researchers to avoid both selection bias concerns that arise when the people who are likely to discriminate opt out of studies and social desirability concerns that arise when people have incentives to downplay their discriminatory behavior to avoid perceived social and legal sanctions.¹ With an audit experiment, the researcher varies some characteristic of individuals, keeping everything else the same, and then sends these individuals, or messages from these individuals, into the field to see whether the randomized characteristic affects some outcome of interest (Bertrand and Duflo, 2017). Unlike survey experiments, which can only get at reported *attitudes* toward discrimination in a hypothetical scenario, audit experiments provide a real-world *behavioral* measure of discrimination. In my audit experiment, I send an email message from a political aspirant inquiring about a career in politics to elected representatives at different levels of government in Canada.² By varying the sex of the political aspirant, I can examine whether political elites respond to men and women at the same rates. Replying (versus not replying) to an email message like this is recognized as important because responses can be considered “a type of ‘micro’-mentorship where even a small act of encouragement can teach an aspirant about the profession and provide cues about whether he or she will be welcome” (Kalla, Rosenbluth and Teele, 2018, 338).

My study is one of the few gender and politics audit experiments to be conducted outside the United States and the first to address one of the stages of the political recruitment process.³ To my knowledge, there has been only one audit experiment that looks at elite gender discrimination in the political recruitment process. In contrast to previous observational studies of political elite behavior, the audit study conducted

¹While they are relatively new to political science, audit experiments have a long history dating back to the 1940s and 1950s (Gaddis, 2018a). Large-scale audit studies were first conducted in the United States and the United Kingdom in the late 1960s following the introduction of legislation that sought to make various kinds of racial discrimination illegal.

²Email audit experiments are increasingly common (Crabtree, 2018) and have recently been employed to study things like racial discrimination (Bertrand and Mullainathan, 2004; Brushman and Bonacci, 2004; Butler and Broockman, 2011; Hogan and Berry, 2011; Gell-Redman et al., 2018), sexual discrimination (Neumark, Bank and Nort, 1996; Ahmed, Anderson and Hammarstedt, 2013), age discrimination (Ahmed, Anderson and Hammarstedt, 2012; Baert et al., 2016), and gender discrimination (Neumark, Bank and Nort, 1996; Milkman, Akinola and Chugh, 2015; Kalla, Rosenbluth and Teele, 2018).

³While several audit experiments have focused on gender in the economic sphere, very few have examined the gendered behavior of political actors (Kalla, Rosenbluth and Teele, 2018). Most audit studies dealing with public legislators have instead focused on race (Butler and Broockman, 2011; Broockman, 2013; Butler, 2014; Gell-Redman et al., 2018).

by [Kalla, Rosenbluth and Teele \(2018\)](#) in the United States finds no evidence of any gender discrimination by legislators against female political aspirants. A common concern with experiments is that they are often not replicated and, as a result, it's hard to know whether their findings are generalizable to other contexts ([Clark and Golder, 2015](#)). Indeed, much of the discussion regarding the drawbacks of experiments is framed around concerns with external validity.⁴ One way to address concerns with external validity and evaluate the robustness of results is to replicate an experiment in a different context ([Krupnikov and Levine, 2014](#)). Replication is especially pertinent when the findings of an experiment, such as the one conducted by [Kalla, Rosenbluth and Teele \(2018\)](#), run counter to expectations in the literature. My audit experiment builds on and extends Kalla, Rosenbluth, and Teele's analysis to the Canadian context.

There are at least three reasons why Canada is a good context for evaluating elite gender discrimination against female political aspirants. First, Canada is useful from a practical perspective when it comes to extending the [Kalla, Rosenbluth and Teele \(2018\)](#) study. While Canada is a parliamentary democracy and the United States is a presidential one, both countries employ a single-member district plurality electoral system. And, with the exception of Quebec, which has a large French-speaking population, both countries are predominantly English speaking. This means that I can use the same experimental treatment, thereby addressing potential concerns about minimal replication in research and the generalizability of experimental studies. Moreover, Canada has a qualitatively similar level of women's legislative representation to that found in the United States. Second, prior research on Canadian politics suggests that the persistent underrepresentation of women has less to do with voter reluctance to elect female candidates ([Black and Erickson, 2003](#); [Young, 2006](#); [Goodyear-Grant, 2010](#); [Bashevkin, 2011](#)) and more to do with discrimination in the earlier stages of the political recruitment process ([Erickson, 1991](#); [Thomas and Bodet, 2013](#)). This suggests that a focus on elite gender discrimination is particularly pertinent in the Canadian case. Finally, the inclusion of women in politics has become a salient issue over the last few years in Canada, and there has been growing pressure to increase diversity and make political representation more inclusive. During the 2015 federal elections, for example, the Liberal Party made a commitment to gender-equal cabinets. Upon coming to power, the Liberal Party fulfilled some of its promises by forming Canada's first gender-balanced government at the federal level, further propelling issues of gender equality onto the national agenda.

⁴Internal validity refers to our ability to determine whether a treatment effect – the difference between the outcome when exposed to the treatment and the outcome when not exposed to the treatment – reflects a *causal* relationship ([Shadish, Cook and Campbell, 2002](#)). In contrast, external validity refers to our ability to determine whether the magnitude and significance of a treatment effect differs across people and settings, or more generally “context” ([Morton and Williams, 2008](#); [McDermott, 2011](#)).

Based on responses from 1,774 legislators in Canada, I find no evidence of elite gender discrimination against female political aspirants. Indeed, I find consistent evidence that Canadian legislators are significantly more responsive to female political aspirants than male ones and more likely to provide them with helpful advice. This pro-women bias in a very early and informal phase of the political recruitment process exists at all levels of government in Canada and tends to be stronger among female legislators and those associated with left-leaning parties. These results obviously don't imply that female political aspirants have not historically faced elite discrimination in this phase of the political recruitment process or that they don't face higher hurdles than men in later and more formal stages of the recruitment process. They do suggest, however, that contemporary political elites in Canada may be open to increasing female political representation. This should be treated as positive news. When combined with the absence of elite gender discrimination at the same stage of the political recruitment process in the United States (Kalla, Rosenbluth and Teele, 2018), the results from my experiment should serve as welcome encouragement for women to put themselves forward as potential candidates and pursue their political ambitions.

Should Gender Affect Elite Responsiveness?

On the whole, research suggests that gender distortions are greater earlier in the political recruitment process than later. While studies of voter discrimination find that stereotypes are still pervasive in voters' evaluation of candidates (Bauer, 2015), there's only mixed evidence as to whether and when voters are unwilling to support female candidates (Schwarz, Hunt and Coppock, 2018). In fact, some analyses find that voters are *more* willing to vote for female candidates than male ones (Black and Erickson, 2003; Lawless and Pearson, 2008; Golder et al., 2017).⁵ Research suggests that parties are less enthusiastic than voters when it comes to selecting female candidates. For example, evidence indicates that party leaders have historically been more likely to recruit men than women to run for political office (Niven, 1998, 2006; Sanbonmatsu, 2006; Fox and Lawless, 2010; Schwindt-Bayer, 2011) and that parties, when they do select female candidates, often nominate them in districts where they're less likely to win (Erickson, 1991; Sanbonmatsu, 2002; Thomas and Bodet, 2013) or place them lower on party lists (Luhiste, 2015). Gender distortions are arguably even

⁵Some scholars caution that equal success rates of female and male candidates among voters do not necessarily indicate a gender-neutral electoral environment (Lawless and Pearson, 2008; Anzia and Berry, 2011; Fox and Lawless, 2004; Fulton, 2012; Fulton and Dhima, 2020; Mo, 2015). For example, it may be the case that female candidates only "do as well as men" because they have stronger valence characteristics, such as higher qualifications, thereby suggesting that the electoral environment is still biased against women.

stronger at the self-selection stage, with numerous studies showing that women are much less likely to put themselves forward as potential candidates than similarly situated men (Lawless and Fox, 2010; Fulton et al., 2006; Pruyers and Blais, 2019) because of gender role socialization (Clark, Hadley and Darcy, 1989), family obligations (Fulton et al., 2006), perceptions of qualifications (Fox and Lawless, 2011), lack of party support and recruitment (Fox and Lawless, 2004, 2010, 2011; Fulton et al., 2006; Niven, 1998; Sanbonmatsu, 2006), and election aversion (Kanthak and Woon, 2015).

As the early stages of the recruitment process appear to be more distortionary, women's underrepresentation is often considered a supply-side issue rather than a demand-side one (Fox and Lawless, 2004; Htun, 2016).⁶ More specifically, it's frequently assumed that the low level of female representation is primarily caused by the lack of women running for political office rather than low voter demand (Htun, 2016, 90-91). But it's important to remember that demand also comes from political elites. Elite demand matters not only because elites have the power to change formal institutions, such as electoral rules, and thus make the political opportunity structure more permissive to female political inclusion, but also because their informal messages and behavior can have a significant impact on encouraging female political aspirants to put themselves forward as potential candidates. Research suggests, for example, that political aspirants are twice as likely to think about running if they're encouraged by political elites (Fox and Lawless, 2004) and that women are more likely to run and get elected if elites promote messages of female inclusion (Karpowitz, Monson and Preece, 2017). Encouragement from political elites is especially important for female candidates as "women are simply unlikely to run in the face of elite discouragement" (Niven, 2006, 485).

Can we expect political elites to be equally responsive to female aspirants when they seek advice on how to start a political career? By looking at political aspirants who contact legislators for advice, I focus on an *informal* phase of the recruitment process to examine possible elite gender bias. To date, relatively little is known about how informal institutions shape candidate emergence. Most studies of gender bias tend to focus on the impact of formal institutions such as quotas (Jones, 1998; Frechette, Maniquet and Morelli, 2008; Krook, 2009), electoral systems (Kittilson and Schwindt-Bayer, 2010), district magnitude (Shugart, 1994; Taagepera, 1994; Schmidt, 2009), and ballot structures (Jones and Navia, 1999; Schmidt, 2009; Thames and Williams, 2010; Luhiste, 2015). The scholarship that exists on informal institutions tends to address the

⁶The level of women's legislative representation in a country is determined by both demand-side and supply-side factors (Inglehart and Norris, 2003; Paxton, Kunovich and Hughes, 2007). While *supply-side factors* shape the size of the pool of women with the experience and willingness to compete for political office, *demand-side factors* have to do with the preferences that individuals have for female representatives.

challenges that female representatives face once they're in the legislature (Kathlene, 1994; Hawkesworth, 2003; Heath, Schwindt-Bayer and Taylor-Robinson, 2005; Escobar-Lemmon and Taylor-Robinson, 2009). With a few exceptions (Bjarnegard, 2013; Bjarnegard and Kenny, 2015), this scholarship on informal institutions is not mirrored to the same extent in the literature that addresses political recruitment.

There are several reasons why we might expect political elites to exhibit gender bias when responding to individuals who are thinking about a career in politics. As noted earlier, existing research suggests that there's gender discrimination in the political recruitment process and numerous studies find that elites have historically been less likely to recruit female candidates than male ones (Fox and Oxley, 2003; Sanbonmatsu, 2006; Fox and Lawless, 2010). As an example, Niven (1998) finds that the majority of women holding local office across four U.S. states report having been discouraged from running for office by party leaders. Even when female and male candidates report receiving similar levels of encouragement from political elites, there seems to be some bias when it comes to the districts in which they're selected to run. For example, female candidates for state house and senate races in Florida in 2000 and 2002 report having been discouraged from running in favorable districts and instead encouraged to run in unfavorable districts, while men received the opposite messages (Niven, 2006). Similarly, there's evidence that female candidates for federal office in Canada in 2008 and 2011 were more likely than men to be nominated in non-competitive districts (Erickson, 1991; Thomas and Bodet, 2013).⁷ One potential reason why political elites discriminate against female candidates has to do with how implicit and explicit gender stereotypes influence who they deem appropriate for political office. When envisioning a strong legislative candidate, studies have found that party leaders tend to describe someone with stereotypically masculine traits (Niven, 1998). If political elites believe that female candidates are not suited to holding political office, then they're less likely to encourage them to run for office. This reasoning leads to the *Gender Bias Hypothesis*.

Gender Bias Hypothesis: Political elites will be less responsive to female political aspirants than to male political aspirants.

There are reasons to believe that the level of gender bias may vary depending on the gender of the political elite because of in-group and out-group bias. According to social identity theory (Tajfel and Turner, 1979), individuals have a natural tendency to categorize people into groups based on shared identity traits such as gender, race, and religion. These shared group identities create a sense of connection and

⁷Though Medeiros, Forest and Erl (2019) find that this was not the case for the federal elections in 2015.

belonging, which can lead to a more favorable evaluation and treatment of ‘in-group’ as opposed to ‘out-group’ members, even in the absence of any conscious pro-ingroup bias (McPherson, Smith-Lovin and Cook, 2001). According to social identity theory, therefore, female political aspirants should experience more discrimination from political elites who don’t share their gender (men) than those who do (women). Consistent with the claim that people favor members of their in-group, Niven (1998) finds that male party chairs in the United States prefer candidates who resemble themselves on a range of traits, including gender, occupation, and personality characteristics. Since women are not free of these biases, female political elites should favor female political aspirants. While Tremblay and Pelletier (2001) find that female party presidents in Canada don’t prefer candidates with stereotypically feminine traits, Cheng and Tavits (2011), as well as Medeiros, Forest and Erl (2019), find that they are more likely to nominate women candidates in their constituency. This reasoning suggests a gender affinity story in which male elites will be more responsive to men and female elites will be more responsive to women. Note that this gender affinity story is consistent with the predictions from the *Gender Bias Hypothesis*. The fact that contemporary political elites are primarily made up of men means that we should observe a gender bias on average against female political aspirants.

Gender Affinity Hypothesis: Political elites will be more responsive to political aspirants who share their gender. In other words, male political elites will be less responsive to female political aspirants and female political elites will be more responsive to female political aspirants.

The gender affinity story suggests that we’ll see less discrimination against female political aspirants when the numeric or descriptive representation of female elites is high. This is because female political aspirants will enjoy more positive in-group bias and less negative out-group bias when women make up a larger percentage of the political elite. A common claim in the literature is that fewer women hold political office as we move up the levels of government (Blais and Gidengil, 1991; Baxter and Wright, 2000; Palmer and Simon, 2001, 2010), leading some scholars to talk of a “glass ceiling” when it comes to women’s representation (Baxter and Wright, 2000; Ferree and Purkayastha, 2000; Cotter et al., 2001; Folke and Rickne, 2016). Political hierarchies, such as those that often exist between different levels of government, are commonly associated with increased discrimination against marginalized groups such as women, with the most powerful offices typically restricted to men and other high status elites. Putnam (1976, 33) refers to this as the “law of increasing disproportion.” Bashevkin (1993, 92) finds evidence of this hierarchical impact on women, which she summarizes as “the higher, the fewer,” within Canadian parties. She later suggests

that a similar result holds across the different levels of government in Canada (Bashevkin, 2009, 4). The reasoning here is captured in the *Levels of Government Hypothesis*.

Levels of Government Hypothesis: Political elites will be less responsive to female political aspirants than to male political aspirants at all levels of the government. However, this negative effect will grow as we move from the local to the national level.

The extent to which this general theoretical hypothesis applies in the Canadian case is somewhat open to question, though. One reason is that there's debate about the degree to which the different levels of government — municipal, provincial, and federal — represent a clear political hierarchy.⁸ Constitutionally, the federal and provincial levels enjoy equal status, with municipalities occupying a subordinate status. However, some have argued that provinces, despite their formal and constitutional equality, are also subordinate in practice to the federal level, or at least perceived to be so, partly because of their limited monetary resources (Dyck, 1998, 225). There's also debate as to whether the descriptive representation of women declines as we move from the municipal to the federal level. Tolley (2011, 585) finds that women experienced a “municipal advantage” in about 60% of jurisdictions in 2009 and that the level of women legislators at the federal level was lower than at both the provincial and municipal levels from 2004 to 2009. However, these differences were substantively small and not necessarily reflective of earlier time periods. It remains an open empirical question, therefore, whether the degree to which political elites respond differently to female and male political aspirants will vary across the different levels of government in Canada.

How much gender bias political elites exhibit against female political aspirants should also depend on their partisan affiliation. Political elites are nested within political parties, and there is compelling evidence that parties differ in their ideological and behavioral commitment to gender egalitarianism. Past studies have shown, for example, that parties on the left of the ideological spectrum are more responsive to gender-related demands than parties on the right (Caul, 1999; Kittilson, 2006; Salmond, 2006; O'Brien, 2018). The commitment of left-wing parties to issues of gender equality is discernible in their gender-egalitarian policies (Beckwith, 2000; Young, 2000), their greater incorporation of women within leadership structures (Caul, 2001), and their initiatives to increase the presence of women in politics by recruiting more female candidates. Since legislators select into parties and egalitarian attitudes on gender issues are associated with left-wing party membership (Tremblay and Pelletier, 2000), it's likely that political elites from left-leaning

⁸Canada has 3,573 municipalities, 10 provinces, and 3 territories. For the purpose of this paper, I treat the territories as having quasi-provincial status and use the word “province” to refer to both provinces and territories.

parties will be more responsive to female political aspirants than political elites from right-leaning parties. This reasoning is captured in the *Left-Wing Partisan Hypothesis*.

Left-Wing Partisan Hypothesis: Political elites from left-leaning parties will be more responsive to female political aspirants than political elites from right-leaning parties.

Although most research assumes that political elites will be biased against women who are thinking about a political career, there are also reasons to expect that they'll be equally responsive to male and female political aspirants. First, some scholars argue that when it comes to their reelection and political careers (Fiorina, 1989; Grose, 2011), interactions with constituents, like personal communications with them, are as important, if not more important, for political elites than legislative behavior (Fenno, 1978). Since elites are likely to be vote-maximizing agents and voters can sanction them based on their interactions, they have an incentive to be responsive to all of their constituents irrespective of any potential biases they might otherwise have. Evidence for this comes from a recent audit experiment by Loewen and MacKenzie (2019) showing that 202 randomly selected Canadian legislators at the federal and provincial levels were equally responsive to requests for assistance from men and women. Second, if political elites believe that voter demand for female candidates is similar to voter demand for male candidates, as some existing research indicates (Black and Erickson, 2003; Lawless and Pearson, 2008; Schwarz, Hunt and Coppock, 2018; Golder et al., 2017), then strategic incentives will again encourage political elites to be equally responsive to female and male political aspirants. This reasoning is captured in the *Equal Response Hypothesis*.

Equal Response Hypothesis: Political elites will be equally responsive to female and male political aspirants.

Experimental Research Design

Identifying gender bias in the responsiveness of political elites is difficult with observational data because of potential problems with omitted variable bias, selection bias, and post-treatment bias. I avoid these methodological problems by conducting the first gender and politics audit experiment on an aspect of the political recruitment process outside the United States. In the audit experiment, I send an email message from a political aspirant inquiring about a career in politics to legislators at the municipal, provincial, and federal levels in Canada. By randomizing the sex of the political aspirant, it's possible to determine whether politi-

cal elites respond at equal rates to women and men. Whether political elites are willing to reply to an email from a political aspirant seeking advice on how to start a career in politics is important as responses serve as a visible signal of inclusion, indicating whether the female and male aspirants are welcome in the political profession. This type of “micro-mentorship” is often considered especially important for female aspirants as women are significantly more likely to put themselves forward as candidates if they’re encouraged and actively recruited to run for office (Carroll and Sanbonmatsu, 2013; Fox and Lawless, 2004, 2014). Audit experiments, like the one conducted here, are well suited to investigating sensitive topics, such as elite gender discrimination, as they allow researchers to directly evaluate actual behavior, as opposed to attitudes or *reported* behavior, while mitigating selection bias and social desirability concerns.⁹

The email message I sent to legislators in Canada is shown in Figure 1.¹⁰ The email contained a request to learn about how the legislator entered politics and to give advice on how to start a career in politics. The email was sent from a hypothetical university student and each legislator received just one email. Having a university student, as opposed to a high school or middle school student, ask for advice about how to start a political career allows for a more credible inquiry since university students are more likely to have thought seriously about their career choices and taken steps in pursuit of their career objectives.¹¹ The only difference in the email sent to each legislator was whether the email was sent from (and signed by) an email account with a female or male first name. In effect, the randomized experimental

⁹The benefits of audit experiments for measuring discrimination have long been recognized by academics and governments alike (Gaddis, 2018b). For example, the Race Relations Board, created by the British Parliament in the 1960s, was an early adopter of audit experiments to measure levels of racial discrimination (Daniel, 1968; Smith, 2015). Similarly, the U.S. Department of Housing and Urban Development has conducted multiple audit studies over the years looking at discrimination in the housing market (Johnson, Porter and Mateljan, 1971; Quillian et al., 2017). Although audit experiments provide an effective behavioral measure of discrimination, they require that scholars engage in deception and eschew standard informed consent procedures. Deception is necessary as participants are virtually guaranteed to behave differently if they know that they’re taking part in, say, an experiment on gender discrimination. Similarly, informed consent is not feasible given that the mere knowledge of taking part in a study, even a “cover” experiment, is likely to change participant behavior and thereby invalidate causal inferences. In my own study, I followed best practices as they relate to the ethical implementation of audit experiments. First, I obtained institutional review board (IRB) approval and preregistered my analysis at Evidence in Governance and Politics (EGAP). Second, I respect participant confidentiality by reporting only aggregate results and no specific responses. Third, I tried to minimize the time burden on participants by keeping the question in my email message short and straightforward to answer. Some evidence that I was successful on this last point comes from the fact that the median response to my email message was just 44 words long. Fourth, the experiment doesn’t place an undue burden on vulnerable groups and poses minimal risk to the participants and wider community.

¹⁰The email message was always sent in English to replicate as closely as possible the empirical strategy employed by Kalla, Rosenbluth and Teele (2018). This has implications for Quebec with its large French-speaking population. As I address in more detail in Online Appendix A, while the response rate was lower for Quebec than the overall response rate, the *pattern* of responses was almost identical. Importantly, my upcoming results are robust to the inclusion or exclusion of the legislators in Quebec.

¹¹As I noted earlier, my study replicates and extends a recent audit experiment conducted in the United States by Kalla, Rosenbluth and Teele (2018). One minor change was needed in the wording of the email message to make it suitable for the Canadian context. Specifically, the email message mentions a “second-year university student” rather than a “college sophomore.” This change was necessary because Canadians refer to students by their year and because “university” in Canada refers to a four-year degree granting institution, whereas “college” usually refers to a community college or technical school.

Figure 1: Email Sent to Legislators

From: [Treatment: Student Sex]
To: [Legislator's email]
Subject: Help on a class project?

Dear [LEGISLATOR],

My name is [MALE/FEMALE] and I am a second-year university student. I'm interviewing politicians for a class project to learn about how they entered their field and what advice they might have for students interested in politics. As someone who really cares about my community, one day I hope to be a politician. What advice would you give me?

Sincerely,
[MALE/FEMALE]

treatment is the gendered name of the putative student. In line with the broader literature on audit studies (Bertrand and Mullainathan, 2004), I use multiple female and male names to avoid the possibility that differences in elite responsiveness might be driven by a particular name effect as opposed to the gender of the political aspirant.¹²

The names I use were the same as those used by Kalla, Rosenbluth and Teele (2018) in their study of political elite responsiveness in the United States. The thirteen first names for women were Amanda, Ashley, Brittany, Emily, Hannah, Jessica, Kayla, Lauren, Megan, Rachel, Samantha, Sarah, Stephanie. The thirteen first names for men were Andrew, Brandon, Christopher, Daniel, David, James, John, Joshua, Matthew, Michael, Nicholas, Ryan, and Tyler. The 26 surnames are Allen, Anderson, Brown, Clark, Davis, Hall, Harris, Jackson, Johnson, Jones, King, Lee, Lewis, Martin, Miller, Moore, Robinson, Smith, Taylor, Thomas, Thompson, Walker, White, Williams, Wilson, and Young.¹³ I considered adding last names that would signal the race/ethnicity of the student, for example, a French- or South Asian- sounding last name. However, I ultimately refrained from doing this as the relatively small number of Canadian legislators limits my statistical power and makes factorial experimental designs that jointly manipulate the gender and race of the student less practical. What this means, though, is that my audit experiment is limited to testing whether

¹²The use of multiple names also reduces the likelihood that legislators in the same office or building would become aware of the experimental intervention by observing emails that came from the same student.

¹³The first and last names were the most popular names in the United States in the 1990s based on information from the U.S. Census and Social Security Administration, and should therefore be common among second-year university students when the audit experiment was conducted in January 2018. One approach would have been to substitute these names with the most popular first and last names in Canada in the 1990s. However, Statistics Canada, the equivalent of the U.S. Census Bureau, doesn't collect data on the popularity of baby names. I checked websites that had information on the popularity of baby names in Canada and the most common first and last names were very similar to those used in the Kalla, Rosenbluth and Teele (2018) analysis. Thus, to keep the experimental treatment as similar as possible across the two studies, I chose to leave the first and last names unchanged. The one exception is that I excluded Hispanic last names as Hispanics are not a salient visible minority in Canada.

political elites discriminate against Anglo-Canadian college-educated women. I randomly combined the first and last names to create 26 unique names. Finally, I generated Gmail accounts for each hypothetical student that took the following form: `firstname.lastnameXXXX@gmail.com`, where XXXX represents four random digits.

Given my interest in political elite bias, the population of interest is the universe of legislators in Canada. The names and contact information for Canadian legislators come from the [Represent Civic Information API](#). The original sample consisted of 1,936 legislators.¹⁴ However, I dropped several legislators for two reasons. First, I was forced to drop those legislators for whom an email address was not provided. Second, I dropped duplicate legislators. These were legislators who held multiple elected positions, such as city councillor and regional councillor. This left me with 1,779 unique legislators across all of the levels of government in Canada. Specifically, there are 854 municipal legislators (28.6% women), 591 provincial legislators (31.6% women), and 334 federal legislators (26.7% women). Of the 1,779 legislators in the final sample, five could not be reached because of an invalid email address. In line with common practice, I exclude these observations from the upcoming analyses ([Butler and Broockman, 2011](#)). This means that the results reported in the paper refer to the 1,774 legislators who actually received an email.¹⁵

The emails were sent on January 20 and January 21, 2018, with legislators randomly assigned to receive their message on one of these days. To better test whether male and female legislators respond at different rates, I block randomized the email messages on the gender of the legislator ([Moore and Schnakenberg, 2012](#)). This means that I first divided the legislators into two groups — male and female — and then I randomly assigned the treatment within these two groups.¹⁶ The benefit of block randomization is that we can ensure that roughly equal numbers of male and female legislators are assigned to each experimental treatment ([Gerber and Green, 2012](#)). The information contained in [Table 1](#) confirms that the randomization procedure was successful and that the two experimental treatment groups (male or female sender) are

¹⁴Although this doesn't represent the full number of legislators in Canada, the API notes that it's "the most comprehensive source in Canada for elected officials and electoral districts." More descriptive information about the federal, provincial, and municipal legislators in the API sample can be found in [Online Appendix B](#).

¹⁵In a recent audit study in Canada, [Loewen and MacKenzie \(2019\)](#) exclude legislators from Prince Edward Island on the grounds that the provincial legislators there are likely to know most of their constituents and may therefore be suspicious of an email from someone they don't know. However, the pattern of responses from the legislators on Prince Edward Island is similar to that found elsewhere and a careful read of the responses doesn't indicate anything problematic. As a result, I include the responses from Prince Edward Island in my upcoming analyses. I note, though, that my inferences are robust to excluding these responses.

¹⁶To identify whether a legislator is female or male, I looked up each legislator online. Most organization websites (councils, assemblies, parliament) include a profile for each of the legislators that provides a photo and/or biography from which it's possible to determine the sex of the legislator. I also consulted newspaper articles, Facebook accounts, Twitter accounts, and other sources for the more difficult cases.

balanced demographically. Because I’m interested in the responsiveness of political elites, my outcome measure, *Email Response*, is coded 1 if a response came from an email account associated with the legislator within two weeks, and 0 otherwise; I don’t count auto-responses as replies.¹⁷

Table 1: Demographic Balance Across Treatment Groups

| | Male Name | Female Name | <i>p</i> -value of Difference |
|-----------------------|-------------|-------------|-------------------------------|
| Female Legislator | 0.29 (0.46) | 0.29 (0.46) | 0.99 |
| Male Legislator | 0.71 (0.46) | 0.71 (0.46) | 0.99 |
| Municipal Legislator | 0.47 (0.50) | 0.49 (0.50) | 0.62 |
| Provincial Legislator | 0.33 (0.47) | 0.33 (0.47) | 0.97 |
| Federal Legislator | 0.19 (0.40) | 0.18 (0.39) | 0.55 |
| Left Party Ideology | 0.10 (0.30) | 0.11 (0.32) | 0.48 |
| Center Party Ideology | 0.16 (0.37) | 0.16 (0.37) | 0.84 |
| Right Party Ideology | 0.16 (0.36) | 0.14 (0.35) | 0.32 |
| % Bounced Email | 0.00 (0.05) | 0.00 (0.06) | 0.65 |
| N | 890 | 889 | |

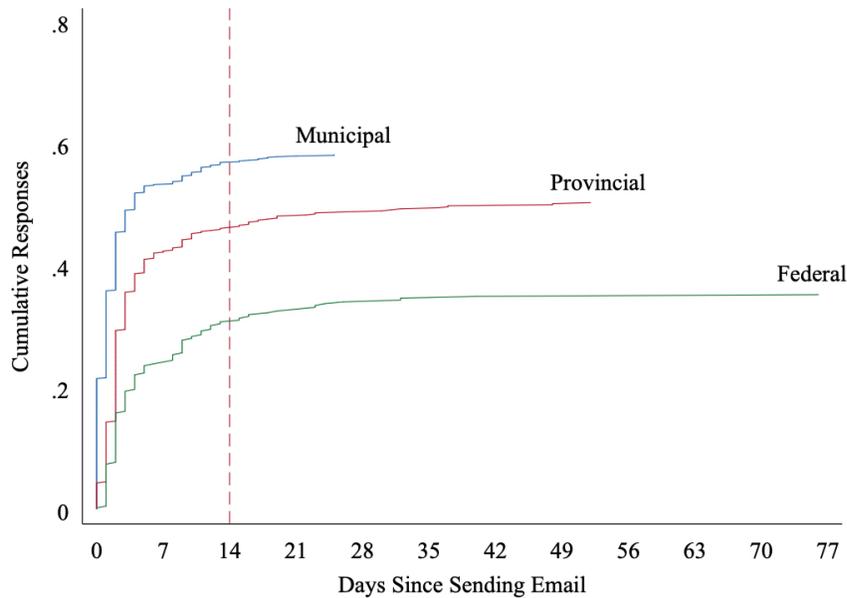
Note: Table 1 indicates the means for different demographic variables across the two treatment groups; standard deviations are shown in parentheses. The column *p-value of Difference* refers to the *p*-value from a difference-in-means test across the two treatment groups.

Results and Discussion

Before evaluating the specific hypotheses, I discuss the response rate in general. Almost half of the legislators in Canada responded to the email they received. Specifically, 864 (49%) of the 1,774 emails that were successfully sent received a response. This response rate was significantly higher than the 26% response rate in the United States (Kalla, Rosenbluth and Teele, 2018). The response rates decrease as we move from the local to the national level — the response rate was 57% for legislators at the municipal level, 46% for legislators at the provincial level, and 31% for legislators at the federal level. The upcoming reported response rates are based on responses that were received within two weeks of the original email message

¹⁷As with all audit experiments of this type, there’s no guarantee that the legislator is the person to receive and respond to the student’s email message. Technically, therefore, the unit of analysis is the email address of the legislator and not the legislator. In many cases, it’s possible to identify whether a staff member has sent the email response rather than the legislator. My inferences are robust to excluding those responses that are identified as coming from a staff member. A more detailed discussion of this issue can be found in [Online Appendix C](#).

Figure 2: Cumulative Response Rates by Level of Government



Note: Figure 2 shows the cumulative response rate across the different levels of government. The horizontal axis indicates the number of days since the original email message was sent; the last response was received 76 days after the original email was sent. The vertical axis indicates the cumulative proportion of responses received. The vertical dashed line at 14 days indicates the two-week cutoff for my upcoming analyses.

being sent. In Figure 2, I show the cumulative response rates across the various levels of government over time. As Figure 2 indicates, the temporal pattern of responses was very similar across the three levels of government, and almost all of the legislators who responded did so within two weeks of receiving the email from the hypothetical student. This is consistent with previous audit studies dealing with political elites, in which almost all responses were received within an initial two week window (Costa, 2017).¹⁸ Interestingly, there's no substantive difference in the overall response rates for female (48%) and male (49%) legislators.

Table 2 provides information about response rates by treatment name and legislator gender. The first row shows how the overall response rate of the legislators varies depending on whether the hypothetical student sending the email message is female or male. The second and third rows show the response rates broken down by legislator gender. 95% confidence intervals are shown in square brackets. Recall that the *Gender Bias Hypothesis* predicts that legislators will be more responsive to male political aspirants than female ones and that the *Equal Response Hypothesis* predicts that the gender of the political aspirants will have no effect on the response rates. The results from the audit experiment falsify both hypotheses.

¹⁸The two week window is consistent with the research design in my pre-registration plan. As I demonstrate in Online Appendix D, the inferences from my upcoming analysis are robust to including the responses that came after the two week cutoff.

Table 2: Response Rates by Treatment Name and Legislator Gender

| | Male Name | Female Name | Difference | <i>p</i> -value of Difference |
|--------------------|-------------------------------------|-------------------------------------|-----------------|-------------------------------|
| All Legislators | 45% [42%, 48%] <i>N</i> = 888 | 52% [49%, 56%] <i>N</i> = 886 | 7 [2, 12] | 0.01 |
| Female Legislators | 42% [36%, 49%] <i>N</i> = 259 | 54% [48%, 60%] <i>N</i> = 258 | 11 [4, 19] | 0.01 |
| Male Legislators | 46% [42%, 50%] <i>N</i> = 629 | 52% [48%, 56%] <i>N</i> = 628 | 6 [-0.3, 12] | 0.06 |

Note: The first two columns of Table 2 show the response rates to the email messages sent from male and female students for different sets of legislators. The third column indicates the percentage-point-difference in response rates, with positive differences indicating a pro-women bias. The 95% confidence intervals are shown in square brackets. The fourth column indicates whether the differences are statistically significant. The *p*-values come from a linear probability model where *Email Response* is the dependent variable and the model includes strata fixed effects (gender of legislator) and robust standard errors clustered at the email account level.

Canadian legislators respond to female students (52%) at higher rates than male students (45%). This pro-women bias of 7 percentage points is statistically significant ($p = 0.01$) and can be attributed solely to the gendered name manipulation in the experiment.¹⁹ When Kalla, Rosenbluth and Teele (2018) conducted the same experiment on legislators in the United States, they found no evidence of gender discrimination by political elites against female aspirants. This result, which ran counter to expectations in the literature, raised concerns about external validity and made one wonder whether similar results would be found in other contexts. The results from my audit experiment in Canada also reveal no evidence of gender discrimination against female political aspirants. Indeed, unlike the study in the United States, I find evidence of a pro-women bias.

But does the gender of the legislator matter? According to the *Gender Affinity Hypothesis*, male

¹⁹The reported *p*-values come from a linear probability model (LPM) where the binary dependent variable is *Email Response*. In the LPM, I include strata fixed effects, where the strata are defined in terms of legislator gender. I also employ robust standard errors to deal with potential heteroskedasticity in the LPM and cluster these errors on the email account to take account of the fact that observations using the same email account may not be completely independent. There are 26 email accounts used in this study — one for each female and male name. One criticism of cluster-robust standard errors is that they're asymptotic to the number of clusters and I only have 26 email accounts (Wooldridge, 2003, 135). My results are robust to not clustering, as well as using a difference-in-proportion test that employs a cluster-robust bootstrap procedure (Cameron and Trivedi, 2010, 420-1). While I follow current practices in the experimental literature in using an LPM because it's easy to interpret and provides an unbiased estimate of the average treatment effect (Lin, 2013; Judkins, 2016), my inferences are also robust to using a simple difference-in-proportions test or estimating a logit model.

legislators are expected to be more responsive to male political aspirants and female legislators are expected to be more responsive to female ones. The fact that we already know that women are more likely on average to receive a reply than men is, on its face, an argument against the gender affinity story. Since there are more men in elected positions in Canada, the gender affinity story predicts that we should have observed a higher average response rate for male political aspirants. Nonetheless, we can examine the *Gender Affinity Hypothesis* more directly by looking at the response rates of female and male legislators separately. The core finding is that both female and male legislators exhibit a substantively large and statistically significant pro-women bias in their response rates. The pro-women bias exhibited by female legislators (11 percentage points) is, after accounting for rounding, twice as large as that exhibited by male legislators (6 percentage points).²⁰

There's evidence that this pro-women bias in response rates also translates into a pro-women bias in terms of meaningful responses and micro-mentorship more generally. To evaluate this requires looking at the actual content of the email responses. There are several ways to do this.²¹ One approach is to examine whether the responses contained substantive advice or not (Kalla, Rosenbluth and Teele, 2018).²² For example, email responses in which the legislator suggested that the student should (i) run for student government, (ii) learn about the issues, (iii) attend local party or political meetings, (iv) learn to be extroverted, or (v) always put their values first were coded as providing substantive advice. About 26% of the responses were coded as giving substantive advice. Of the responses that didn't specifically offer substantive advice, many encouraged the student to call or set up a meeting. Overall, there's a statistically significant 3 percentage points pro-women bias among all legislators when it comes to receiving substantive advice. A second approach employs a new measure of elite responsiveness for audit studies developed by Costa (2020). This measure distinguishes between responses that are meaningful and those that only satisfy some minimum required effort on the part of the legislator. Using this "quality of response" measure, I again find a statistically significant pro-women bias (6 percentage points) among Canadian legislators. Finally, we might

²⁰These results differ slightly to those found in the United States. Kalla, Rosenbluth and Teele (2018) find that female legislators respond to men (27%) and women (27%) at similar rates, but that male legislators exhibit a small pro-women bias (27% versus 24%). There's no significant difference in the rates at which female and male legislators respond to female political aspirants. In neither study do male or female legislators ever exhibit gender discrimination against female political aspirants.

²¹Space constraints limit my ability to fully discuss the content of the email responses in the main text. However, a more in depth discussion can be found in [Online Appendix E](#). I find an overall pro-women bias across nine different metrics; this bias is statistically significant in eight of these cases.

²²Evaluating the content of the email responses can lead to post-treatment bias as the responses are a consequence of the treatment (Montgomery, Nyhan and Torres, 2018). To avoid this possibility, I redefine the outcome measure for my analysis of the content so that it's not conditional on having received a response (Coppock, 2019). Practically-speaking, this means also coding non-responses as not providing substantive advice.

suspect that longer responses are more substantively meaningful than shorter ones. On this metric, I find that the responses to female political aspirants are significantly longer and contain more characters than those to male political aspirants.

While there's an overall pro-women bias in terms of responsiveness among legislators in Canada, it's still possible that there's a glass ceiling effect where female political aspirants do less well as we move from the local to the national level. Table 3 provides information about response rates by treatment name, level of office, and legislator gender. There are three main sections that each relate to legislators at either the municipal, provincial, or federal levels. Within each section, the first row shows how the overall response rate at the specified level of government varies depending on whether the hypothetical student sending the email message is female or male. The second and third rows in each section show the response rates broken down by whether the legislator is female or male. Again, 95% confidence intervals are shown in square brackets. Contrary to the *Levels of Office Hypothesis*, there's a pro-women bias at all three levels of government. Significantly, the magnitude of this bias is fairly consistent across the different levels. Specifically, the pro-women bias is 7 percentage points at the municipal level, 8 percentage points at the provincial level, and 6 percentage points at the federal level. This overall pro-women bias is only statistically significant at conventional levels at the municipal level. However, this may well be due to the fact that the sample size shrinks markedly as we move from the municipal to the federal level. While a pro-women bias is exhibited by both female and male legislators at each level of government, the magnitude of the pro-women bias is typically larger for female legislators. At the municipal level, the pro-women bias exhibited by female legislators (12 percentage points) is 2.5 times larger than that exhibited by male legislators (5 percentage points). At the provincial level, the pro-women bias exhibited by female legislators (15 percentage points) is three times larger than that exhibited by male legislators (5 percentage points). There's no substantive difference in the magnitude of the pro-women bias across female and male legislators at the federal level. Indeed, it's only at the federal level that the pro-women bias exhibited by female legislators is not statistically significant.

Are there partisan effects? According to the *Left-Wing Partisan Hypothesis*, legislators from left-leaning parties will be more responsive to female political aspirants than legislators from right-leaning ones. In what follows, I focus on the three largest political parties that exist at the federal level in Canada: the New Democratic Party (NDP), the Liberal Party, and the Conservative Party. On a left-right ideological scale, the

Table 3: Response Rates by the Treatment Name, Level of Office, and Legislator Gender

| | Male Name | Female Name | Difference | <i>p</i> -value of Difference |
|--------------------|-------------------------------------|-------------------------------------|-----------------|-------------------------------|
| <i>Municipal:</i> | | | | |
| All Legislators | 54% [49%, 59%] <i>N</i> = 421 | 61% [56%, 65%] <i>N</i> = 429 | 7 [2, 11] | 0.01 |
| Female Legislators | 48% [39%, 57%] <i>N</i> = 123 | 60% [51%, 69%] <i>N</i> = 119 | 12 [1, 22] | 0.03 |
| Male Legislators | 56% [51%, 62%] <i>N</i> = 298 | 61% [56%, 66%] <i>N</i> = 310 | 5 [-0.5, 10] | 0.08 |
| <i>Provincial:</i> | | | | |
| All Legislators | 42% [37%, 48%] <i>N</i> = 295 | 51% [45%, 56%] <i>N</i> = 295 | 8 [-2, 18] | 0.12 |
| Female Legislators | 41% [31%, 51%] <i>N</i> = 93 | 56% [46%, 66%] <i>N</i> = 93 | 15 [-1, 31] | 0.07 |
| Male Legislators | 43% [36%, 50%] <i>N</i> = 202 | 48% [41%, 55%] <i>N</i> = 202 | 5 [-6, 16] | 0.35 |
| <i>Federal:</i> | | | | |
| All Legislators | 28% [21%, 35%] <i>N</i> = 172 | 34% [27%, 41%] <i>N</i> = 162 | 6 [-4, 16] | 0.21 |
| Female Legislators | 30% [16%, 45%] <i>N</i> = 43 | 35% [20%, 49%] <i>N</i> = 46 | 5 [-13, 22] | 0.60 |
| Male Legislators | 27% [19%, 35%] <i>N</i> = 129 | 34% [25%, 42%] <i>N</i> = 116 | 6 [-4, 17] | 0.20 |

Note: The first two columns of Table 3 show the response rates to the email messages sent from male and female students for different sets of legislators separated by level of office. The third column indicates the percentage-point-difference in response rates, with positive differences indicating a pro-women bias. The 95% confidence intervals are shown in square brackets. The fourth column indicates whether the differences are statistically significant. The *p*-values come from a linear probability model where *Email Response* is the dependent variable and the model includes strata fixed effects (gender of legislator) and robust standard errors clustered at the email account level.

NDP is on the left, the Liberal Party is center-left, and the Conservative Party is on the right. Demographically, Canadian parties differ in their gender composition. In line with the literature (Caul, 1999, 2001; Kittilson, 2006; Salmond, 2006; Medeiros, Forest and Erl, 2019), the proportion of female legislators in my sample is highest in the left-leaning NDP (101 men and 88 women) and lowest in the right-leaning Conservative Party (215 men and 48 women); the proportion of female legislators in the center-left Liberal Party is in between (200 men and 85 women). Ideologically, the three parties differ in their support for enhancing political access for women. The NDP is a social democratic party that has been at the forefront of enhancing the electoral representation of women (Matland and Studlar, 1996; Young and Cross, 2003; Cross, 2004; Pruyers and Cross, 2016). Furthermore, the NDP and the Liberal Party have both taken more concrete steps than the Conservative Party to increase diversity and in particular increase the representation of women (Young and Cross, 2003; Cross, 2004; Pruyers and Cross, 2016). At the provincial level, there's considerable variation in party systems, both in terms of the identities of the parties competing but also in the extent to which these parties are organizationally integrated with the parties competing at the national level (Thorlakson, 2009). It's possible, however, to classify many of the provincial parties into broad ideological categories associated with the left, the center, and the right.²³ Elections at the municipal level tend to be non-partisan; as a result, my upcoming discussion focuses on the effect of partisanship at only the federal and provincial levels.

Table 4 provides information about response rates by treatment name, party ideological type, and legislator gender. There are three main sections in the table depending on whether the legislator is associated with a left, center, or right party. Within each section, the first row shows how the overall response rate in the specified party varies depending on whether the hypothetical student sending the email message is female or male. The second and third rows in each section show the response rates broken down by whether the legislator is female or male. As before, 95% confidence intervals are shown in square brackets. The legislators from all three party types exhibit an overall pro-women bias. However, in line with the *Left-wing Partisan Hypothesis*, the legislators from the left-wing parties respond at higher rates (57%) to female poli-

²³Parties that are coded as left-wing include the Alberta New Democratic Party, the New Democratic Party, the New Democratic Party of British Columbia, the New Democratic Party of Manitoba, the New Democratic Party of Ontario and the Nova Scotia New Democratic Party. Parties that are coded as centrist include the Alberta Liberal Party, the Liberal Party, the Manitoba Liberal Party, the Nova Scotia Liberal Party, the Ontario Liberal Party, the Prince Edward Island Liberal Party, and the Alberta Party. Parties that are coded as right-wing include the Conservative Party, the Prince Edward Island Progressive Conservative Party, the Progressive Conservative Association of Nova Scotia, the Progressive Conservative Association of Alberta, the Progressive Conservative Party of Manitoba, the Progressive Conservative Party of Ontario, the Saskatchewan Party and the United Conservative Party. Provincial legislators from other parties are omitted from the upcoming analysis.

Table 4: Response Rates by the Treatment Name, Party Ideology, and Legislator Gender

| | Male Sender | Female Sender | Difference | <i>p</i> -value of Difference |
|----------------------|-------------------------------------|-------------------------------------|-----------------|-------------------------------|
| <i>Left Party:</i> | | | | |
| All Legislators | 46% [35%, 56%] <i>N</i> = 90 | 57% [47%, 67%] <i>N</i> = 99 | 11 [-5, 27] | 0.16 |
| Female Legislators | 44% [27%, 60%] <i>N</i> = 39 | 55% [41%, 70%] <i>N</i> = 49 | 11 [-13, 36] | 0.34 |
| Male Legislators | 47% [33%, 61%] <i>N</i> = 51 | 58% [44%, 72%] <i>N</i> = 50 | 11 [-9, 31] | 0.27 |
| <i>Center Party:</i> | | | | |
| All Legislators | 35% [27%, 43%] <i>N</i> = 141 | 44% [36%, 53%] <i>N</i> = 144 | 9 [-2, 20] | 0.12 |
| Female Legislators | 30% [15%, 45%] <i>N</i> = 40 | 51% [36%, 66%] <i>N</i> = 45 | 21 [6, 37] | 0.01 |
| Male Legislators | 38% [28%, 47%] <i>N</i> = 101 | 41% [32%, 51%] <i>N</i> = 99 | 3 [-12, 19] | 0.62 |
| <i>Right Party:</i> | | | | |
| All Legislators | 42% [34%, 50%] <i>N</i> = 138 | 48% [39%, 57%] <i>N</i> = 124 | 6 [-9, 20] | 0.41 |
| Female Legislators | 61% [39%, 82%] <i>N</i> = 23 | 54% [33%, 76%] <i>N</i> = 24 | -7 [-32, 18] | 0.59 |
| Male Legislators | 38% [29%, 47%] <i>N</i> = 115 | 47% [37%, 57%] <i>N</i> = 100 | 9 [-6, 24] | 0.24 |

Note: The first two columns of Table 4 show the response rates to the email messages sent from male and female students for different sets of legislators separated by party ideology. The third column indicates the percentage-point-difference in response rates, with positive differences indicating a pro-women bias. The 95% confidence intervals are shown in square brackets. The fourth column indicates whether the differences are statistically significant. The *p*-values come from a linear probability model where *Email Response* is the dependent variable and the model includes strata fixed effects (gender of legislator) and robust standard errors clustered at the email account level.

tical aspirants than legislators from the right-wing parties (48%). Moreover, the pro-women bias exhibited by legislators from the left-wing parties (11 percentage points) is almost two times larger than that exhibited by legislators from the right-wing parties (6 percentage points). On the whole, both female and male legislators from each of the party types respond to female political aspirants at a higher rate than male political aspirants. The only time when this isn't the case comes when we look at female legislators from the right-wing parties; these particular legislators demonstrate a pro-men bias (−7 percentage points).

Conclusion

Women remain significantly underrepresented in politics in virtually every country in the world. The political recruitment process consists of three stages: (i) self-selection, (ii) party selection, and (iii) voter selection. While there's evidence that gender discrimination against women exists at all three of these stages, the earlier stages appear to be more problematic for women's representation (Fox and Lawless, 2004, 2010; Thomas and Bodet, 2013). In this article, I've examined whether there's elite gender discrimination in an informal phase of the recruitment process where political aspirants are seeking encouragement or mentorship from elites to start a political career. This is a particularly important phase of the recruitment process as studies have repeatedly shown that elite encouragement, especially for women, plays an influential role in getting political aspirants to put themselves forward as potential candidates (Fox and Lawless, 2004; Niven, 2006; Karpowitz, Monson and Preece, 2017).

To identify if there's gender discrimination against female political aspirants, I employ an email audit experiment. Audit experiments are particularly well suited to investigating sensitive topics such as gender discrimination as they mitigate concerns that researchers might have with social desirability and selection biases and help overcome methodological problems with omitted variable and post-treatment biases that affect studies that rely on observational data. Audit studies also have the advantage that they provide us with a behavioral, as opposed to a reported behavioral or attitudinal, measure of discrimination. For those interested in increasing women's political representation, especially in Canada, the results from my experiment are promising. Overall, I find no evidence that Canadian legislators discriminate against female political aspirants who contact them.²⁴ Indeed, legislators in Canada appear to be both significantly more responsive and helpful to female political aspirants than male ones. This pro-women bias, which exists at all levels of

²⁴As mentioned in footnote 13, my audit experiment technically only speaks to gender discrimination as it relates to university-educated Anglo-Canadian female political aspirants.

Canadian government, is stronger among female legislators and those associated with left-leaning parties.

One of the goals of this research was to examine the generalizability of the results from a similar audit experiment conducted by [Kalla, Rosenbluth and Teele \(2018\)](#) in the United States. That study found that there was no significant difference in the response rates of legislators to female and male political aspirants. One of the common concerns raised with experimental research has to do with external validity. To what extent do the results from one experiment generalize to other contexts? This concern is particularly pertinent when the findings of an experiment, like the one conducted by [Kalla, Rosenbluth and Teele \(2018\)](#), run counter to expectations in the literature. As my audit experiment indicates, the result that female political aspirants don't experience elite gender discrimination in this informal phase of the political recruitment process does generalize beyond the United States, at least to Canada. I encourage scholars to further evaluate the external validity of these findings by examining whether they generalize to additional cases.

While the responsiveness of legislators to female political aspirants who express an interest in politics doesn't necessarily imply that parties are actually going to nominate them as candidates,²⁵ the results of these audit experiments in the United States and Canada should be encouraging for women who are thinking about a career in politics. Furthermore, these results suggest that to the extent that gender discrimination against women does exist in the early stages of the political representation process, it doesn't occur in this informal phase — when political aspirants are seeking advice on how to start a political career — but at some other point in the process of going from a citizen to a legislator. On this point, it's worth noting that the email requests for advice in these audit experiments come from “self-starters” who had already self-identified as political aspirants and decided to reach out for help ([Kalla, Rosenbluth and Teele, 2018](#)). It's possible that a gender bias exists even earlier in the recruitment process when men and women are thinking about whether a career in politics is for them. To the extent that women are concerned that they won't receive support if they put themselves forward, the results from these audit experiments should be particularly reassuring.

Ultimately, if women's political representation is to increase, it's important to identify exactly where gender discrimination occurs and why. Audit experiments are an important part of the methodological toolkit for studying gender discrimination as they can help us understand exactly where and how gender distortions are occurring.

²⁵It's important to remember, for example, that elected legislators are not typically directly involved in the selection of party candidates ([Carty and Eagles, 2005](#); [Sayers, 1999](#); [Cross, 2002, 2006, 2016](#); [Cross and Pruyssers, 2019](#); [Pruyssers and Cross, 2016](#)).

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Online Appendix A: What about Quebec?

The email message from the hypothetical student in my audit experiment was written in English. I chose to send the emails in English to replicate as closely as possible the empirical strategy employed by [Kalla, Rosenbluth and Teele \(2018\)](#). This has implications for Quebec with its large French-speaking population. I now address some of these implications here.

One implication is that the overall response rate for the legislators in Quebec will be lower than the response rate for the legislators elsewhere in Canada. This is borne out in the data. There are 302 Quebec legislators in my sample, 89 (29%) of whom responded to my email. This response rate is significantly lower than the overall response rate in Canada as a whole, which was 49%. Notably, though, the response rate in Quebec was still higher than the response rate of 26% in the United States.

While the overall response rate in Quebec may well have been higher had I sent my emails in French, it's unclear whether this would affect any of the inferences that I draw with respect to the *directionality* of the responses. One way to evaluate this is to look to see if the pattern of responses from Quebec is different from that found elsewhere in Canada. In [Table 5](#), I provide information about the response rates by treatment name and legislator gender *for Quebec only*. The results indicate that legislators in Quebec exhibit a pro-female bias of 7.1 percentage points. This is almost identical to the 7 percentage points pro-female bias observed in the full sample. As with the full sample, the female legislators in Quebec exhibit a higher pro-female bias (12 percentage points) than their male counterparts (5 percentage points). The magnitudes of the pro-female bias exhibited by the female and male legislators in Quebec are again almost identical to those observed in the full sample, where female legislators exhibited a pro-female bias of 11 percentage points and the male legislators exhibited a pro-female bias of 6 percentage points. Unlike with the full sample, the pro-female biases in Quebec do not reach conventional levels of statistical significance. However, this is likely due to the much smaller sample size used in the Quebec-only comparisons. The bottom line here is that the legislators in Quebec who did respond to my email message did so in an almost identical way to the legislators in the other provinces.

A second way to evaluate whether my inferences are affected by my decision to send the email message in English is to see what happens if I exclude the responses from Quebec. In [Table 6](#), I provide information about the response rates by treatment name and legislator gender in the full sample *with Quebec excluded*. The results indicate that the legislators in the full sample with Quebec excluded exhibit a pro-

Table 5: Response Rates by Treatment Name and Legislator Gender: Only Quebec

| | Male Name | Female Name | Difference | <i>p</i> -value of Difference |
|---------------------|-------------------------------------|-------------------------------------|-----------------|-------------------------------|
| All Representatives | 26% [19%, 33%] <i>N</i> = 154 | 33% [25%, 41%] <i>N</i> = 148 | 7.1 [-5, 19] | 0.22 |
| Female Legislators | 24% [12%, 36%] <i>N</i> = 54 | 36% [21%, 50%] <i>N</i> = 45 | 12 [-6, 29] | 0.19 |
| Male Legislators | 27% [18%, 36%] <i>N</i> = 100 | 32% [23%, 41%] <i>N</i> = 103 | 5 [-9, 19] | 0.47 |

Note: The first two columns of Table 5 show the response rates to the email messages sent from male and female students for different sets of elected representatives. The third column indicates the percentage-point-difference in response rates, with positive differences indicating a pro-female bias. 95% confidence intervals are shown in square brackets. The fourth column indicates whether the differences are statistically significant. The *p*-values come from a linear probability model where *Email Response* is the dependent variable and the model includes strata fixed effects (gender of legislator) and robust standard errors clustered at the email account level.

Table 6: Response Rates by Treatment Name and Legislator Gender: Excluding Quebec

| | Male Name | Female Name | Difference | <i>p</i> -value of Difference |
|--------------------|-------------------------------------|-------------------------------------|----------------|-------------------------------|
| All Legislators | 49% [45%, 53%] <i>N</i> = 734 | 56% [53%, 60%] <i>N</i> = 738 | 7.2 [1, 13] | 0.02 |
| Female Legislators | 47% [40%, 54%] <i>N</i> = 205 | 58% [51%, 64%] <i>N</i> = 213 | 11 [1, 19] | 0.03 |
| Male Legislators | 50% [45%, 54%] <i>N</i> = 529 | 56% [51%, 60%] <i>N</i> = 525 | 6 [-1, 12] | 0.07 |

Note: The first two columns of Table 6 show the response rates to the email messages sent from male and female students for different sets of elected representatives. The third column indicates the percentage-point-difference in response rates, with positive differences indicating a pro-female bias. 95% confidence intervals are shown in square brackets. The fourth column indicates whether the differences are statistically significant. The *p*-values come from a linear probability model where *Email Response* is the dependent variable and the model includes strata fixed effects (gender of legislator) and robust standard errors clustered at the email account level.

female bias of 7.2 percentage points. This is almost identical to the 7 percentage points pro-female bias observed in the full sample. Again, the female legislators exhibit a higher pro-female bias (11 percentage points) than their male counterparts (6 percentage points). The magnitudes of these pro-female biases exhibited by the female and male legislators are identical to those observed in the full sample, where female legislators exhibited a pro-female bias of 11 percentage points and the male legislators exhibited a pro-female bias of 6 percentage points. The pattern of statistical significance across the three groups – All Legislators, Female Legislators, and Male Legislators — is also identical to that found in the full sample.

We can also look at how the response rates differ across the different levels of government when we exclude the responses from Quebec. This information is shown in Table 7. The main thing to note here is that there is always a pro-female bias at each level of government. As in the full sample that includes Quebec, this pro-female bias is larger for female legislators than male legislators at the municipal and provincial levels. At the municipal level, the pro-women bias exhibited by female legislators (11 percentage points) is 2.8 times larger than that exhibited by male legislators (4 percentage points). At the provincial level, the pro-women bias exhibited by female legislators (14 percentage points) is 2.8 times larger than that exhibited by male legislators (5 percentage points). There is no substantive difference in the magnitude of the pro-women bias across female and male legislators at the federal level.

In summary, these additional analyses show that my inferences are robust to looking only at Quebec or excluding Quebec from the full sample. As a result, my decision to send my email message only in English is not problematic.

Table 7: Response Rates by the Treatment Name, Level of Office, and Legislator Gender: Excluding Quebec

| | Male Name | Female Name | Difference | <i>p</i> -value of Difference |
|--------------------|-------------------------------------|-------------------------------------|-----------------|-------------------------------|
| <i>Municipal:</i> | | | | |
| All Legislators | 58% [53%, 64%] <i>N</i> = 339 | 64% [59%, 69%] <i>N</i> = 342 | 6 [-0.2, 12] | 0.06 |
| Female Legislators | 53% [43%, 63%] <i>N</i> = 94 | 64% [54%, 74%] <i>N</i> = 89 | 11 [-1, 22] | 0.07 |
| Male Legislators | 60% [54%, 67%] <i>N</i> = 245 | 64% [58%, 70%] <i>N</i> = 253 | 4 [-2, 10] | 0.20 |
| <i>Provincial:</i> | | | | |
| All Legislators | 50% [44%, 57%] <i>N</i> = 227 | 58% [52%, 65%] <i>N</i> = 240 | 8 [-2, 18] | 0.12 |
| Female Legislators | 49% [37%, 61%] <i>N</i> = 69 | 63% [52%, 74%] <i>N</i> = 79 | 14 [-4, 32] | 0.11 |
| Male Legislators | 51% [43%, 59%] <i>N</i> = 158 | 56% [48%, 64%] <i>N</i> = 161 | 5 [-6, 16] | 0.34 |
| <i>Federal:</i> | | | | |
| All Legislators | 29% [22%, 35%] <i>N</i> = 168 | 35% [28%, 43%] <i>N</i> = 156 | 6 [-4, 17] | 0.20 |
| Female Legislators | 31% [16%, 46%] <i>N</i> = 42 | 36% [21%, 50%] <i>N</i> = 45 | 5 [-14, 23] | 0.61 |
| Male Legislators | 28% [20%, 36%] <i>N</i> = 126 | 35% [26%, 44%] <i>N</i> = 111 | 7 [-4, 18] | 0.18 |

Note: The first two columns of Table 7 show the response rates to the email messages sent from male and female students for different sets of elected representatives separated by level of office. The third column indicates the percentage-point-difference in response rates, with positive differences indicating a pro-female bias. 95% confidence intervals are shown in square brackets. The fourth column indicates whether the differences are statistically significant. The *p*-values come from a linear probability model where *Email Response* is the dependent variable and the model includes strata fixed effects (gender of legislator) and robust standard errors clustered at the email account level.

Online Appendix B: Sample of Legislators

I obtained my sample of Canadian legislators from the [Represent Civic Information API](#). The original sample consisted of 1,936 legislators. After dropping legislators for whom an email address was not provided and ‘duplicate’ legislators who held multiple official roles, I obtained a sample of 1,779 unique legislators. In this sample, there were 854 municipal legislators (28.6% women), 591 provincial legislators (31.6% women), and 334 federal legislators (26.7% women). Ultimately, five of these legislators had an invalid email address and so my results are based on a final sample of 1,774 legislators who received an email.

Although my sample does not represent the full number of legislators across the three levels of government in Canada, the API states that it’s “the most comprehensive source in Canada for elected officials and electoral districts.” My sample of Canadian legislators is over nine times larger than that used in a recent audit study looking at the responsiveness of Canadian legislators to constituent requests for assistance ([Loewen and MacKenzie, 2019](#)). The API does not indicate why it has information about some elected representatives and not others. It appears that there is no information for legislators at the municipal and ‘provincial’ level in the three Canadian territories; the federal-level legislators are, however, included in the sample. I see no obvious reason why the legislators with contact information provided by the API would be qualitatively different when it comes to exhibiting a gender bias from the legislators for whom the API does not provide contact information.

My sample includes elected representatives from the following provincial legislatures: Legislative Assembly of Alberta, Legislative Assembly of British Columbia, Legislative Assembly of Manitoba, Nova Scotia House of Assembly, Legislative Assembly of Ontario, Legislative Assembly of Prince Edward Island, Assemblée nationale du Québec, and Legislative Assembly of Saskatchewan. It includes elected representatives from the following municipal councils: Ajax Town Council, Belleville City Council, Brampton City Council, Brantford City Council, Burlington City Council, Burnaby City Council, Caledon Town Council, Calgary City Council, Cambridge City Council, Cape Breton Regional Council, Charlottetown City Council, Conseil municipal de Beaconsfield, Conseil municipal de Dorval, Conseil municipal de Gatineau, Conseil municipal de Kirkland, Conseil municipal de Laval, Conseil municipal de Lévis, Conseil municipal de Montréal, Conseil municipal de Montréal-Est, Conseil municipal de Pointe-Claire, Conseil municipal de Saint-Jean-sur-Richelieu, Conseil municipal de Saint-Jérôme, Coquitlam City Council, County of Grande Prairie No. 1 Council, Edmonton City Council, Fredericton City Council, Georgina Town Council,

Grande Prairie City Council, Greater Sudbury City Council, Grimsby Town Council, Guelph City Council, Haldimand County Council, Halifax Regional Council, Hamilton City Council, Kelowna City Council, King Township Council, Kingston City Council, Kitchener City Council, Lambton County Council, Langley Township Council, Lethbridge City Council, Lincoln Town Council, London City Council, Mississauga City Council, Moncton City Council, Newmarket Town Council, Niagara Regional Council, North Dumfries Township Council, Oakville Town Council, Oshawa City Council, Ottawa City Council, Peel Regional Council, Peterborough City Council, Pickering City Council, Richmond City Council, Richmond Hill Town Council, Saanich District Council, Saint John City Council, Saskatoon City Council, St. Catharines City Council, Strathcona County Council, Surrey City Council, Thunder Bay City Council, Toronto City Council, Uxbridge Township Council, Vancouver City Council, Victoria City Council, Waterloo City Council, Waterloo Regional Council, Welland City Council, Whitby Town Council, Windsor City Council, and Winnipeg City Council.

Online Appendix C: Staff Responses

As I noted in the main text, there's no guarantee that the legislator is the person to receive and respond to the student's email message. This is true for all audit experiments of this type and not just the one discussed here. Thus, the unit of analysis is technically the email address of the legislator and not the legislator themselves.

It's often possible to identify when a staff member has sent the email response rather than the legislator. This is because the response either comes from a different email address or the person responding introduces themselves as the person responsible for communicating on behalf of the official. On this basis, it appears that about 38% of the email responses come from staff members. In general, we would not expect staff members to express their own views or opinions when engaging in official business. Instead, we'd expect them to express views that are consistent with those of the legislator for whom they work. Of course, if this is true, then we should see similar results to those reported in the main text when we exclude the email responses that have been identified as coming from staff members. This is exactly what I find. In Table 8, I provide information about the response rates by treatment name and legislator gender *when the staff responses are excluded*. The key thing to note is that there's still always a statistically significant pro-female bias. The overall pro-female bias is 6 percentage points in this smaller sample and 7 percentage points in the 'full' sample. Email accounts associated with both female and male legislators continue to exhibit a pro-female bias in this smaller sample. In contrast to the full sample, the pro-female bias exhibited by email accounts associated with female legislators is not larger than that exhibited by email accounts associated with male legislators.

As one might expect, the extent to which staff members send the email responses increases as we move from the local to the national level. While 17% of the responses at the municipal level came from staff, 79% of the responses at the federal level did so. This may help to explain why my results in the full sample, particularly with respect to the gender of the legislator, are weakest at the federal level — there's evidence of a pro-female bias for all legislators at the federal level, female and male legislators but it's never statistically significant. However, I can't rule out the possibility that the lack of statistical significance at the federal level is simply a result of the significantly smaller sample size at this level of government.

Table 8: Response Rates by Treatment Name and Legislator Gender: Excluding Staff Responses

| | Male Name | Female Name | Difference | <i>p</i> -value of Difference |
|---------------------|-------------------------------------|-------------------------------------|----------------|-------------------------------|
| All Representatives | 34% [30%, 37%] <i>N</i> = 735 | 40% [37%, 44%] <i>N</i> = 708 | 6 [2, 12] | 0.01 |
| Female Legislators | 33% [26%, 39%] <i>N</i> = 221 | 40% [33%, 46%] <i>N</i> = 197 | 7 [-1, 15] | 0.08 |
| Male Legislators | 34% [30%, 38%] <i>N</i> = 514 | 41% [36%, 45%] <i>N</i> = 511 | 7 [0.2, 13] | 0.04 |

Note: The first two columns of Table 8 show the response rates to the email messages sent from male and female students for different sets of elected representatives. The third column indicates the percentage-point-difference in response rates, with positive differences indicating a pro-female bias. 95% confidence intervals are shown in square brackets. The fourth column indicates whether the differences are statistically significant. The *p*-values come from a linear probability model where *Email Response* is the dependent variable and the model includes strata fixed effects (gender of legislator) and robust standard errors clustered at the email account level.

Online Appendix D: Including Responses After the 2 Week Cutoff

In the main text, I focus on only those email responses that came during the first two weeks after my initial email was sent. In this appendix, I show that my inferences are robust to the inclusion of the email responses that came after the two week cutoff. In total, 50 responses came after the two week cutoff: 11 were from legislators at the municipal level, 24 from legislators at the provincial level, and 15 from legislators at the federal level.

In Table 9, I provide information about the response rates by treatment name and legislator gender in the sample *with later responses included*. The results continue to show a pro-women bias of 7 percentage points, which is identical to the 7 percentage points pro-women bias observed in the original sample. Female legislators continue to exhibit a higher pro-women bias (10 percentage points) than their male counterparts (5 percentage points). The magnitudes of these pro-women biases are almost identical to those observed in the original sample, where female legislators exhibited a pro-women bias of 11 percentage points and the male legislators exhibited a pro-women bias of 6 percentage points.

Table 9: Response Rates by Treatment Name and Legislator Gender: Including Later Responses

| | Male Name | Female Name | Difference | <i>p</i> -value of Difference |
|--------------------|-------------------------------------|-------------------------------------|---------------|-------------------------------|
| All Legislators | 48% [45%, 52%] <i>N</i> = 888 | 55% [51%, 58%] <i>N</i> = 886 | 7 [1, 12] | 0.02 |
| Female Legislators | 47% [41%, 53%] <i>N</i> = 259 | 57% [51%, 63%] <i>N</i> = 258 | 10 [2, 18] | 0.02 |
| Male Legislators | 49% [45%, 53%] <i>N</i> = 629 | 54% [50%, 58%] <i>N</i> = 628 | 5 [-1, 11] | 0.10 |

Note: The first two columns of Table 9 show the response rates to the email messages sent from male and female students for different sets of legislators. The third column indicates the percentage-point-difference in response rates, with positive differences indicating a pro-female bias. 95% confidence intervals are shown in square brackets. The fourth column indicates whether the differences are statistically significant. The *p*-values come from a linear probability model where *Email Response* is the dependent variable and the model includes strata fixed effects (gender of legislator) and robust standard errors clustered at the email account level.

In Table 10, I show how the response rates differ across the different levels of government when I include responses that were received after two week cutoff. Again, we see a pro-women bias at each level of government. As before, this pro-women bias is larger for female legislators than male legislators at the municipal and provincial levels.

In Table 11, I look at how the response rates differ across the different types of political parties. As in the original sample, legislators from the left-leaning parties respond at higher rates (61%) to female political aspirants than legislators from the right-leaning parties (52%). The pro-women bias exhibited by the legislators in the left-leaning parties is again much larger — over three time as large — as that exhibited by the legislators in the right-leaning parties.

In sum, my results are robust to the inclusion of the email responses that came after the two week cutoff used in the main text.

Table 10: Response Rates by the Treatment Name, Level of Office, and Legislator Gender: Including Later Responses

| | Male Name | Female Name | Difference | <i>p</i> -value of Difference |
|--------------------|-------------------------------------|-------------------------------------|-----------------|-------------------------------|
| <i>Municipal:</i> | | | | |
| All Legislators | 55% [51%, 60%] <i>N</i> = 421 | 62% [57%, 66%] <i>N</i> = 429 | 7 [2, 11] | 0.01 |
| Female Legislators | 50% [41%, 59%] <i>N</i> = 123 | 61% [52%, 70%] <i>N</i> = 119 | 12 [0.4, 23] | 0.04 |
| Male Legislators | 58% [52%, 63%] <i>N</i> = 298 | 62% [57%, 67%] <i>N</i> = 310 | 4 [-1, 10] | 0.12 |
| <i>Provincial:</i> | | | | |
| All Legislators | 47% [41%, 53%] <i>N</i> = 295 | 54% [48%, 60%] <i>N</i> = 295 | 7 [-3, 17] | 0.19 |
| Female Legislators | 48% [38%, 59%] <i>N</i> = 93 | 60% [50%, 70%] <i>N</i> = 93 | 12 [-4, 28] | 0.15 |
| Male Legislators | 47% [40%, 53%] <i>N</i> = 202 | 51% [44%, 58%] <i>N</i> = 202 | 4 [-7, 16] | 0.44 |
| <i>Federal:</i> | | | | |
| All Legislators | 33% [26%, 40%] <i>N</i> = 172 | 38% [30%, 45%] <i>N</i> = 162 | 4 [-7, 15] | 0.42 |
| Female Legislators | 37% [22%, 52%] <i>N</i> = 43 | 39% [24%, 54%] <i>N</i> = 46 | 2 [-20, 24] | 0.86 |
| Male Legislators | 32% [24%, 40%] <i>N</i> = 129 | 37% [28%, 46%] <i>N</i> = 116 | 5 [-5, 16] | 0.32 |

Note: The first two columns of Table 10 show the response rates to the email messages sent from male and female students for different sets of legislators separated by level of office. The third column indicates the percentage-point-difference in response rates, with positive differences indicating a pro-female bias. 95% confidence intervals are shown in square brackets. The fourth column indicates whether the differences are statistically significant. The *p*-values come from a linear probability model where *Email Response* is the dependent variable and the model includes strata fixed effects (gender of legislator) and robust standard errors clustered at the email account level.

Table 11: Response Rates by the Treatment Name, Party Ideology, and Legislator Gender: Including Later Responses

| Received Email | Male Sender | Female Sender | Difference | <i>p</i> -value of Difference |
|----------------------|-------------------------------------|-------------------------------------|-----------------|-------------------------------|
| <i>Left Party:</i> | | | | |
| All Legislators | 51% [41%, 62%] <i>N</i> = 90 | 61% [51%, 70%] <i>N</i> = 99 | 10 [-4, 23] | 0.17 |
| Female Legislators | 54% [37%, 70%] <i>N</i> = 39 | 59% [45%, 73%] <i>N</i> = 49 | 5 [-16, 27] | 0.62 |
| Male Legislators | 49% [35%, 63%] <i>N</i> = 51 | 62% [48%, 76%] <i>N</i> = 50 | 13 [-8, 34] | 0.21 |
| <i>Center Party:</i> | | | | |
| All Legislators | 40% [32%, 48%] <i>N</i> = 141 | 47% [39%, 55%] <i>N</i> = 144 | 7 [-5, 20] | 0.24 |
| Female Legislators | 38% [22%, 53%] <i>N</i> = 40 | 56% [40%, 71%] <i>N</i> = 45 | 18 [2, 34] | 0.03 |
| Male Legislators | 41% [31%, 50%] <i>N</i> = 101 | 43% [33%, 53%] <i>N</i> = 99 | 3 [-12, 18] | 0.69 |
| <i>Right Party:</i> | | | | |
| All Legislators | 49% [41%, 58%] <i>N</i> = 138 | 52% [44%, 61%] <i>N</i> = 124 | 3 [-11, 17] | 0.69 |
| Female Legislators | 65% [44%, 86%] <i>N</i> = 23 | 63% [42%, 83%] <i>N</i> = 24 | -2 [-26, 20] | 0.81 |
| Male Legislators | 46% [37%, 55%] <i>N</i> = 115 | 50% [40%, 60%] <i>N</i> = 100 | 4 [-11, 19] | 0.60 |

Note: The first two columns of Table 11 show the response rates to the email messages sent from male and female students for different sets of legislators separated by party ideology. The third column indicates the percentage-point-difference in response rates, with positive differences indicating a pro-female bias. 95% confidence intervals are shown in square brackets. The fourth column indicates whether the differences are statistically significant. The *p*-values come from a linear probability model where *Email Response* is the dependent variable and the model includes strata fixed effects (gender of legislator) and robust standard errors clustered at the email account level.

Online Appendix E: Analyzing the Content of the Email Responses

In this appendix, I further analyze the content of the email responses from the legislators. As I note in the main text, there are different ways to analyze the content of the email responses. We can think of these approaches as the *'micro'-mentorship approach*, the *quality of response approach*, and the *length of response approach*. Below, I describe each of the approaches in more detail and then present the results. It's important to note, though, that to avoid possible post-treatment bias, the analyses presented in this appendix are *not* conditional on having received an email response. As [Coppock \(2019, 1\)](#) explains, an email "response is a post-treatment outcome" and "conditioning on post-treatment outcomes 'de-randomizes' an experiment in the sense that the resulting treatment and control groups no longer have potential outcomes that are in expectation equivalent." To avoid conditioning on having received a response, I redefine the outcome variables I'm about to create to include non-responses in the 0 category. What this means in practice is that an outcome variable that, say, indicates whether helpful advice was provided is coded as 0 if either (i) no response was received or (ii) a response was received but did not provide helpful advice; the outcome variable is coded 1 only if helpful advice was provided.

'Micro'-mentorship Approach

The *'micro'-mentorship approach* to evaluating the content of the email responses comes from [Kalla, Rosenbluth and Teele \(2018\)](#). They created several indicators of micro-mentorship by qualitatively coding whether email responses (1) were meaningful, (2) provided praise, (3) offered help, (4) provided a warning, or (5) provided advice.

1. *Meaningful Response*: The email response was coded 1 if it was determined to "contain real content".
2. *Praise*: The email response was coded 1 if it either "praises student for an interest in a political career" or provides vague praise such as "good luck with everything" or "hope this helps."
3. *Offer to help*: The email response was coded 1 if it indicated a willingness on the part of the legislator to meet, talk on the phone, or email further, or a general offer to follow up such as "If you have any other specific questions, please let me know."
4. *Warning*: The email response was coded 1 if it contained an explicit statement not to run, an encouragement to consider other career paths, or a warning of time commitment, work-life balance challenges, the difficulty of finding time for family, the challenges of fundraising, or the loss of privacy.
5. *Substantive Advice*: The email response was coded 1 if it contained either practical advice (e.g., motivational advice, get a business job, go to law school, get a different type of job, become involved in

local community groups, attend local party or political meetings, volunteer, get a mentor, fundraising advice, run for student government, learn about the issues, get a good education, always put your values first, stay loyal to your political party) or personality/image advice (e.g., always have a professional appearance, have thick skin, learn to be extroverted, learn to deal with conflict).

Quality of Response Approach

The *quality of response approach*, which has recently been developed by Costa (2020), classifies “quality” and “satisfying” responses as those that are “not automated, answers the question, arrives promptly, is at least 400 characters in length, and includes a named greeting, invitation to follow up, link to a website, and a sign-off” (Costa, 2020, 15). Responses that have all of these criteria are coded as 1. If a response is missing one of these criteria, then a specified amount is subtracted or ‘discounted’ from 1. The specific discount formula used by Costa (2020) is

$$\begin{aligned} \text{Discount} = & \text{Automated} \times 0.209 + \text{No named greeting} \times 0.048 + \text{No invite follow up} \times 0.0613 \\ & + \text{Did not answer question} \times 0.116 + \text{No website link} \times 0.0533 + \text{No sign-off} \times 0.0333 \\ & + \text{Characters} < 400 \times 0.0005 + \text{Days until response} \times 0.0033. \end{aligned}$$

The components of the discount formula are defined as:

- *Automated*: Since I classify automated responses as non-responses, any automated response in my sample actually receives a discount factor of 1. In other words, the overall quality of response for automated responses is always 0.
- *No named greeting*: This is coded 1 if the response is not personalized and 0 otherwise.
- *No invite follow up*: This is coded 1 if the response did not invite the student to follow up with further questions and 0 otherwise.
- *Did not answer question*= This is coded 1 if the response did not answer the student’s question and 0 otherwise.
- *No website link*: This is coded 1 if the response did not include a website link and 0 otherwise.
- *No sign-off*: This is coded 1 if the response did not include a sign-off (eg. Sincerely, best, regards, etc) and 0 otherwise.
- *Characters < 400*: This is coded 1 if the response was fewer than 400 characters and 0 otherwise.
- *Days until response*: This is a count of the number of days until a response came; this is capped at 30 days.

To calculate the overall *quality* of an email response, I simply subtract the discount scores from 1 for all responses that were received. To avoid post-treatment bias, I code “no replies” as having a discount factor of 1 and, thus, an overall quality score of 0.

Length of Response Approach

The *length of response approach* assumes that longer responses are more substantively meaningful than shorter ones. For this metric, I evaluate (i) the word count, (ii) the log word count, and (ii) the number of characters in a response. To avoid post-treatment bias, I code “no replies” as having 0 words/characters and as $\log(1)$ for the log word count.

Results

Having described the three different approaches, we can now turn to the results. In Table 12, I provide information about the content of the email responses by treatment name. Overall, I find a pro-women bias across all nine of the different metrics – the numbers in the *Difference* column are always positive. This pro-women bias is statistically significant in eight of these nine cases. The only metric on which the pro-women bias is not statistically significant is when we look at whether the email responses provides praise.

In Table 13, I provide information about the content of the email responses by treatment name and legislator gender. In regards to the ‘*micro*’-mentorship approach, I find a pro-women bias exists among both female and male legislators across all metrics except for *Praise*. This pro-women bias is larger and only statistically significant among male legislators. When it comes to the *quality of response approach*, I find a statistically significant pro-women bias among both female and male legislators. On the *length of response approach*, I also find a pro-women bias, with email responses to female students being significantly longer than those to male students. This pro-women bias is only statistically significant for male legislators.

Table 12: Quality of Response by Treatment Name

| | Male Name | Female Name | Difference | <i>p</i> -value of Difference |
|-------------------------------------|----------------------|----------------------|----------------------|-------------------------------|
| | <i>N</i> = 888 | <i>N</i> = 886 | | |
| <i>“Micro”-mentorship Approach</i> | | | | |
| Meaningful Response | 12% [9%, 14%] | 16% [14%, 18%] | 4 [1, 7] | 0.01 |
| Praise | 8% [7%, 10%] | 10% [8%, 12%] | 2 [-1, 4] | 0.35 |
| Offer to help | 23% [20%, 26%] | 29% [26%, 32%] | 6 [0.5, 11] | 0.03 |
| Warning | 1% [0.4%, 2%] | 3% [2%, 4%] | 2 [0.3, 4] | 0.03 |
| Substantive advice | 11% [9%, 13%] | 14% [12%, 17%] | 3 [1, 6] | 0.01 |
| <i>Quality of Response Approach</i> | | | | |
| Quality Response | 0.31 [0.29, 0.34] | 0.37 [0.34, 0.39] | 0.06 [0.02, 0.09] | 0.00 |
| <i>Length of Response Approach</i> | | | | |
| Word count | 36 [30, 41] | 46 [39, 52] | 10 [3, 17] | 0.01 |
| Log word count | 0.76 [0.71, 0.82] | 0.90 [0.84, 0.96] | 0.14 [0.05, 0.22] | 0.00 |
| Character count | 161 [137, 184] | 206 [176, 235] | 45 [14, 76] | 0.01 |

Note: The first two columns of Table 12 evaluate the content of the email responses depending on whether the original email message was sent by a male or female student. The third column indicates the difference in the content of the email response, with positive differences indicating a pro-women bias. 95% confidence intervals are shown in square brackets. The fourth column indicates whether the differences are statistically significant.

Table 13: Quality of Response by Treatment Name and Legislator Gender

| | Male Legislators | | | | Female Legislators | | | |
|-------------------------------------|----------------------|----------------------|-----------------------|-------------------------------|----------------------|----------------------|----------------------|-------------------------------|
| | Male Sender | Female Sender | Difference | <i>p</i> -value of Difference | Male Sender | Female Sender | Difference | <i>p</i> -value of Difference |
| | <i>N</i> = 629 | <i>N</i> = 628 | | | <i>N</i> = 259 | <i>N</i> = 258 | | |
| <i>“Micro”-mentorship Approach</i> | | | | | | | | |
| Meaningful Response | 11% [9%, 14%] | 16% [13%, 19%] | 5 [1, 9] | 0.01 | 13% [9%, 17%] | 15% [10%, 19%] | 2 [-4, 8] | 0.49 |
| Praise | 7% [5%, 10%] | 9% [7%, 11%] | 2 [-1, 5] | 0.28 | 11% [7%, 15%] | 11% [7%, 15%] | 0 [-6, 6] | 0.99 |
| Offer to help | 25% [21%, 28%] | 30% [27%, 34%] | 5 [0.3, 11] | 0.04 | 19% [14%, 24%] | 26% [21%, 31%] | 7 [-2, 16] | 0.12 |
| Warning | 1% [0.2%, 2%] | 4% [2%, 5%] | 3 [0.5, 5] | 0.02 | 1% [-0.2%, 2%] | 2% [0.03%, 3%] | 1 [-2, 3] | 0.71 |
| Substantive advice | 10% [8%, 13%] | 15% [12%, 18%] | 5 [0.4, 8] | 0.03 | 12% [8%, 16%] | 13% [9%, 17%] | 1 [-5, 6] | 0.76 |
| <i>Quality of Response Approach</i> | | | | | | | | |
| Quality Response | 0.32 [0.29, 0.34] | 0.36 [0.34, 0.39] | 0.04 [0.004, 0.09] | 0.03 | 0.30 [0.26, 0.35] | 0.38 [0.34, 0.42] | 0.08 [0.02, 0.14] | 0.01 |
| <i>Length of Response Approach</i> | | | | | | | | |
| Word count | 33 [28, 38] | 43 [36, 50] | 10 [2, 18] | 0.02 | 42 [31, 53] | 53 [39, 67] | 11 [-5, 27] | 0.19 |
| Log word count | 0.77 [0.70, 0.84] | 0.89 [0.82, 0.96] | 0.12 [0.01, 0.22] | 0.03 | 0.75 [0.63, 0.86] | 0.94 [0.83, 1.05] | 0.19 [0.04, 0.35] | 0.02 |
| Character count | 148 [123, 173] | 194 [162, 226] | 46 [8, 84] | 0.02 | 193 [140, 246] | 235 [170, 300] | 42 [-32, 117] | 0.25 |

Note: The first two columns of Table 13 evaluate the content of the email responses from male legislators. The third column indicates the difference in the content of the responses, with positive differences indicating a pro-women bias. 95% confidence intervals are shown in square brackets. The fourth column indicates whether the differences are statistically significant. The fifth and sixth columns evaluate the content of the email responses from female legislators. The seventh column indicates the difference in the content of the responses, with positive differences indicating a pro-women bias. The 95% confidence intervals are shown in square brackets. The eighth column indicates whether the differences are statistically significant.