Gender quotas and strategic voters: Experimental evidence from Chile's constitutional convention*

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Abstract

Incorrect beliefs and prejudice influence voting behavior and policy choices worldwide, frequently reducing the representation of historically disadvantaged groups. Can laws limiting the group identity of elected officials undo these effects? And if so, how does this impact legislator competence and how legislatures represent policy preferences of different groups? I examine these issues in the context of Chile's constitutional conventional election, which was the first election to mandate gender parity in both candidate lists and elected officials without limiting voter choice. I induce experimental variation in voter awareness of these mandates by randomizing an electoral booth-level voter information campaign. In treated booths, voters were informed that gender parity for elected officials would be enforced. I have three experimental results. First, treatment increased women's average vote share by 1%. Second, voters in treated booths voted for the gender they believed would be electorally favored by the mandate while maintaining their party affiliation, with the potential to change outcomes in close elections. Third, treatment decreased votes for less competent men. Finally, data on individual bills indicate that elected female legislators voted more liberally on social issues such as abortion and domestic violence. In contrast, there are no gender-based voting differences for economic and administrative bills. Overall, these findings support the use of electoral mandates as a coordinating device that, when well-designed, can increase the average legislator's competence and the extent to which policy-making processes reflect voter preferences.

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1 Introduction

In representative democracies, citizens seek lawmakers who represent their ideas and policy concerns. However, prejudice and discrimination (possibly due to incorrect beliefs) frequently reduce the representation of certain groups, even when they have a substantial population share and distinct preferences. The underrepresentation of women in politics is a prominent example[1]. According to a large literature, women politicians better represent the policy interests of female voters and are frequently preferred by female voters (Dolan, 1998; Chattopadhyay and Duflo, 2004; Schwindt-Bayer, 2006; Clots-Figueras, 2012; Hessami and Lopes da Fonseca, 2020; Bruce et al., 2022; Schwarz and Coppock, 2022). In order to increase female representation, many countries have introduced gender quotas into their legislation (Norris, 2004). In 2022, 44 democracies placed requirements on parties' candidate gender mix while not constraining citizens vote choice. However, women are typically elected at lower rates than the percentage set by the quota (Krook, 2016). In 36 of the 44 countries, the proportion of women elected is lower than the candidate quota, as shown in figure 1.

A possible policy response is to impose parity requirements on the representative mix after elections. However, results constraints that do not restrict voters' gender choice may result in representatives of the group targeted by the quota being elected with a small number of votes, thereby representing the preferences of a small group of people and possibly electing candidates who are substantially less qualified on other dimensions. These issues motivate the question studied in this paper: Do citizens change their voting behavior in the face of a mandate altering elected representatives' identity, and if so, how does this affect competence of politicians?

To answer these questions, I study the election of members of Chile's constitutional convention in May 2021, the first election to mandate gender parity for candidates and elected representatives without limiting voters' gender choice. Election results were adjusted in each district to ensure gender equality. The new gender parity rule was approved only a year before

[1] As of January 2022, only 26 percent of all national parliamentarians are women (Inter-Parliamentary Union).

the election. Multiple surveys with national and regional representation conducted prior to the election revealed a high level of interest in the election but a lack of information on the electoral rules (Data Influye, 2020; Espacio Público, 2021; Urrejola, 2021). Through a voter information campaign, I thus induce experimental variation in voter knowledge of the election rules. By using administrative data on voting outcomes, I provide causal evidence of voters' strategic behavior in the presence of a gender quota.

The information campaign consisted of a letter sent to voters in two treatment arms a week before the election. The randomization was done at the voting booth level, taking advantage of the fact that voting booths are small electoral units, with each voter assigned to one in advance and the results published at the voting booth level. As a result of the treatment design, I was able to compare the election outcomes of voters in treated versus control voting booths. The two treatment arms were small variations on the same letter. The candidate treatment arm letter provided general information about the election and the candidate's gender quota. It stated that gender parity in candidate selection would be ensured because each electoral list must include an equal number of male and female candidates. The elected treatment arm's letter contained the same information as the candidate treatment arm, but it also included information on gender parity in elected officials as well as an example of how equal gender representation will be achieved. Given the significance of providing a reliable source of information (Dynarski et al., 2021), I partnered with the United Nations Development Programme (PNUD) to increase voter trust in the information provided.

First, I analyze whether the intervention resulted in a change in the overall vote share of women across all coalitions participating in the election. The effect of the treatment is an approximately 0.7 percentage point increase on average in the vote share of women in treated voting booths.

Second, I hypothesize that when voters are informed about the gender quota, their perceptions of each candidate's eligibility change, as candidates who would not have won without the gender quota could replace candidates from the overrepresented gender. As a result of

the gender quota, coalitions that previously had a higher likelihood of electing men now face the possibility that female candidates would replace their male candidates. Therefore, the gender quota in these coalitions increased the likelihood of women being elected. The opposite is true in coalitions where women were more likely to be elected than men.

To test this, I define two distinct types of electoral lists for separating coalitions based on gender preference. In addition to the gender quota, independent candidates were allowed to run together on a single electoral list of multiple candidates for the first time. This reform permitted independent candidates (mostly first-time nominees) to compete equally with political party candidates, who have always been allowed to compete in electoral lists. The inclusion of independent coalitions broadened the ideological and gender distribution of candidates – I show that while traditional political parties[2] were pro-male as measured by the gender gap in candidate campaign contributions and vote share for members of the constitutional convention; the reverse was true for the independent list. Traditional parties and independent candidates had substantial ideological differences, given the political context. I contend that votes are partisan, with individuals only voting for candidates in their preferred coalition.

Using experimental data, I test my pre-specified hypothesis that when informed about the gender quota, citizens make partisan and strategic gender selections. On the one hand, the intervention left party vote shares unaffected, indicating that voters are partisan. On the other hand, consistent with the nature of strategic voting, I find that independent voters reduced their votes for women by approximately two percentage points when provided with information. In comparison, traditional party voters increased their votes for women by approximately three percentage points. This effect had the potential to change the elected candidates in 5 of the 12 cases where gender replacement was enforced in the country.

Thirdly, I explore whether strategic voter decisions result in a greater emphasis on ability when coordinating away from their party's preferred gender. I focus on candidate compe-

[2]Traditional parties are defined as the parties that had representation in congress before the election. A complete definition is available in Section 2

tence, as proxied by test scores for college admissions. This proxy has been utilized in the past because it correlates positively with other political efficiency outcomes, including citizen satisfaction and local public-finance outcomes (Besley et al., 2017). In Chile, I show that test scores correlate positively with vote share, support for independent candidates, and the probability of being elected president or vice president of the constitutional convention. I find that the competence of the voted men from traditional parties improves as men with low test scores lose votes, while women's competence remains stable. For independent groups, I find that the intervention did not affect the competence of men or women.

Lastly, I examine the voting behavior in the constitutional convention of elected officials. This analysis, while non-experimental, speaks to the policy influence of women in legislatures. Bill-level data on the voting behavior of elected members on constitutional articles indicates that female legislators voted more liberally on social issues such as abortion and domestic violence. In contrast, there are no gender-based voting differences for economic and administrative bills.

This paper contributes to several strands of the literature. Small experiments conducted in a laboratory setting offer experimental variation for the study of strategic voting (Forsythe et al., 1996; Blais et al., 2010). However, the external validity of laboratory experiments relies on the assumption that participants have the same incentives in the laboratory as they do when voting in elections. On the other hand, empirical evidence of strategic behavior has also been found in studies utilizing administrative data (Fujiwara, 2011; Kawai and Watanabe, 2013). In this paper, I provide experimental evidence of the strategic behavior of voters by using administrative data.

Existing literature on gender quotas has investigated how the behavior of parties changes when gender quotas are implemented. Prior research has focused on how the composition of candidates shifts, where they are positioned, and how voters vote after their options change (Esteve-Volart and Bagues, 2012; Besley et al., 2017; Fréchette et al., 2008; Baltrunaite et al., 2019). As the candidate pool is selected prior to my information campaign, my paper contributes to the literature by demonstrating how information influences voter behavior

while party behavior remains constant. Consequently, I examine how the characteristics of the elected changed in response to voter behavior.

As a result of data limitations, the majority of previous studies on political selection used years of education and pre-office income as a measure of ability (Besley et al., 2005; Ferraz and Finan, 2009; Galasso and Nannicini, 2011; Besley and Reynal-Querol, 2011). More recently, a very detailed characterization of politicians in Sweden was made by Dal Bó et al. (2017) and (Dal Bo et al., 2021). In this paper, I characterize independent candidates and investigate how they differ from candidates of traditional parties.

Multiple studies have determined that gender quotas impact the competence of elected candidates. The evidence suggests that gender quotas either improve or maintain the quality of politicians (Murray, 2010; O'Brien and Rickne, 2012; Baltrunaite et al., 2014; Weeks and Baldez, 2015; Bagues and Campa, 2021). Besley et al. (2017) is one of the first studies to collect data on candidates as opposed to elected politicians, by using novel measures of competence, such as test scores, which correlate strongly with multiple dimensions of competence but are only available for men. The gender quota improved the competence of male candidates by changing their selection, according to the study's findings. This paper investigates the relationship between strategic voter behavior and the quality of politicians in Chile, using college admissions test scores as a proxy for competence. My findings indicate that the quota increases the competence of male candidates for office. However, the proposed mechanism is undocumented in the literature. I contend that when voters shift away from their party's preferred gender, they place greater emphasis on the candidate's qualifications.

The rest of the paper is organized as follows. Section 2 provides details about the rules of the election, including the gender quota and the inclusion of independent candidates. Section 3 describes the sample and design of the information campaign, Section 4 shows the results of the experiment on voter behavior, and Section 5 concludes.

2 Background

Below, I provide a brief overview of the new constitution referendum and the election rules for selecting the constitutional committee, focusing on two types of electoral engineering innovations: gender quotas for elected members and electoral lists for independent candidates. I conclude with an overview of how these factors influenced election outcomes in aggregate.

2.1 The referendum on Chile's constitution

In October 2019, an increase in public transportation fares in Santiago triggered a country-wide social movement expressing dissatisfaction with the quality of life, pensions, and inequality, emphasizing the slow progress since the dictatorship. The anti-establishment movement expressed dissatisfaction with politicians and government policies. Following a month of widespread protests and significant economic damage to public and private property, the government and opposition agreed to hold a referendum to determine whether the dictatorship's constitution would be rewritten.

For the referendum, each voter was given two ballots. The first ballot was used to decide whether or not to rewrite the constitution. The second ballot's purpose was to define the rules for selecting people to write the new constitution (relevant if the vote on the first ballot was to rewrite). Voters chose between a constitutional convention in which all members were elected in the next election and a mixed convention in which elected members and people chosen by Congress were both present.

The turnout for the referendum was 50.95 percent, which was one of the highest turnouts since voting became voluntary in 2012. Approximately 80 percent of people voted in favor of a new constitution and the election of all members (constitutional convention).

Congress and the Senate set the rules for the election of members of the constitutional convention, a new temporary institution independent from both chambers. The electoral rules approved were the same as for Congress, a multi-seat election with proportional representation, with the addition of two new features. First, all candidates and elected members

would be chosen in gender parity. Second, independent candidates can form multi-candidate lists.

2.2 Electoral Engineering in elections for constitutional convention members

Candidates for Congress ran on open electoral party lists in Chilean elections, with each voter selecting a single candidate from any party list. The D'Hondt method, a proportional representation system that assigns seats to party lists in roughly the proportion of votes received, is used to allocate candidates to seats. The ranking provided by the votes is used to assign candidates to seats within parties. So, for example, if a party list receives enough votes to elect two candidates, the two most popular candidates on that list are elected. Seats are assigned to electoral lists, but only parties can form multi-candidate lists, so independent candidates face a significant disadvantage because they run on single-person lists.

The electoral rules for the election of members of the constitutional convention were the same a for Congress, with two exceptions: gender parity among candidates in elected members was enforced, and independent candidates could form multi-members electoral lists.

A. Gender quotas

In 2015, the Chilean Congressional system implemented a candidate gender quota. The quota required that each party list include at least 40% female candidates, with no restrictions on elected candidates. The quota increased women's representation in Congress from 15% to 23%, nearly half of the target. The limited success of candidate gender quotas, combined with the anti-establishment stance of the social movement, put pressure on Congress to approve election rules that ensured women's representation in the creation of the new constitution.

In March 2020, Congress approved a gender quota for the election of constitution committee members. The quota ensured that each district had an equal number of candidates and elected members. For candidates, each electoral list had to be led by a woman and

alternate between genders. If the difference between male and female elected candidates using the D'Hondt method in a given district is greater than one, the least-voted candidate from the over-represented gender is replaced by the most-voted candidate (who has not been elected) from the under-represented gender on the same electoral list until gender parity is achieved. The aim of the rule was to achieve gender parity while maintaining proportional representation.

B. Independent party list

Since the end of the dictatorship, Chile has had three coalitions in Congress: one right-wing, one left-wing, and one center-left, with almost no representation from independents. Responding to popular demand to include people previously not engaged in politics in the writing of the new constitution, Congress passed a law in March 2020 that allowed independent candidates to form electoral lists of multiple candidates that mimic party coalitions, as their votes counted as lists for allocating seats. The only requirement independent candidates had to form lists was to get sponsorships from at least 0.5 percent of voters in their congressional district in the previous election[3].

2.3 Electoral list formation

Over 2,000 citizens sought sponsorships as independent candidates between December 2020 and January 2021. Approximately 63% of them were men, while 37% were women. 435,803 voters supported independent candidates, accounting for 7.6 percent of all voters. Surprisingly, despite the majority of candidates being men, women received 56.4 percent of total sponsorships. The median for men was 432 sponsorships, and the median for women was 563.

More than 500 independent candidates received enough sponsorship to run in the elections (266 men and 258 women). These candidates were roughly divided into two distinct

[3]Each voter that does not belong to a political party can sponsor one independent candidate through the website of the electoral service.

groups. The first was an extreme left-wing coalition comprised primarily of social movement icons. Among them was a female school-bus driver who became famous for wearing a costume during the protest, a breast-cancer survivor, and several climate activists with no prior political experience. The second group was a center-left coalition comprised primarily of professionals working in public policy. Despite their ideological differences, both represented anti-establishment views and supported the inclusion of newcomers in the constitution-writing process.

I divide the coalitions into two groups for my analysis[4]. The first group consists of the three party coalitions with congressional representation, which I will refer to as traditional coalitions. This group includes the right-wing coalition *Chile Vamos*, the center-left wing coalition *La lista del Apruebo*, and the left-wing coalition *Apruebo Dignidad*. The second group comprises two major independent coalitions: *La Lista del Pueblo*, a left-wing coalition, and *Independientes No Neutrales*, a center-left wing coalition. I limit my analysis to these coalitions as most other coalitions did not receive enough votes to elect representatives.

Table 1 reports the gender difference in these two groups of candidates, which is also summarized in figure 3 (appendix table C1 shows the statistics for the remaining candidates). Three descriptive statistics are worth highlighting: First, candidates from traditional parties receive nearly four times the amount of money as independent candidates. Second, the gender gap in contributions varies depending on the type of coalition. Men received significantly more money in traditional parties, while women received significantly more in independent coalitions. Third, the gender gap in political experience favors men in traditional parties (nearly 15% of men in traditional parties have political experience, while around 8% of women in traditional parties have experience). At the same time, there is no gender gap in experience for independent coalitions, as both genders lack experience in politics.

[4]These five coalitions were specified in the pre-analysis plan.

2.4 Electoral outcomes

Traditional parties and the major independent coalitions won 92% of the seats available (127 seats). The average vote share for each type of candidate is shown in Figure 3 c). Men received a significantly higher share of traditional party votes, while women received a significantly higher share of independent group votes. As shown in table 1, the difference in vote share by gender is reflected in the elected candidates from each coalition. The traditional coalitions in the constitutional convention are represented by 39 women and 51 men, while 22 women and 15 men represent the main independent coalitions. This disparity is possible because gender parity was imposed at the district level rather than the electoral list level.

Gender replacements also varied according to the electoral lists. Gender parity was mandated for twelve seats, with seven women and five men being replaced. All of the men who were replaced by women as a result of the gender correction were from traditional parties, while five of the seven women who were replaced were from independent groups. This is consistent with men having a higher likelihood of being elected in traditional parties while women have a higher likelihood of being elected in independent groups.

This gender preference is also observed in non-quota elections. The city council election took place the same day as the election for members of the constitutional convention, which was also a multi-seat proportional representation election. In contrast to the election of members of the constitutional convention, there were no gender quotas for the city council. Figure 4 depicts the relationship within voting booths between the vote share for women in the city council election and the vote share for traditional and independent coalitions in the constitutional convention election. The graph shows that in voting booths where most people voted for women in municipal elections, fewer people voted for traditional parties. For independent coalitions, a higher vote share of women in the city council election is correlated with higher support for independent coalitions in the election of the members of the constitutional convention.

In summary, the election results indicate that male candidates were preferred by tradi-

tional party voters. For independent coalition voters, the opposite was true, with women receiving more support than men.

3 Experimental design and data

This section describes the voter information experiment as well as the data used in the analysis. The hypotheses that will be tested are then discussed through an example.

3.1 Sampling and Treatment design

I implemented the voter information campaign in the urban area of Región Metropolitana, Chile's most populated and urbanized region. With six of the country's 28 districts, the total electorate is approximately five million people, representing thirty percent of the voters registered to vote in the country.

For the randomization, I take advantage of the fact that each voter is assigned to a voting booth with an average of 330 registered voters. A month before the election, the electoral service publishes the electoral register, which includes each voter's name, voting booth, and address. The electoral service publishes and disaggregates the number of votes cast for each candidate at the voting booth level. As a result, because the voter register is public and the results are published at the voting booth level, the information campaign is randomized at the voting booth level.

I treated 336 voting booths at random, which meant that approximately 110 thousand voters were assigned to treatment. My sample consists of 13,825 voting booths in total. The treatment is stratified by district and women's vote share in the previous election, and is divided into two treatment arms and one control group.

The timing of the election and the intervention was the following: five months before the election, parties and independent groups registered their candidates in the electoral service. Two weeks later, the electoral services announced the approved candidacies. A month before the election, the campaign started. A week before the election, voters in treated booths

received a letter explaining how the gender quota for the election of constitutional convention members works. Finally, voters vote in person on the day of the election.

The treatment contained no specific information about political parties or candidates. As parties had already chosen their candidates by the time the letter was sent, the candidate pooled is considered fixed. The letter was delivered inside an envelope addressed to the voter's name to the voter's address. These characteristics distinguish the information campaign from political propaganda, which is typically delivered to people's homes without an envelope and without being personalized. Given the importance of providing a trusted source for the information (Dynarski et al., 2021), I partnered with the United Nations Development Programme (PNUD), which is expected to increase voters' trust in the information provided.

There are two treatment arms and one control group in this study. The two treatment arms are slightly different letters. The candidate treatment included general election information (such as the number of people elected and a website where people could find a list of candidates) as well as information about the candidate's gender quota. The letter specifically states that gender parity in candidates will be ensured because each list must include an equal number of male and female candidates. The letter of the elected treatment arm was the same as in the candidate treatment arm, plus information about gender parity in elected candidates. This treatment arm describes how gender parity in elected officials will be achieved by providing an example of how candidates from both genders could be replaced. Figures B1 and B2 in the appendix contain examples of each letter translated to English. All voting booths in the region that did not receive a letter comprise the control group. The voting booths are randomly selected, and sample sizes are shown in figure 2.

3.2 How could information changes beliefs?

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The analysis is based on the assumption that the letter informing voters of the quota (candidate or elected) caused uninformed voters to update their beliefs about the number of

candidates by gender and the relative likelihood of candidates being elected. While I do not have direct evidence of the number of uniformed voters, several surveys conducted prior to the election (online, in person, and in focus groups) with national and regional representation revealed a high level of interest in the election but a lack of information on how candidates were chosen, given the variety of options and the complex formulas for determining who won[5].

The candidate treatment arm explains only the gender quota that affects candidates. This rule alters the candidate supply because parties are required to place the same number of men and women in all districts. This electoral rule does not necessarily affect women's electability, as voters may choose not to vote for them in the end.

This information, I expect, will reinforce gender bias, as explained in a simple statistical discrimination model in appendix A.2l, by exacerbating the gender bias that voters in each party have. As a result, in the presence of gender quotas, parties where voters prefer male candidates will discriminate against their female candidates. The opposite will be true for electoral groups that prefer female candidates.

The elected treatment arm explains changes in the supply of candidates and election results. I expect this information will change the votes of strategic voters based on which gender they believe will benefit from the quota in their party, given the gender preferences of voters who share their party affiliation. Section 3.3 discusses a detailed example and testable predictions.

The key assumption about the difference between the two treatment arms is that voters in the candidate treatment arm are, on average, less informed about the gender quota than voters in the elected treatment arm, as the treatment arm letter explained both gender quotas. This assumption should be approached with caution, as the letter from the candidate

[5]Data Influye (2020) is an online survey with a sample size of about 1,500 people that aims to represent the entire country. When voters were asked if they felt informed or uninformed about the election, 51 percent said they felt uninformed about it. Espacio Público (2021) conducted 18 focus groups with 120 people in *Región Metropolitana*. Most people said they were very interested in the process, but 45 percent said they knew nothing about the candidates running for office. The director of the Latinobarometer stated in an interview with Urrejola (2021) that based on their interviews; their estimates suggested that most people in the country did not know how to vote in the election.

treatment arm included a link to the electoral service's website, where voters could learn more about the candidates and the election in general. As a result, voters in the candidate treatment might have been incentivized to look for more information, making both treatment arms indistinguishable. Therefore, all analyses will be conducted using two regressions: one with both treatment arms separately and one with the pooled treatment.

3.3 Example

As described in the pre-analysis plan, my experimental focus is on examining how the information campaign affected booth-level electoral outcomes, specifically total female vote share and vote-share by party. Below, I provide a simple example in which partisan voter ideologies are specified to reflect Chilean voter preferences at the time of the referendum. Given these assumptions, I identify how the impacts of information campaign on vote shares should vary by gender and party.

Setup: For simplicity, I consider a single district with two seats. Two parties $P \in \{A, B\}$ provide candidate lists made up of four candidates j^G with $G \in \{M, F\}$ representing the candidates' gender. Parties' voter base is fixed as I assume citizens have fixed partisan preferences. Reflecting this, I model voters as having lexicographic party preferences and then trading off two candidates' characteristics: gender and quality.

The utility that a voter i of party $P \in \{A, B\}$ derives from candidate j^G is:

$$u_{ij}^P = \begin{cases} 1_{M_j} * g^P + \phi^P q_j + \epsilon_{ij} & \text{if candidate } j^G \text{ belongs to party P} \\ 0 & \text{if candidate } j^G \text{ does not belong to party P} \end{cases} \tag{1}$$

1_{M_j} is an indicator variable that takes the value of 1 if candidate j^G is a man. g^P is a gender preference: for female candidates is normalized to 0, so a $g^P > 0$ means that the voters from party P prefer male candidates over female candidates, and $g^P < 0$ means that

voters from party P prefer female candidates. ϕ^P represents the preference for quality and q_j represents the quality of candidate j. ϵ_{ij} is a voter-candidate specific preference term, with mean zero and variance σ_ϵ^2.

Sincere voting: Sincere voters (also known as expressive voters) vote for their preferred candidate regardless of the likelihood of victory or electoral rules. This type of voter is only concerned with expressing their preferences for candidates through their vote. Thus, a sincere voter votes for a candidate j over all other candidates l if and only if $u_{ij}^P \geq u_{nl}^P$.

Strategic voting: A strategic voter values the characteristics of elected candidates. Therefore, the voting decision is made considering if her vote could change who gets elected. When voter i breaks a tie between candidates j and l (her vote is pivotal), she changes the outcome of the election and receives the utility given by $u_{ij}^P - u_{il}^P$. Let $\mathbf{T}^P$ be the matrix of beliefs of ties for each pair of candidates (assume $T_{j,l}^P = T_{l,j}^P$), then the expected utility from voting for candidate j is given by

$$\mathrm{E}(u_{ij}^P(\mathbf{T}^P)) = \sum_{l \in \{1,\ldots,K\}} T_{j,l}(u_{ij}^P - u_{il}^P) \tag{2}$$

Assume that the probability of pivotality in an election is non-zero for at least one pair of candidates. Strategic voters vote for candidate j over all other candidates l if and only if $\mathrm{E}(u_{ij}^P(\mathbf{T}^P)) \geq \mathrm{E}(u_{il}^P(\mathbf{T}^P)), \forall l$.

Turning to parties, I assume that parties maximize voters' utility. Parties observe candidates' quality (q_j) and gender. From voters they observe gender and quality preferences (g^P, ϕ^P), and they know the distribution of ϵ_{ij}. Assume that the voter base of party A prefers men ($g^A > 0$) and that the parameter is big enough that voters prefer a male candidate in almost all cases, with most of the majority being sincere. This assumption is made to exemplify how gender quotas affect party selection and voter behavior in the presence of gender bias. To fix ideas, let me assume that each party P represents 50 percent of the

electoral base. As a result, each party P will obtain one of the two seats.

Each party receives four random draws of female candidates and four random draws of male candidates from a common pool to select candidates. I assume that the candidate pool's quality distribution is the same for each party and gender. The assumption reflects the idea that each party has access to the same recruitment technology with some randomness.

Let me consider how party A selects its candidates without a gender quota. As the voter base of party A is gender biased ($g^A > 0$), for the same quality level, the average voter of party A values a male candidate g^A more than a female candidate. Thus, given that the candidate pool is assumed to have the same quality distribution for men and women and parties maximize voters' utility, more male candidates will be selected to run than women in expectation.

Regarding voters' behavior, let me consider an example where party A selects three men and one woman as candidates. Given that the voter base of party A prefers male candidates ($g^A > 0$), let me consider the case where the expected utility for all the male candidates $j^M \in \{1, 2, 3\}$ is higher than the expected utility for the female candidate $l^F \in \{4\}$: $E(u_{ij}) > E(u_{il}), \forall j^M$.

A sincere voter i will vote for the candidate that maximizes u_{ij}^A. Instead, a strategic voter i maximizes $\mathrm{E}(u_{ij}^A(\mathbf{T}^A))$. On one side, given the preferences from most voters of their party, the strategic voter predicts that the probability of her vote being pivotal when voting for the female candidate l^F is equal to zero $T_{l,j}^A = 0, \forall j^M$. Thus, the expected value of voting for a female candidate is equal to zero. On the other side, the strategic voter predicts that the probability of being pivotal for at least one pair of male candidates is non-zero. As a result, the strategic voter will always vote for a male candidate.

Information treatment: Consider the gender quota described in section 2.2, where candidates and elected members must be in gender parity. Then each party P will have two male ($j^M \in \{1, 2\}$) and two female candidates ($l^F \in \{3, 4\}$), and the elected candidates will be one man and one woman. If gender parity is not achieved given the vote shares, for

example, two men get elected, then the least voted of those two men would be replaced by the most-voted woman in the same party.

Prediction 1: If all voters are sincere, information about the electoral rules should not impact on the vote share.

As sincere voters vote for their preferred candidate independent of the electoral rules and other voters' behavior, information about gender replacement should not have a differential effect on them.

Strategic voters evaluate their votes based on the electoral rules and what they believe other voters are doing. For party A, let me consider how the pivotality changed in the presence of a gender quota. Now there are three possible scenarios where a pivotal voter can break a tie. The first option is when the most voted candidate from party A and B are men and they receive the same amount of votes $T_{A,B}$. In that case the pivotal voter that votes for j^M, breaks the tie between the candidates from A and B, so his candidate does not get replace by a woman. As a result, she receives the utility of $u_{ij} - u_{il}$ where l^F is party A's the most voted female candidate. The second option is when party A's male candidates ($j^M \in \{1, 2\}$) are in a tie and they are both the most voted male candidates. Then when voter i votes for 1, she receives the utility of $u_{i1} - u_{i2}$. The last option is when the most voted candidate is a man from party B, so a female candidate of party A will be elected. If party A's female candidates ($l^F \in \{3, 4\}$), then when voter i votes for 3, she receives the utility of $u_{i3} - u_{i4}$.

The expected value of voting for a male candidate $j^M = 1$ for the strategic voter i is given by

$$\begin{aligned} E(u_{i1}(\mathbf{T^A})) = T_{1,2}Pr(A > B)(u_{i1} - u_{i2}) \\ +T_{A,B}Pr(3 > 4)(u_{i1} - u_{i3}) + T_{A,B}Pr(4 > 3)(u_{i1} - u_{i4}) \end{aligned} \tag{3}$$

Where $Pr(A > B)$ is the probability that the most voted male candidate of party A

receives more votes than the most voted male candidate of party B, $Pr(3 > 4)$ is the probability that candidate 3 has more votes than candidate 4, and $Pr(4 > 3)$ is the reverse.

The expected value of voting for $l^F = 3$ for the strategic voter i is given by:

$$E(u_{i1}(\mathbf{T^A})) = T_{3,4} Pr(B > A)(u_3 - u_4) \tag{4}$$

Where $Pr(B > A)$ is the probability that the most voted candidate of party B is a men and that he receives more votes than the most voted male candidate of party A.

As a opposed to the example in the absence of quotas, now a strategic voter considers the option of voting for a women as the expected utility of voting for a woman $E(u_{il}(\mathbf{T^A})), l \in l^F$ could take a positive value.

Prediction 2: The update of beliefs provided by the gender quota information increases the vote share of women for party where there is a gender male bias.

3.4 Data

I collect information from four different sources. First, I use electoral service administrative data, such as the electoral register and the election results. The electoral register contains each voter's name, address, and the voting booth where they are registered to vote, while the election results contain the number of votes cast for each candidate at the voting booth level.

Second, I have candidate data from a variety of sources. Contributions to campaigns is a data set that contains every individual monetary contribution received by each candidate during the campaign. This information is publicly available on the electoral service's website and is updated weekly, so voters can access it before the election. The candidate's previous experience in politics is also gathered from the electoral service's historical data. Newspapers are used to gather information such as age and professional experience.

Third, I use data from test scores as a proxy for ability. The dataset is unique because it is a high-stakes test with publicly available results. The scores have been normalized by

cohort, so that each has the same median (500 points) and standard deviation (100 points). The test score results since 1967 have been digitized by Nielson (2021). For my analysis, I take the mean of the two mandatory tests, math and verbal.

Finally, I gathered information on how people voted on the articles for the new constitution. This information is publicly available on the website of the constitutional convention, and it includes how each member voted on each article.

3.5 Balance

The electoral register and administrative data from previous elections are used in the balance table 2. Column 1 reports the control group's average for voting booths, and columns 2-4 report the difference between the control and treatment groups controlling by strata. I categorize the results into four groups. First, the voting booth characteristics describe the composition of the voting booth for the election of constitutional convention members. Second, the results of the most recent congressional election (2017), including turnout, the percentage of votes cast for women, and the left-wing party. Similarly, the third group describes the referendum results by voting booth for the constitution (2020). Finally, I describe the demographics of those registered to vote by the characteristics of their census block.

In the control group, the average voting booth has 325 registered voters, 48 percent of whom are men. With a 45 percent turnout, female candidates received 41 percent of the votes cast in the most recent congressional election. The referendum had a 57.6 percent turnout, with 79.3 percent of those voting in favor.

Column 2 shows the difference between the control group and the combined treatments. Most variables in the pooled sample are balanced, with the exception of a small but significant difference in the vote share for the left (one percent) and the percentage approving the constitutional referendum (less than one percent). The difference between the candidate treatment and the control group is reported in Column 3. The turnout in the previous congress election and the referendum is significantly different. When we examine the dif-

ference between the candidate treatment and the control group (reported in column 4), we find that most variables are balanced, and the difference in turnout has the opposite sign, resulting in a balanced pooled sample.

4 Results

4.1 Take-up

To assess the effectiveness of the information campaign, I would ideally measure the number of voters who opened and read the letter in order to calculate the local average treatment effect (LATE). Due to the lack of individual voter data, the best approximation for take-up is the information provided by the mail company on the number of letters delivered to the voter's address. This result will allow me to determine whether the quality of the data from the electoral register is sufficient to ensure that the majority of letters were delivered. The results for the pooled sample of treatments and each treatment arm are reported separately in Table C2 in the appendix. The results show that approximately 95% of the letters were delivered, with no statistically significant difference between groups. Because my findings indicate that almost everyone received the letter and I have no data measuring how many voters read the letter, my analysis will be an intention to treat (ITT), as determined by the treatment group assignment.

4.2 Votes

For the remainder of the RCT analysis, I will run two separate regressions for each outcome: one with the pooled treated sample (any treatment) and one with each treatment arm separately (candidate and elected treatment arm). This is due to the fact that the first regression will allow me to test the overall effect of both treatment arms, whereas the second regression will allow me to test whether the treatment arms have a differential effect on voter behavior. As mentioned in section 3.1, the candidate treatment arm is attempting to

capture the effect of increased awareness of the restriction in candidates, whereas the elected treatment arm is attempting to capture the effect of increased knowledge about gender parity in candidates and elected officials.

First, I measure if the intervention resulted in an overall change in the vote share of women, including all parties participating in the election. The average vote share for female candidates in the voting booths of the control group was 51.2 percent. The estimation for the pooled treatment was the following

$$\% \text{ women}_j = \beta_0 + \beta_1 \text{Any Treatment}_j + \gamma_j + \epsilon_{jp} \tag{5}$$

Where $\%$ women$_j$ represents the vote share for women in voting booth j. Any Treatment$_j$ is a dummy variable that takes the value of one if the voting booth was treated: candidate or elected treatment arm. γ_i is a vector of controls at the voting booth level and ϵ_{jp} is the error term.

The overall effect of the treatment is an increase of approximately 0.7 percentage points in the vote share of women, as shown in column 1 in Table 3. Therefore, the information increased the votes for women by approximately 1% on treated voting booths.

Column 2 of Table 3 examines each treatment arm separately to see if information focusing solely on candidates (candidate treatment) versus candidates and elected members (elected treatment) elicits a different response from voters. According to the findings, the candidate information treatment increased women's vote share by 0.5 percentage points. In contrast, full disclosure of the gender quota (elected treatment) increased female voting by 0.8 percentage points. These findings are not surprising given that the elected treatment arm contained more information about gender quotas than the candidate treatment arm. When I tested whether these two effects differ, the p-value of 0.64 at the bottom of the table indicates that it cannot be rejected that both coefficients are equal. In summary, the findings indicate that both treatment arms increased the proportion of votes for women in the treated voting booths.

The gender quota directly impacts candidates' election chances, influencing the strategic voter's decision. When a gender quota is imposed on elected officials, voters must consider that a candidate who would have been elected without the quota may now be replaced by a candidate of the opposite gender. The example of section 3.3 contains two propositions. The first proposition contended that knowing the electoral rules would not affect voting behavior if all voters were sincere. The second proposition stated that the impact of information on strategic voting behavior is determined by the voter's party and, more specifically, the gender bias of the party. To put this to the test, I divided the electoral list into two groups, as described in the section 2.3. The two groups are the traditional parties and the independent groups. I expect gender parity to have a negative impact on male candidates in traditional parties as men have more support in this group. I expect the information to reduce the vote share for women in the independent group, where female candidates were more successful.

For testing the two propositions in section 3.3, I estimate the following equation for the pooled treatment

$$\begin{aligned} \%\ \text{women}_{jp} = \beta_0 + \beta_1 \text{Any Treatment}_j * \text{Traditional}_p + \\ \beta_2 \text{Any Treatment}_j * \text{Independent}_p + \gamma_j + \epsilon_{jp} \end{aligned} \tag{6}$$

Where $\%$ women_{jp} represents the vote share for women in voting booth j for the electoral list p. Traditional_p is a dummy variable that takes the value of one if the electoral list p belongs to the traditional parties and Independent_p is a dummy variable that takes the value of one if the electoral list p belongs to the independent groups.

Columns 3 and 4 of Table 3 show the intervention results for each group. Column 3 shows that when the voting booth is treated, the vote share for women for the traditional coalitions increases by nearly three percentage points, as indicated by the coefficient *Any treatment*Traditional*. On the other hand, the coefficient *Any treatment* Independent* indicates a 2.26 percentage point decrease in the vote share of female candidates in independent coalitions. Column 4 displays the outcomes for each treatment arm. The results for each treatment arm are very similar to the pooled sample, with traditional parties positively

affecting women's vote share and independent coalitions negatively affecting them. The p-values at the bottom of the table indicate that the treatment arms in both groups have similar effects.

The results from Table 3 support the hypothesis of strategic voting because when voters are informed about the gender quota, the effect varies depending on their party bias. For the voters from traditional coalitions, in which male candidates are the front-runners, the information increases the likelihood that they will vote for a female candidate. For the voter from independent coalitions, where female candidates are front-runners, the information increases the likelihood that they will vote for a man.

Twelve candidates were replaced in the election to achieve gender parity. The vote difference between candidates elected using gender correction and those who would have been elected without the quota is $54,642$, or nearly one percent of all votes cast. Given the magnitude of the effects and the election results, the intervention had the potential to alter the outcome in half of those districts. This assumes that the information campaign had the same impact across the country as it did in the sample districts. As a result, gender correction would have only occurred in six districts. The vote gap between candidates elected through gender correction would have been reduced to 21,939, or roughly 40% of the original gap.

4.3 Robustness checks

Turnout: For this election, registration was automatic and voting was optional. The average turnout by voting booth for the election was 45 percent, similar to the turnout in the previous parliamentarian election as shown in table 2. If the treatment increased turnout, the previous analysis would have to consider that the selection of voters in control and treated voting booth would have been different.

The turnout results are shown in columns 1 and 2 of Table 4. Turnout increased by 0.12 percentage points in treated voting booths, representing a 0.2 percent increase in turnout. This estimate is small and noisy for both regressions (pooled sample and treatment arms).

Vote share by electoral list: The analysis of women's vote share by party is based on the assumption that voters did not switch electoral lists as a result of the information campaign. I expect no changes in this outcome because (1) the intervention did not target any specific coalition, (2) all electoral lists included 50 percent female candidates, and (3) political groups were unable to respond strategically to my information campaign because candidates had already been announced by the time it was sent. The results are shown in columns 3 and 4 of table 4, with the vote share defined as the total number of votes the coalition has on a given voting booth divided by the total number of votes the booth has. Overall, the point estimates for each dummy (Traditional and Independent) interacted with treatment are small and noisy, indicating no change in the percentage of votes for these two groups.

Gender salience: One possible explanation for why the gender quota information influenced voters' choices is that the letter increased the salience of gender, making the gender of candidates a more relevant characteristic for voters. This effect is explained by the fact that the information directly explained a quota related to the gender of the candidates, so when voters consider which candidate to vote for, they give gender a higher weight.

If the intervention increased the salience of gender, I expect to see an increase in women's vote share in other elections, regardless of whether they had a gender quota or not. This is because if voters were more aware of the gender of the candidates, it would affect all of the elections that are taking place at the same time, as they are evaluating the candidates for all of them.

People voted for the governor, the mayor, and city council representatives on the same day as the constitutional convention election. The only election with a gender quota was for constitutional convention members. The other three had no gender restrictions on candidates or elected members.

The election of the city council is similar to the election of members of the constitutional convention in that it is a multi-seat election using a proportional system. As a result, I ran the same regressions for the city council election to see if the intervention affected the

saliency of gender. The results of the vote share of women in the city council elections are shown in columns 5 and 6 of table 4. Column 5 shows that the information increased the vote share for women by 0.05 percentage points from a base of 46 percent. This effect is noisy and orders of magnitude smaller than the constitutional convention results. When the treatment arms are separated (column 6), the results are similar, small in magnitude, and noisy.

Overall, while we cannot directly test whether the intervention had no effect on the saliency of gender, these findings suggest that women's vote share is unaffected in other elections.

4.4 Effects on quality

Given that the findings indicate strategic voting behavior from voters, the natural follow-up question is which types of candidates voters are moving away from and which candidates they support more when gender quotas are implemented. With the intervention, I can test whether strategic voter decisions cause them to place more weight on ability when coordinating away from their party's preferred gender using the information campaign. I proxy ability with test scores for college admissions in Chile, a high-stakes test with publicly available results. The data has been digitized since 1967 by Nielson (2021). There are two mandatory tests: math and verbal, and I use the average of both tests as a proxy for ability. Test scores are normalized by cohort without regard for gender.

To validate test scores as a proxy of ability, I show that test scores correlate with multiple political success indicators. First, I test if the vote percentage correlates positively with test scores for the pool of candidates. Second, I created an index composed of the average of two dummies for the elected members. The first component is a dummy that takes the variable of one if the elected member was elected president or vice president of the constitutional convention. The second component is a dummy that takes the value of one if the elected candidate was invited to a debate on public television.

Table 5 shows the results. I separate the effects for all candidates and by electoral list.

The first four columns show the correlation between the percentage of votes cast for each candidate and test scores. According to the findings in all columns, candidates with higher test scores received more votes. Columns 5-8 only include members of the constitutional convention, with the outcome variable being the political success index. Table C3 in the appendix has a regression for each of the variables from the index. The findings of these columns also suggest that the average test score positively correlates with political success. Table C4 in the appendix also show that test scores are correlated with getting a higher number of sponsorships for independent candidates.

To disentangle the effect of the intervention on the quality of the candidates chosen, I ran a regression with a triple interaction of treatment, candidate gender, and test-score by coalition group, with the vote share of each candidate as an outcome. The pooled treatment's regression is as follows

$$\begin{aligned} \%\ \text{votes}_{ji} = \beta_0 + \beta_1 \text{Any Treatment}_j + \beta_2 \text{Any Treatment}_j * \text{High}_i \\ + \beta_3 \text{Any Treatment}_j * \text{Woman}_i + \beta_4 \text{Any Treatment}_j * \text{High}_i * \text{Woman}_i + \gamma_i + \epsilon_{ji} \end{aligned} \tag{7}$$

Where $\%\ \text{votes}_{ji}$ is the vote share of candidate i in voting booth j. Woman_i is a dummy variable that takes the value of one if the candidate is a woman, Any Treatment_j is a dummy variable that takes the value of one for treated voting booths, and High_i is a dummy variable that takes the value of one if the candidate's test score is over a threshold. I use three alternatives: if the score is over 500 points (median), if it is over 600 points (one standard deviation), and if it is over 700 points (two standard deviations). γ_i is a vector of candidate fixed effects, and ϵ_{ji} is the error.

To present the findings, I divide the candidates of each electoral group (traditional and independent) into four types and estimate the average effect for each: low-score men, high-score men, low-score women, and high-score women. Figure 5 depicts the results. The various colors represent various definitions of a high score: above the median, one standard deviation above the median, and two standard deviations above the median.

For the traditional parties, the treatment reduces the vote share of male candidates with low test scores and has a zero effect on men with high test scores. For female candidates in the traditional groups, the intervention has no differential effect by quality. For the independent group, the results indicate no differential effect by quality for any gender. These findings imply that quality, measured by test scores, is not a factor voters from the independent groups consider when exposed to the treatment. This could be due to various factors, such as independent voters valuing different characteristics (for example, participation in a social movement) or voters not having enough quality information due to independent candidates having significantly less money for campaigning.

The regressions of the traditional parties are shown in table C5 in the appendix, and the regressions of the independent group are shown in table C6. Column 1 defines high-score as a test score greater than the median, column 2 as one standard deviation greater than the median, and column 3 as two standard deviations greater than the median.

The findings for the traditional group are consistent with the findings in Besley et al. (2017), as the information campaign maintains women's quality while increasing men's quality. According to their paper, the resignation of low-quality male leaders was a key driver of the effect. The mechanism I discovered is distinct. My results indicate that voters select male candidates of better quality in the presence of a gender quota.

The same regression is shown in Figure B3 in the appendix, but instead of dividing the candidates by test score, I divide them by previous experience. I only run this regression for traditional parties because independent candidates have very few candidates with prior experience. The results are similar, but the magnitude is smaller. Male candidates without prior political experience are the candidates losing votes due to the treatment.

4.5 Effects by electability

The previous findings indicate that in the treated voting booths, voters switch their vote to favor the gender they anticipate will be electorally favored, given the quota system and co-partisan voters' gender bias.

This section discusses if candidates who were front-runners of their group were affected differently by the intervention. As discussed in the example in section 3.3, a strategic voter only considers voting for candidates that could make their vote pivotal. As a result, a strategic voter mostly considers voting for front-runner candidates. The gender quota described in section 2.2 changes who is a front-runner, as candidates from the under-represented gender could replace candidates of the over-represented gender to achieve gender parity. Therefore, in the presence of the gender quota, strategic voters should consider front-runners for each gender.

For the analysis, I first calculated how many candidates of each gender could be elected for each district. For example, in a district with six seats, up to three women and three men could be elected. Second, I divide the control group randomly into two groups of the same size. With one of the two groups of the control sample, I predict the front-runners in each electoral group (traditional and independent). These are defined by the number of electable men and women in each district that I calculated first. Third, I ran a regression for the following groups: front-runner women, front-runner men, women who were not front-runners, and men who were not front-runners. The regression is specified as follows

$$\begin{aligned} \%\ \text{votes}_{jp} = \beta_0 + \beta_1 \text{Any Treatment}_j * \text{Traditional}_p + \\ \beta_2 \text{Any Treatment}_j * \text{Independent}_p + \gamma_j + \epsilon_{jp} \end{aligned} \tag{8}$$

Where $\%\ \text{votes}_{jp}$ is the vote share the group obtained at voting booth j and party p.

The results are shown in table 6. The results for the female and male front-runners are shown in columns 1 and 2, respectively, while the results for the non-front-runners are shown in columns 3 and 4. For the independent group, the intervention had an effect only on front-runner candidates. The information decreased the proportion of votes cast for front-runner women by 2.6 percentage points while increasing the proportion of votes cast for front-runner men by 2.9 percentage points. The group of non-front-runners had no significant effect. The traditional group's results are similar. The intervention's affected only front-runner men, whereas for women, the vote share increases for both groups.

In summary, the regression results show that the intervention's effect is concentrated among the front-runners. These findings support the hypothesis that voters affected by the treatment are strategic, as this type of voters choose to vote for their preferred candidate among those where their vote could be pivotal (front-runners).

4.6 Committee members: Constitutional article votes

According to the previous analysis, when voters learned about gender quotas, they shifted their vote to favor the gender they believe will be electorally favored by the quota in their party, and in the case of traditional parties, they voted for candidates of higher quality. A follow-up question is whether women behave differently than men when elected and whether their policies differ. Ideally, I would investigate how candidates' ideologies differ by gender and how changes in voting behavior affect who is elected. Because ideological data on this group of candidates is unavailable, I examine elected candidates' behavior and compare the differences between men and women. Despite the fact that the sample is highly selected, the analysis is suggestive of general differences in behavior between men and women officials.

To distinguish differences on voting behavior between male and female members of the constitutional convention, I gathered data from votes on all articles of the constitution. The articles were divided into three categories: administrative, social, and economic. The definitions for each category can be found in the appendix, section A.1. I then ran a regression with a dummy variable for each category, with administrative votes as the base category. The most basic regression is as follows:

$$\begin{aligned} vote_{ji} = \beta_0 + \beta_1 Social_i + \beta_2 Woman_j * Social_i + \beta_3 Economic_i + \\ \beta_4 Woman_j * Economic_i + \epsilon_{ji} \end{aligned} \tag{9}$$

Where $vote_{ji}$ takes the value of 1 if official j voted liberal for article i. *Social* is a dummy variable that takes the value of 1 if article i is from the social category. *Economic* is a dummy variable that takes the value of 1 if article i is from the economic category. $Woman$ is a dummy variable that takes the value of 1 for female officials. ϵ_{ji} is the error, which are

clustered at the person level.

The results are shown in the table 7. The first column shows that female members of the constitutional convention vote more liberal on social and economic issues on average. The incremental effect for social issues is three percentage points, which is a 7% increase over the mean of men from traditional parties. The incremental effect on economic issues is also significant, albeit to a lesser extent. Column 2 contains an interaction of each category (social and economic) with a dummy *Independent*, which takes the value 1 for independent group candidates. According to the coefficients, independent candidates vote more liberal on social and economic issues. Women's results are similar to those in column 1, though the effect on economic issues becomes insignificant. Column 3 contains the three-way interaction of women, independent, and each article category. The findings support the results from the previous columns, indicating that women in both sectors (independent and traditional) vote more liberal than men. In the final two columns, I divide the sample by test scores, with a high test score defined as all officials with an average test score one standard deviation above the population's median, and a low test score defined as everyone else. Women with high scores from traditional parties vote significantly more liberal in social articles.

5 Conclusion

How party leaders and voter behavior explain marginalized groups' representation in politics has been an important part of the academic debate (Besley et al., 2017; Fréchette et al., 2008; Esteve-Volart and Bagues, 2012; Baltrunaite et al., 2014; Fujiwara et al., 2021). Trying to distinguish how voters react independently of parties is difficult because parties may strategically respond to electoral rules. My paper adds to our understanding of voter behavior by investigating a gender quota, which limits parties' and voters' ability to manipulate the fraction of people elected of each gender while allowing voters to choose any candidate.

My findings indicate that voters are partisan and change their behavior in response to the information, strategically voting for the gender expected to benefit the most from the

quota. Furthermore, I find that the treatment causes voters to switch their votes considering the candidate's ability, which increases the ability of elected male politicians from traditional parties, which is consistent with previous research.

The fact that voters respond strategically to electoral rules reflects the idea that when voters face constraints, they respond by switching their votes in order to maximize their influence in determining who wins the election. Thus, allowing voters to choose any candidate while maintaining a gender parity restriction on the results does not jeopardize desirable characteristics such as quality.

According to the descriptive evidence on electoral coalitions, traditional parties play a role in coordinating voters to vote for male candidates. Introducing rules that allow independent groups to compete on electoral lists can be critical to women's political inclusion.

My research on voter behavior in the presence of gender quotas, I believe, serves as a starting point for future research. Even though I find some evidence that male and female representatives differ, future efforts should be made to understand the causal impact of gender parity on voter welfare. Understanding how the presence of women and changes in the pool of elected officials affects which policies are implemented is critical to understanding how gender parity affects democracies.

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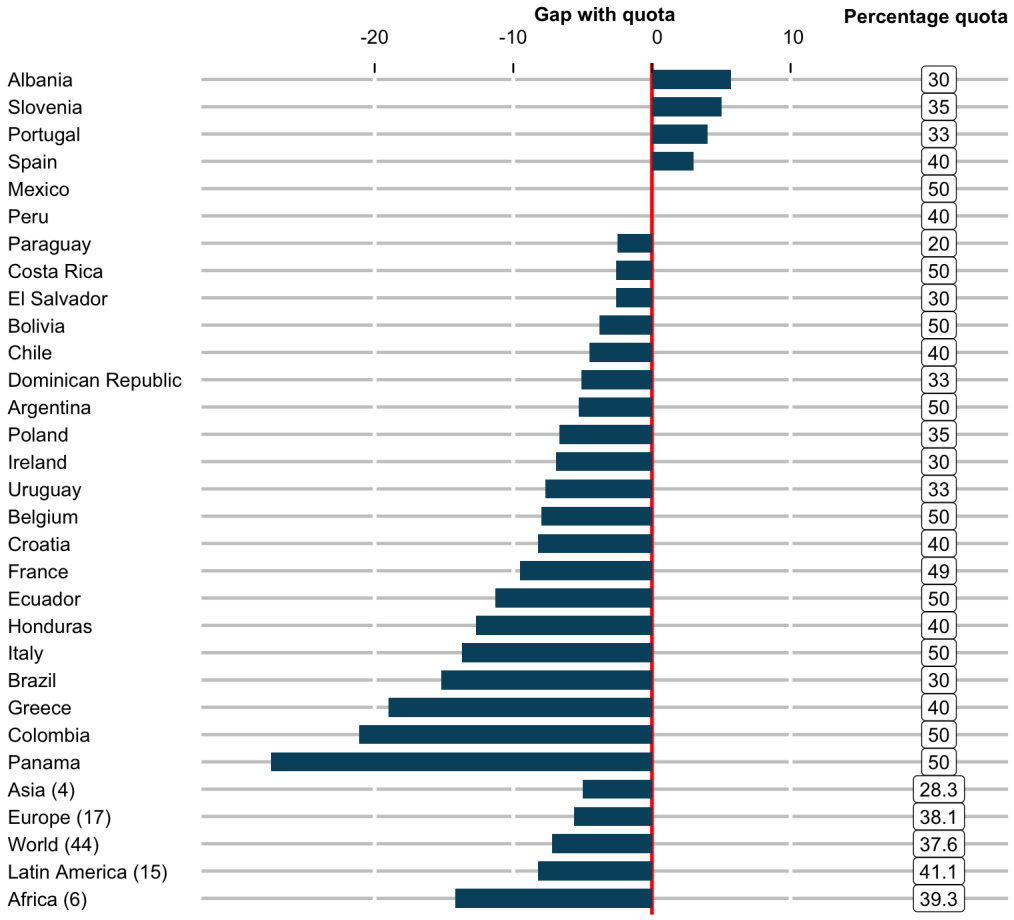
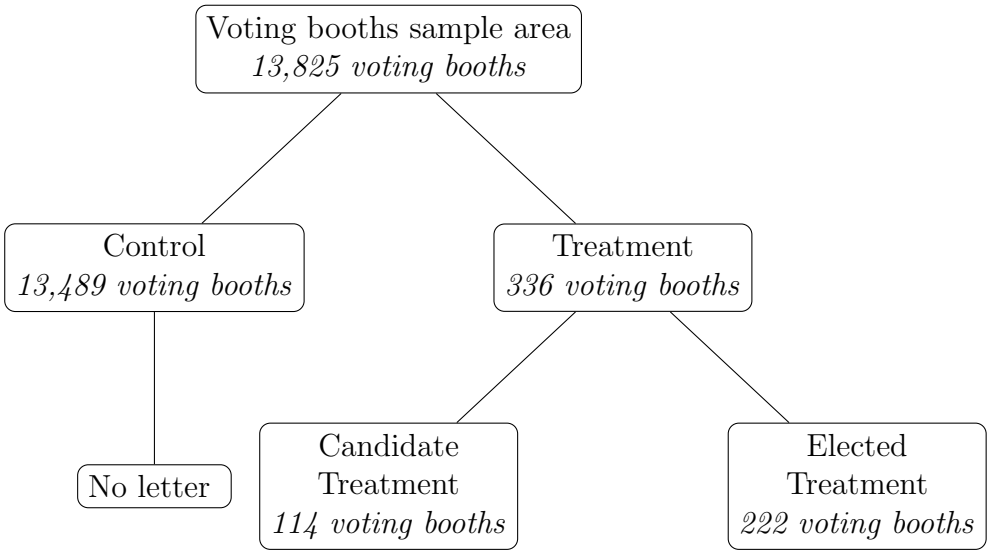
6 Figures

Figure 1: Do candidate gender quotas match women in congress? Cross country evidence



Notes: The figure shows a subset of countries that have implemented party candidate gender quotas in their legislation. The left column shows the name of the country and the right column shows the percentage mandated by the quota. The bars show the gap between the percentage mandated by the quota and female representation in the country. The last 5 rows are a summary of different regions in the world with the number of countries on parenthesis. Source: Gender Quotas Database. International IDEA.

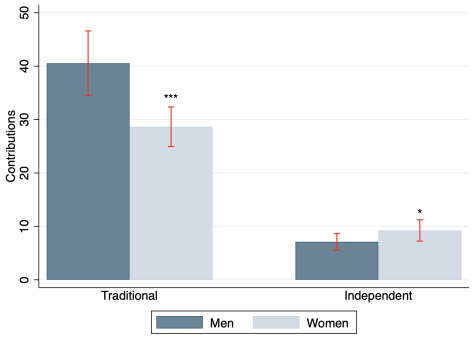
Figure 2: Treatment assignment



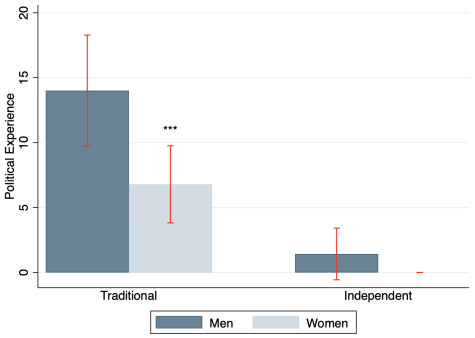
Notes: The treatment consisted on a letter sent a week before the election of members of the constitutional convention. Voters in treated booths received a letter explaining in detail how the gender quota for the election of constitutional convention members works. There are two treatment arms and one control group in this study. The two treatment arms are slightly different letters. The candidate treatment included general election information as well as information about the candidate's gender quota. The letter of the elected treatment arm was the same as in the candidate treatment arm, plus information about gender parity in elected candidates.

Figure 3: Do votes for electoral lists correlate with the vote share of women in the municipal election?

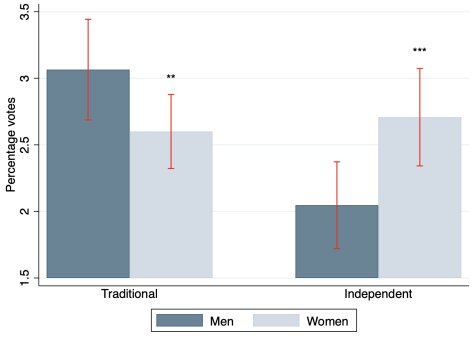
(a) Money Contributions



(b) Political Experience



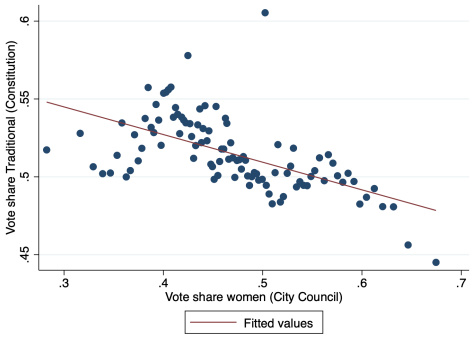
(c) Percentage of votes



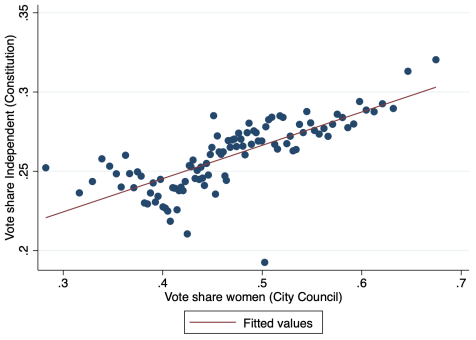
*Notes: The figure shows comparisons of candidates by gender and electoral lists (traditional and independent) over the average of three characteristics: money contributions, political experience, and percentage of votes. Contributions are defined as the amount of money, in thousands of dollars, that a candidate received for their campaign including own contributions. Political experience is a dummy that takes the value of 1 for candidates that were elected in previous elections. Percentage of votes is defined as the vote share each candidate got at the district level. The red lines represent the confidence interval at the 95 percent level. The * represent the statistical significance of the difference between male and female candidates within each electoral group. *** Significant at the 1 percent level, ** Significant at the 5 percent level, * Significant at the 10 percent level.*

Figure 4: Gender gap in attributes: Partisan differences

(a) Traditional Parties



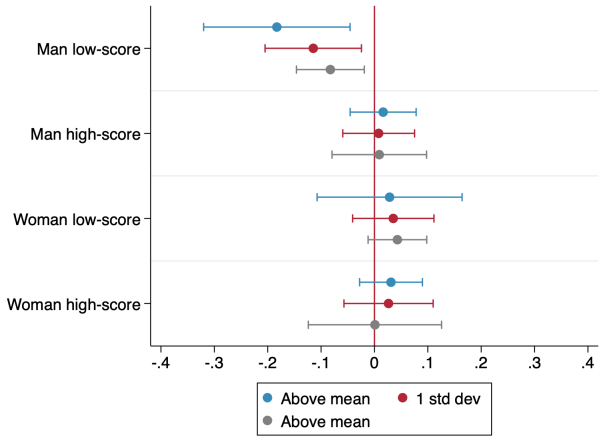
(b) Independent Groups



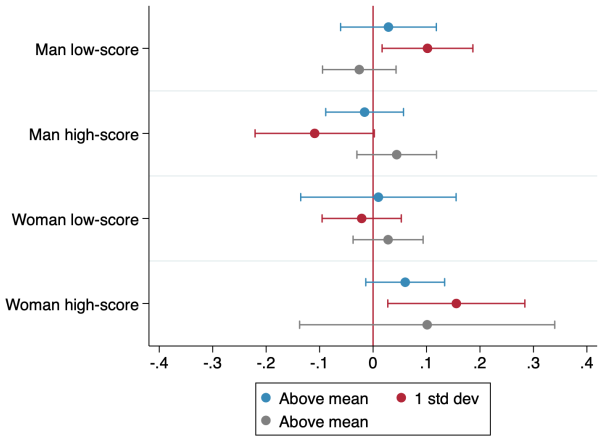
The figure shows the correlation between the vote share of women for the municipal election and the vote share for the two electoral groups, traditional and independent, for the constitutional convention election. The data is divided in 100 bins by the percentiles of the vote share for women in the municipal election, with each bean representing the average of the group.

Figure 5: Do treatment impacts on candidate vote share vary with candidate ability?

(a) Traditional Parties



(b) Independent Groups



Notes: The figure represents the treatment effect on the vote share of each four types of candidates: low-score women, high-score women, low-score men, and high-score men. Each color represents a different definition for high-score. The top color is having a test score above the median population, the second color is having a test score one standard deviation above the median, and the last color is having two standard deviation above the median. In this analysis: (i) each dot represents the estimated coefficient on the effect of the treatment on the vote share of each type of candidate, (ii) the average vote share for traditional party candidates is 2.39 and for independent candidates is 1.83, (iii) the underlying unit of observation is the candidate-voting booth pair, N traditional=266,482 and N independent=174,052.

7 Tables

Table 1: Gender gap in candidate and representative attributes: Partisan differences

	Candidates		By gender			
	Traditional	Independent	Traditional		Independent	
	All	All	Men	Women	Men	Women
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Candidates						
Age	46.42	43.57***	48.50	44.51***	43.6	43.53
	[13.12]	[12.37]	[13.69]	[12.29]	[13.15]	[11.59]
Test score	597.24	568.23***	612.29	583.77***	585.72	550.26***
	[103.84]	[92.39]	[107.46]	[98.79]	[83.13]	[98.17]
Experience (percentage)	10.24	0.71***	14.01	6.79***	1.43	0
	[30.34]	[8.43]	[34.77]	[25.20]	[11.91]	[0]
Contributions ($1,000)	34.37	8.19***	40.55	28.65***	7.12	9.24*
	[40.31]	[10.13]	[48.01]	[30.57]	[8.66]	[11.33]
Votes (percentage)	2.82	2.37**	3.06	2.60**	2.04	2.70***
	[2.73]	[2.09]	[3.08]	[2.36]	[1.95]	[2.18]
Candidates	537	282	257	280	141	141
Panel B: Elected						
Age	46.93	39.27***	49.45	43.64**	37.93	40.18
	[13.25]	[11.39]	[14.27]	[11.13]	[12.23]	[10.82]
Test score	615.90	603.32	627.99	601.06	582.27	618.53
	[113.12]	[85.68]	[114.95]	[110.65]	[73.68]	[92.41]
Experience (percentage)	18.89	0***	27.45	7.69**	0	0
	[39.36]	[0]	[45.07]	[27]	[0]	[0]
Contributions ($1,000)	62.81	18.75***	74.01	49.3**	17.7	19.43
	[53.98]	[18.67]	[55.6]	[33.44]	[15.82]	[20.69]
Votes (percentage)	6.54	5.86	7.11	5.79	5.37	6.20
	[4.34]	[2.84]	[4.45]	[4.12]	[3.43]	[2.38]
Elected	90	37	51	39	15	22

[a] Panel A contains a summary of all candidates from traditional parties and independent groups and panel B contains a summary of elected candidates of those same groups. A definition of these groups is made in section 2. Column 1 has the outcome for the traditional parties and column 2 for the independent groups. Column 3 has the outcome for men of the traditional parties and column 4 for women of the traditional parties. Column 5 has the outcome for men of the independent groups and column 6 for women of the independent groups. * report the difference between columns 1 and 2, 3 and 4, and 5 and 6. Standard deviations are in square brackets. *** Significant at the 1 percent level, ** significant at the 5 percent level, * significant at the 10 percent level

Table 2: Baseline differences across voting booths

	(1) Control mean	(2) Control-Any Treat	(3) Control-Candidate	(4) Control-Elected	(5) Observations
Voting Booth Characteristics					
Registered voters	325.650	-0.102	-0.646	0.177	13,479
	[29.412]	(1.384)	(2.35)	(1.695)	
% men	0.481	-0.012	-0.006	0.08	13,479
	[0.158]	(0.009)	(0.016)	(0.012)	
% new voting booths	0.048	0.003	-0.000	0.000	13,479
	[0.213]	(0.009)	(0.003)	(0.002)	
Previous Elections *Congress (2017)*					
Turnout	0.450	0.008	0.025**	-0.001	12,593
	[0.120]	(0.05)	(0.01)	(0.007)	
% of votes for women	0.410	0.000	-0.000	0.000	12,593
	[0.151]	(0.002)	(0.003)	(0.002)	
% votes left	0.543	-0.010**	-0.010	-0.009*	12,593
	[0.127]	(0.004)	(0.007)	(0.005)	
Previous Elections *Referendum (2020)*					
Turnout	0.576	0.002	0.018*	-0.007	12,830
	[0.103]	(0.001)	(0.009)	(0.007)	
% votes in favor	0.793	-0.007*	-0.017**	-0.002	12,830
	[0.148]	(0.004)	(0.007)	(0.005)	
Demographics (Census Zones)					
Number of zones	41.108	0.760	-0.26	1.284	13,479
	[17.687]	(0.831)	(1.413)	(1.017)	
Years of education	11.843	0.028	0.004	0.04	13,479
	[1.888]	(0.067)	(0.115)	(0.082)	
% Indigenous Population	0.102	-0.001	-0.001	-0.000	13,479
	[0.033]	(0.001)	(0.002)	(0.001)	
% of Women Working	0.547	-0.001	-0.002	-0.001	13,479
	[0.061]	(0.002)	(0.004)	(0.003)	
Joint test- Prob $> X^2$		0.76	0.33	0.78	

[a] Column (1) reports variable means for the control group with standard deviations in square brackets

[b] Column (2) reports the coefficient from an OLS regression where the outcome is regressed on a dummy that takes the value of 1 if the voting booth was assigned to any treatment. Columns 3 and 4 I report the coefficients from an OLS regression where the outcome is regressed on a dummy that takes the value of 1 if the voting booth was assigned to the candidate treatment and a dummy that takes the value of 1 if the voting booth was assigned to the elected treatment. Column 3 report the coefficient for the candidate treatment and column 4 report the coefficient for the elected treatment

[c] Columns (2)-(4) include dummies for the strata variables.

*** Significant at the 1 percent level, ** significant at the 5 percent level, * significant at the 10 percent level

Table 3: Treatment impacts on votes for women

	(1)	(2)	(3)	(4)
Any Treatment	0.661**			
	(0.29)			
Candidate Treatment		0.471		
		(0.51)		
Elected Treatment		0.760**		
		(0.36)		
Any Treatment*Traditional			2.961***	
			(0.67)	
Any Treatment*Independent			-2.267***	
			(0.82)	
Candidate Treatment*Traditional				3.030***
				(1.14)
Elected Treatment*Traditional				2.925***
				(0.82)
Candidate Treatment*Independent				-1.743
				(1.32)
Elected Treatment*Independent				-2.542**
				(1.03)
Observations	12339	12339	24672	24672
Mean outcome	51.94	51.94	56.37	56.37
P-value Elected=Candidate		0.64		
P-value Elected=Candidate (Trad)				0.94
P-value Elected=Candidate (Indep)				0.63

[a] The outcome is % women. In columns 1 and 2 the outcome is the percentage of the votes for women in the voting booth. In columns 3 and 4 the outcome is the percentage of votes for women in the voting booth by coalition group, this means that each voting booth has two observations the vote share for women of traditional parties, and the vote share of women of independent groups.

[b] Columns 1 and 3 contain a double lasso regression that regresses the outcome by voting booth against a dummy that takes the value of 1 if the voting booth was treated. Column 2 and 4 contain a double lasso regression that regresses the outcome by voting booth against a dummy that takes the value of 1 if the voting booth was treated with the candidate treatment arm and a second dummy that takes the value of 1 if the voting booth was treated with the elected treatment arm. Columns 3 and 4 have the treatment dummies interacted with a dummy for each coalition group, traditional and independent. These groups are defined in section 2.

[d] Columns (1)-(4) include dummies for the strata variables and baseline controls.

*** Significant at the 1 percent level, ** significant at the 5 percent level, * significant at the 10 percent level

Table 4: Testing for Turnout and Spillover effects

	All		Constitutional Convention		City Council	
	(1) Turnout	(2) Turnout	(3) % Party	(4) % Party	(5) % women	(6) % women
Any Treatment	0.119				-0.081	
	(0.16)				(0.29)	
Candidate Treatment		0.176				-0.115
		(0.28)				(0.45)
Elected Treatment		0.09				-0.063
		(0.20)				(0.37)
(Any Treatment)*Traditional			-0.148			
			(0.66)			
(Any Treatment)*Independent			0.264			
			(0.67)			
Candidate Treatment*Traditional				0.089		
				(1.16)		
Elected Treatment*Traditional				-0.273		
				(0.79)		
Candidate Treatment*Independent				-0.04		
				(1.13)		
Elected Treatment*Independent				0.422		
				(0.83)		
Observations	12339	12339	24678	24678	12044	12044
Mean outcome	44.97	44.97	38.73	38.73	46.59	46.59

[a] The outcomes of this table are: turnout, which is number of votes, divided by people registered in the voting booth; % party, which is the percentage of votes that each of the two groups (traditional and independent) got in the voting booth; % women, which is the percentage of the votes for women in the voting booth.

[b] Columns 1, 3 and 5 contain a double lasso regression that regresses the outcome by voting booth against a dummy that takes the value of 1 if the voting booth was treated. Columns 2, 4, and 6 contain a double lasso regression that regresses the outcome by voting booth against a dummy that takes the value of 1 if the voting booth was treated with the candidate treatment arm and a second dummy that takes the value of 1 if the voting booth was treated with the elected treatment arm 2.

[c] Columns 3 and 4 have the treatment dummies interacted with a dummy for each coalition group, traditional and independent. These groups are defined in section 2

[d] Columns (1)-(6) include dummies for the strata variables and baseline controls. Columns 5 and 6 include municipality fixed effects.

*** Significant at the 1 percent level, ** significant at the 5 percent level, * significant at the 10 percent level

Table 5: How does test score and previous experience correlates with political outcomes?

	% votes				Political success index			
	All	All	Trad	Indep	All	All	Trad	Indep
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Av Score	0.471***	0.428**	0.489***	0.386***	0.057**	0.034	0.047	0.114*
	(0.11)	(0.18)	(0.15)	(0.14)	(0.03)	(0.04)	(0.03)	(0.06)
Woman	0.222	0.222	-0.073	0.74	-0.015	-0.015	0.005	-0.082
	(0.20)	(0.20)	(0.27)	(0.29)	(0.05)	(0.05)	(0.06)	(0.10)
Av Score*Woman		0.083				0.050		
		(0.23)				(0.05)		
Experience	0.019***	0.019***	0.019***	0.001	-0.055	-0.054	-0.057	0
	(0.01)	(0.01)	(0.01)	(0.00)	(0.07)	(0.08)	(0.08)	(.)
Observations	676	676	449	227	107	107	76	31
Mean outcome	2.713	2.713	2.861	2.419	0.145	0.145	0.151	0.129

[a] The outcomes of this table are: % of votes, which represent the the vote share of each candidate, and Political success, which is an index for political success given by the average of the dummies Gender replacement (which is a dummy that takes the value of 1 for candidates that were not replacement of other due to gender parity), Directive (which is a dummy that takes the value of 1 for the president and vice-presidents of the constitutional convention), and Debate TV (which is a dummy that takes the value of 1 for people that participated in debates in public TV)

[b] Columns 1-8 contain an OLS regression that regresses the outcome by person against their normalized average test score (Av score), a dummy Woman that takes the value of 1 for woman, the interaction between normalized average test score and the dummy Woman, and Experience dummy that takes the value of 1 for people that has been elected in previous elections.

[c] Columns 1-8 have person fixed effects.

[d] Column 1 and 2 contain all the candidates, column 3 only candidates from the traditional party, and column 4 only candidates from independent groups. Column 5-6 contain all members of the constitutional convention, column 7 only traditional party, and column 8 only independent.

*** Significant at the 1 percent level, ** significant at the 5 percent level, * significant at the 10 percent level

Table 6: Treatment impacts by candidates electability

	Front-runners		Not front-runners	
	(1) Women	(2) Men	(3) Women	(4) Men
Any Treatment*Traditional	1.506*	-2.108**	1.047*	-0.430
	(0.87)	(1.01)	(0.62)	(0.51)
Any Treatment*Independent	-2.569**	2.852**	-0.695	0.426
	(1.13)	(1.11)	(0.70)	(0.60)
Observations	12498	12498	12498	12498
Mean outcome Traditional	31.59	33.00	19.31	16.12
Mean outcome Independent	45.09	30.43	16.23	8.25

[a] The outcome is % votes, which is the percentage of votes the group from each electoral list obtained at the voting booth. In columns 1 and 2 the outcome is the percentage of the votes for women and men who were front-runners. In columns 3 and 4 the outcome is the percentage of the votes for women and men who were not front-runners.

[b] Columns (1)-(4) contain a double lasso regression that regresses the outcome by voting booth against a dummy that takes the value of 1 if the voting booth was treated. Columns (1)-(4) include dummies for the strata variables and baseline controls.

*** Significant at the 1 percent level, ** significant at the 5 percent level, * significant at the 10 percent level

Table 7: Did male and female committee members vote differently on constitutional articles?

	All			Low-score	High-score
	(1)	(2)	(3)	(4)	(5)
Woman*Social	0.033***	0.029***	0.031***	0.017	0.034**
	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)
Independent*Social		0.032**	0.036**	0.022	0.075***
		(0.01)	(0.02)	(0.03)	(0.01)
Woman*Independent*Social			-0.008	0.064	-0.083***
			(0.03)	(0.05)	(0.03)
Woman*Economic	0.010	0.007	0.012	-0.004	0.021
	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)
Independent*Economic		0.015	0.023**	0.015	0.043***
		(0.01)	(0.01)	(0.02)	(0.01)
Woman*Independent*Economic			-0.014	0.022	-0.051**
			(0.02)	(0.04)	(0.02)
Woman	0.068	0.031	0.036	-0.048	0.011
	(0.05)	(0.05)	(0.06)	(0.10)	(0.09)
Independent		0.252***	0.264***	0.186**	0.320***
		(0.04)	(0.05)	(0.09)	(0.06)
Woman*Independent			-0.020	0.092	-0.075
			(0.07)	(0.13)	(0.10)
Observations	257544	257544	257544	89936	126728
Mean men traditional social	0.452	0.452	0.452	0.493	0.450
Mean men traditional economic	0.472	0.472	0.472	0.526	0.463
Mean men traditional administrative	0.517	0.517	0.517	0.557	0.522

[a] The outcome of this table is dummy variable that takes the value of 1 for a liberal vote and 0 for non liberal.
[b] Woman is a dummy variable that takes the value of 1 for female members, Independent is a dummy that takes the value of 1 for independent elected members. Social is a dummy variable that takes the value of 1 for votes related to social rights. Economic is a dummy variable that takes the value of 1 for votes related to economics, and the omitted variable is for votes related to administrative things. High-score is defined as having an average test-score one standard deviation above the population mean, and low-score is all the rest.
[c] Columns 1-4 include all members of traditional parties and independent groups, column 5 includes only low-score members, and column 6 includes only high-score members.
[d] Columns 1-6 include dummies for Social and Economic. Standard errors are cluster at the representative level.
*** Significant at the 1 percent level, ** significant at the 5 percent level, * significant at the 10 percent level

A Additional material

A.1 Definition of categories of articles for the constitution

1. Economically liberal: Regulations to workers (unions, social security, hours of work, strike, others), regulations to public and private firms, regulations to the usage of water and energy, transfers to regions, public funding of rights in the constitution, regulation of science, prices of services, regulation of expropriation, regulation on taxes, consumers' rights

2. Economically conservative: Independence of central bank, private property, private providers in health and education

3. Socially liberal:

    - Gender: Gender parity, sexual rights, domestic violence, domestic work, care, and women's rights
    - Other: Indigenous rights, nature's rights, climate change, identity, termination of life and discrimination, human rights, culture, memory, and education.

4. Socially conservative: Nationalism, traditional family, privacy homes, and liberty of education

5. Administrative: Regulations on elections, regulations on representatives and government, corruption, decentralization, judges and courts, changes in the constitution, territory, and nationality[6].

[6]Voting liberal on administrative issues is defined as voting yes for the article, as the left-wing candidates proposed most of the articles that got voted on this topic.

A.2 Candidate treatment arm effects

The candidate treatment arm consisted of a letter informing voters that electoral lists must be 50 percent men and 50 percent women due to gender quotas. For this treatment to be effective, voters must benefit from knowledge about the candidate selection process. The candidate treatment arm would be ineffective if voters had complete information about each candidate's quality. If voters had insufficient information about the quality of candidates, the selection process would provide information about the quality distribution.

The following framework is an extension of the example presented in section 3.3. In the following extension, I assume that voters have incomplete information about the quality of candidates. As a result, when voters are exposed to the candidate treatment arm, they update their beliefs about the distribution of quality by gender.

As before, I consider a single district with two seats. Two parties $P \in \{A, B\}$ provide candidate lists made up of four candidates j^G with $G \in \{M, F\}$ representing the candidates' gender. Parties' voter base is fixed as I assume citizens have fixed partisan preferences. Reflecting this, I model voters as having lexicographic party preferences and then trading off two candidates' characteristics: gender and quality.

The utility function for votes is the same as in equation 1. I assume voters have incomplete information about candidates as in Casey (2015). Voters receive a noisy signal (θ_{ij}) of candidates quality that combines the true quality of the candidate with a mean-zero, normally distributed disturbance term:

$$\theta_{ij} = q_j + \nu_{ij} \text{ where } \nu_{ij} \sim N(0, \sigma_\nu^2) \tag{10}$$

Under Bayesian updating, voters from party P form an expectation about the quality of each candidate that weights the noisy signal against their prior beliefs. Then, given the signal, the expected quality is the following:

$$E(q|\theta) = \delta_G \theta + (1 - \delta_G)\mu_G \text{ where } \delta_G = \frac{\sigma_{qG}^2}{\sigma_{qG}^2 + \sigma_\nu^2} \tag{11}$$

Where for party P and gender G, μ_G is the mean of the quality distribution and $\sigma_q^2 G$ is the variance.

Turning to parties, I assume that parties maximize voters' utility. Parties observe candidates' quality (q_j) and gender. From voters they observe gender and quality preferences (g^P, ϕ^P), and they know the distribution of ϵ_{ij}. As in the example, assume that the voter base of party A prefers men ($g^A > 0$) and that the parameter is big enough that voters prefer a male candidate in almost all cases, with most of the majority being sincere. This assumption is made to exemplify how gender quotas affect party selection. To fix ideas, let me assume that each party P represents 50 percent of the electoral base. As a result, each party P will obtain one of the two seats.

Each party receives four random draws of female candidates and four random draws of male candidates from a common pool to select candidates. I assume that the candidate pool's quality distribution is the same for each party and gender. The assumption reflects the idea that each party has access to the same recruitment technology with some randomness.

Let me consider how party A selects its candidates without a gender quota. As the voter base of party A is gender biased ($g^A > 0$), for the same quality level, the average voter of party A values a male candidate g^A more than a female candidate. Thus, party selection will benefit men in expectation. As a result, a gender gap in the quality of candidates will exist as the mean of men μ^M will be lower than the mean of women μ^F.

When a gender quota that requires an equal number of male and female candidates is imposed, each party will select the two candidates from each gender with the highest quality. As a result, the gender gap in quality for party A would disappear. This means that for party A, μ^F decreases, and μ^M increases.

Prediction A1: The candidate treatment arm will increase the gender gap in votes. For parties with a preference for male candidates, it will increase the vote share for male candidates. For parties with a preference for female candidates, it will increase the vote share for male candidates.

B Additional material: Figures

Figure B1: Candidate treatment (translated letter)

By this letter, we are writing to you to share information regarding the upcoming elections to elect the ***Constituent Convention.***

In these elections the 155 members of the Constituent Convention will be elected.

To ensure gender parity in candidates, each list must have an equal number of male and female candidates. This ***will allow each person to choose who to vote for from an equal number of male and female candidates.***

We invite you to take advantage of this unique opportunity in our history to be able to ***choose who will be you representative to write a new Constitution for Chile.*** You can find the list of all the candidates in you district by entering your ID number in https://consulta-candidato.servel.cl

This letter is part of a study on elections supported by the United Nations Development Program. For questions or additional information, we appreciate writing to:
antonia.paredeshaz@yale.edu

PNUD

Figure B2: Elected treatment (translated letter)

By this letter, we are writing to you to share information regarding the upcoming elections to elect the ***Constituent Convention.*** In these elections the 155 members of the Constituent Convention will be elected.

To ensure gender parity in candidates, each list must have an equal number of male and female candidates. This ***will allow each person to choose who to vote for from an equal number of male and female candidates.***

In addition, gender parity in the Constituent Convention will be ensured.

How will this be accomplished?

- The elected candidates in each district will be half women and half men*.
- That means that if the vote in a district where 4 constituents are elected results in the election of 3 candidates of the same gender, for example 3 men and 1 woman, the least voted man of those 3 will be replaced by the most voted woman within his same party.
- Thus, in a district with 4 constituents, 2 men and 2 women will always be elected.

* For districts with an odd number of constituents, the difference between men and women may not be greater than one. For example, in a district of 3 constituents there will be 1 man and 2 women, or 2 men and 1 woman.

We invite you to take advantage of this unique opportunity in our history to be able to ***choose who will be you representative to write a new Constitution for Chile.*** You can find the list of all the candidates in you district by entering your ID number in https://consulta-candidato.servel.cl

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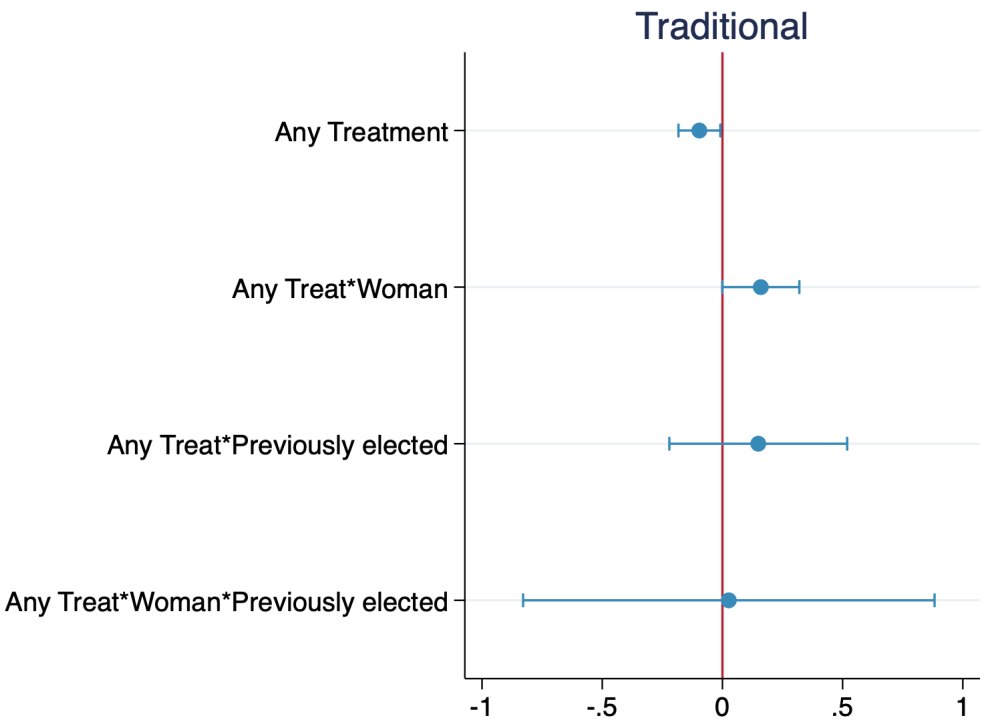
Figure B3: Do treatment impacts on candidate vote share vary with candidate experience?



Notes: The figure represents the treatment effect on the vote share by electoral coalition (traditional and independent) of each four types of candidates: previously elected women, not previously elected women, previously elected men, and not previously elected men. In this analysis: (i) each dot represents the estimated coefficient on the effect of the treatment on the vote share of each type of candidate, (ii) the average vote share for traditional party candidates is 2.39 and for independent candidates is 1.83, (iii) the underlying unit of observation is the candidate-voting booth pair, N traditional=266,482 and N independent=174,052.

C Additional material: Tables

Table C1: Differences between coalitions: Other independent

	(1) All	(2) Men	(3) Women	(4) Difference
Panel A:Candidates				
Candidates	459	231	228	3
Age	40.70	42.25	39.13	3.12***
	[12.42]	[13.14]	[11.46]	(1.15)
Test score	556.52	569.21	544.12	25.09
	[99.50]	[105.26]	[92.15]	(10.57)
Political Experience (percentage)	0.87	1.30	0.44	0.86
	[9.30]	[11.35]	[6.62]	(0.87)
Contributions (thousands $)	6.43	7.08	5.78	1.30
	[12.66]	[14.17]	[10.91]	(1.26)
Votes (percentage)	1.34	1.21	1.48	-0.27*
	[1.65]	[1.55]	[1.73]	(0.15)
Panel B:Elected				
Elected	11	4	7	-3
Age	44.27	41.25	46	-4.75
	[12.17]	[7.59]	[14.45]	(7.88)
Test score	620.45	634.88	610.83	24.04
	[72.13]	[58.75]	[83.77]	(48.65)
Experience (percentage)	0	0	0	0
	[0]	[0]	[0]	(0)
Contributions ($1,000)	20.02	24.18	17.24	6.94
	[11.24]	[15.28]	[8.03]	(7.30)
Votes (percentage)	6.32	7.61	5.58	2.03
	[3.65]	[4.20]	[3.41]	(2.31)

[a] Panel A contains a summary of all candidates from the other groups and panel B contains a summary of elected candidates of the same group. A definition of these groups is made in section 2. Column 1 has the outcome for all candidates, column 2 has the outcome for men, column 3 for women, and column 4 for the difference. Standard deviations are in square brackets, and standard errors in parenthesis.
*** Significant at the 1 percent level, ** significant at the 5 percent level, * significant at the 10 percent level

Table C2: Letters Received

	(1) Letters Received	(2) Letters Received	(3) Letters Received
Candidate treatment	0.948***		
	(0.01)		
Elected treatment		0.951***	
		(0.00)	
Any treatment			0.950***
			(0.00)
Strata Dummy	Yes	Yes	Yes
Observations	13264	13372	13486

[a] Column (1)-(3) contain an OLS regression that regresses the percentage of letters received by the voting booth against a dummy that takes the value of 1 if the voting booth was treated.

[c] Columns (1)-(3) include dummies for the strata variables.
*** Significant at the 1 percent level, ** Significant at the 5 percent level, * Significant at the 10 percent level

Table C3: How does test score and previous experience correlates with political outcomes?

	Gender replacement		Directive		Debate TV	
	(1)	(2)	(3)	(4)	(5)	(6)
Av score	0.107***	0.095**	0.061*	0.005	0.054	0.064
	(0.04)	(0.05)	(0.03)	(0.05)	(0.04)	(0.07)
Woman	0.045	0.046	0.010	0.011	-0.040	-0.040
	(0.05)	(0.05)	(0.07)	(0.07)	(0.07)	(0.07)
Av score*Woman		0.027		0.121*		-0.021
		(0.07)		(0.07)		(0.08)
Experience	0.026	0.026	-0.073	-0.071	-0.037	-0.037
	(0.08)	(0.08)	(0.08)	(0.08)	(0.10)	(0.10)
Observations	107	107	107	107	107	107
Mean outcome	0.907	0.907	0.131	0.131	0.159	0.159

[a] The outcomes of this table are: Gender replacement, which is a dummy that takes the value of 1 for candidates that were not replacement of other due to gender parity; Directive, which is a dummy that takes the value of 1 for the president and vice-presidents of the constitutional convention; Debate TV, which is a dummy that takes the value of 1 for people that participated in debates in public TV

[b] Columns 1-6 contain an OLS regression that regresses the outcome by person against their normalized average test score (Av score), a dummy Woman that takes the value of 1 for woman, the interaction between normalized average test score and the dummy Woman, and Experience dummy that takes the value of 1 for people that has been elected in previous elections.

[c] Columns 1-6 have person fixed effects.
*** Significant at the 1 percent level, ** significant at the 5 percent level, * significant at the 10 percent level

Table C4: Sponsorships

	All (1)	Women (2)	Men (3)
Average test score	110.2**	137.9	90.46*
	(55.15)	(98.23)	(54.22)
Women	203.8*		
	(106.30)		
Observations	416	208	208
Mean outcome	768.1	880.2	655.9

[a] The outcomes of this table are the total number of sponsorships by candidate.

[b] The variable Average test score is the normalized average test score by candidate. The variable Women is a dummy variable that takes the value of 1 for candidates that are women.

[c] Column (1) uses the whole sample, column (2) only the female candidates, and column (3) only the male candidates

*** Significant at the 1 percent level, ** significant at the 5 percent level, * significant at the 10 percent level

Table C5: Do treatment impacts on candidate vote share vary with candidate ability?: Traditional parties

	Median	1 St.dv.	2 St.dv.
Any Treatment	-0.277**	-0.119**	-0.0755**
	(0.12)	(0.06)	(0.03)
Any Treat*High	0.277**	0.122*	0.0970
	(0.13)	(0.07)	(0.07)
Any Treat*Woman	0.271**	0.144**	0.111**
	(0.13)	(0.07)	(0.04)
Any Treat*High*Woman	-0.245*	-0.129	-0.157
	(0.14)	(0.09)	(0.11)
Observations	234567	234567	234567
Low-score men	6.35	4.72	4.16
High-score men	4.77	5.18	3.94
Low-score women	2.77	2.98	6.47
High-score women	4.79	5.78	6.87

[a] The outcomes of this table is % votes, which is the vote share for each candidate in the voting booth.

[b] High-score in column 1 is defined as having a test score over the average. In column 2 is defined as having a test score one standard deviation over the average, and in column 3 as having to standard deviations over the average.

[c] Columns (1)-(3) contain a double lasso regression that regresses the outcome by voting booth. Standard errors are clustered at the table level.

[d] Columns (1)-(3) include dummies for the strata variables, baseline controls, and candidate fixed effects.

*** Significant at the 1 percent level, ** significant at the 5 percent level, * significant at the 10 percent level

Table C6: Do treatment impacts on candidate vote share vary with candidate ability?: Independent groups

	Median	1 St.dv.	2 St.dv.
Any Treatment	-0.006	0.075	-0.033
	(0.07)	(0.05)	(0.04)
Any Treat*High	-0.019	-0.215**	0.068
	(0.08)	(0.10)	(0.06)
Any Treat*Woman	-0.007	-0.096	0.059
	(0.11)	(0.06)	(0.06)
Any Treat*High*Woman	0.082	0.403***	0.072
	(0.12)	(0.12)	(0.22)
Observations	139536	139536	139536
Low-score men	1.15	1.66	2.57
High-score men	2.67	3.05	1.95
Low-score women	2.71	2.86	2.82
High-score women	2.99	3.01	6.05

[a] The outcomes of this table is % votes, which is the vote share for each candidate in the voting booth.

[b] High-score in column 1 is defined as having a test score over the average. In column 2 is defined as having a test score one standard deviation over the average, and in column 3 as having to standard deviations over the average.

[c] Columns (1)-(3) contain a double lasso regression that regresses the outcome by voting booth. Standard errors are clustered at the table level.

[d] Columns (1)-(3) include dummies for the strata variables, baseline controls, and candidate fixed effects.

*** Significant at the 1 percent level, ** significant at the 5 percent level, * significant at the 10 percent level

Table C7: Treatment effect by candidate: Previously Elected

	(1)
Any Treatment	-0.0568**
	(0.03)
Any Treat*Previously elected	0.0988
	(0.10)
Any Treat*Woman	0.0762*
	(0.04)
Any Treat*Woman*Previously elected	0.0784
	(0.35)
Observations	266482
Mean outcome	2.394

[a] The outcomes of this table is % votes, which is the vote share for each candidate in the voting booth. Column (1) has the results for traditional parties and column 2 for independent groups.

[b] Previously elected is a dummy variable that takes the value of one for candidates that were elected on previous elections.

[c] Columns 1 and 2 contain a double lasso regression that regresses the outcome by voting booth. Standard errors are clustered at the table level.

[d] Columns 1 and 2 include dummies for the strata variables, baseline controls, and candidate fixed effects.

*** Significant at the 1 percent level, ** significant at the 5 percent level, * significant at the 10 percent level

Table C8: Did male and female committee members vote differently on constitutional articles?: Gender

	All			Low-score	High-score
	(1)	(2)	(3)	(4)	(5)
Woman*Gender	0.029***	0.026***	0.019**	0.005	0.010
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Independent*Gender		0.016**	0.001	-0.007	-0.004
		(0.01)	(0.01)	(0.02)	(0.02)
Woman*Independent*Gender			0.026	0.029	0.042*
			(0.02)	(0.03)	(0.02)
Woman*Social	0.030***	0.026***	0.029***	0.016**	0.033***
	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)
Independent*Social		0.030***	0.036***	0.023**	0.075***
		(0.00)	(0.01)	(0.01)	(0.01)
Woman*Independent*Social			-0.011	0.061***	-0.088***
			(0.01)	(0.01)	(0.01)
Woman*Economic	0.010*	0.007	0.012*	-0.004	0.021**
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Independent*Economic		0.015***	0.023***	0.015	0.043***
		(0.01)	(0.01)	(0.01)	(0.01)
Woman*Independent*Economic			-0.014	0.022	-0.051***
			(0.01)	(0.02)	(0.02)
Observations	257544	257544	257544	89936	126728
Mean men traditional gender	0.448	0.448	0.448	0.486	0.461
Mean men traditional social	0.452	0.452	0.452	0.493	0.450
Mean men traditional economic	0.472	0.472	0.472	0.526	0.463
Mean men traditional administrative	0.517	0.517	0.517	0.557	0.522

[a] The outcome of this table is dummy variable that takes the value of 1 for a liberal vote and 0 for non liberal.
[b] Woman is a dummy variable that takes the value of 1 for female members, Independent is a dummy that takes the value of 1 for independent elected members, High score is a dummy that takes the value of 1 for representatives with test scores above the mean of the population. Social is a dummy variable that takes the value of 1 for votes related to social rights. Economic is a dummy variable that takes the value of 1 for votes related to economics, and the omitted variable is for votes related to administrative things. Gender is a variable that takes the value of 1 for social votes related to quotas, domestic violence, care, and sexual rights.
[c] Columns 1-4 include dummies for Woman, Social, Economic, and candidate fixed effects. Columns 2-4 include a Independent dummy, and columns 3 and 4 include a High score dummy, and column 4 includes a Woman*Independent dummy.
*** Significant at the 1 percent level, ** significant at the 5 percent level, * significant at the 10 percent level