

Gender and Political Coalitions*

Manuel Bagues[†], Pamela Campa[‡]

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Abstract

Women are generally under-represented in top positions in the labor market, and it is largely documented that the gender gap in professional careers widens as the seniority of the position increases. In this paper we study one potential explanation for the “leaky pipeline”, namely gender differences in success at forming coalitions in male-dominated environments. We use data from municipal elections in Spain, where municipal councils choose the mayor among list-leaders by majority rule, after a general election to select the council members. We study gender-mixed close elections between 1999 and 2015 and show that female leaders that gain the plurality of votes in the general election are significantly less likely to lead a government coalition than male leaders with the same electoral support. The gender difference is specific to elections where no party wins a seat advantage, is not accounted for by differences in party affiliation or political experience, and is larger the higher the share of men involved in the bargaining. Our findings might be relevant in contexts where a group elects its head (e.g. government assemblies or corporate boards). More generally, since group support and alliances are arguably crucial to lead a hierarchical organization, our findings indicate that lower success in securing group support and alliances is a potential contributor to women’s scarcity in top positions.

Keywords: gender, leadership, coalition and bargaining, group dynamics

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[†]The University of Warwick, Economics Department; email: Manuel.Bagues@warwick.ac.uk

[‡]SITE, Stockholm School of Economics; email: pamela.campa@hhs.se.ca

Introduction

Women are generally under-represented in top positions in various organizations, and it is largely documented that the gender gap in representation widens as the seniority of the position increases. Local and national governments are no exception. Across EU-28 countries, for instance, women account for 33% of the municipal councillors, but only for 15% of the mayors, who usually lead the municipal council. In Spain, the country which is the focus of this study, the share of female mayors has been consistently and substantially lower than the share of female councilors over the last five elections (see Figure 1).

A number of factors can be at the origin of the leaky pipeline in political jobs, and identifying and understanding the relative importance of all these factors is crucial to assess policies that aim at improving the gender balance in top political positions.

Women might be less likely to progress in political careers because they are less ambitious than men (Fox and Lawless, 2004 and 2014), are less willing to enter a competition (Niederle and Vesterlund (2007); Preece and Stoddard (2015)), and are more constrained by family and relational considerations (Folke and Rickne, 2018). Additionally, voters' bias against female politicians can slow or halt women's progression through the career ladder, either through voters' selection of politicians, or through the selection at party-level when parties adequately represent voters' preferences.¹ Parties might also promote women to leadership positions at lower rates than men even when voters are not biased against female leadership, if there are important agency problems between voters and parties (see, e.g., Bagues and Esteve-Volart, 2012). Importantly, all these factors need not be mutually exclusive, and can conversely feed and reinforce each other.

We propose and test an additional explanation for the “leaky pipeline” in political jobs, namely gender differences in success at forming coalitions in male-dominated environments.

Crucially, while own party's and voters' support is sufficient for access to electoral lists and

¹In the latest wave of the World Value Survey (2010-2104), 15% of respondents in Spain, the country that is the focus of this study, reported that they agree or strongly agree with the statement “Men make better political leaders than women do”. This percentage is 11% in the Netherlands and in Sweden, and around 20% in Germany and the United States. While these percentages might appear high, it is important to keep in mind that the World Value Survey does not ask the opposite question. Put it differently, if a non-negligible fraction of the respondents who disagree with the statement above think that *women are better political leaders than men*, then we would conclude that there is no gender bias on average in the electorate. Bagues and Campa (2019) also show that Spanish parties that were forced by a gender quota to increase their share of female candidates did not experience sizeable changes in vote shares, suggesting that an increase in the share of female candidates is not perceived negatively by voters.

election to legislative positions, promotion to top governmental jobs often requires cross-partisan support.² There are at least two reasons why women’s chances to secure cross-partisan support might be lower than men’s. First, women are less likely than men to enter negotiations, at least in certain contexts (see, e.g., Bowles, Babcock and Lai, 2007), and negotiations are of paramount importance in the process to form coalition governments. Second, women are systematically a minority in parliamentary institutions³, and experimental evidence shows that when working in male-majority teams women are less confident in their relative performance, less influential, more swayed by others in team discussions, and less likely to run and receive support for leadership positions (see Born et al., 2018). Against this background, women can be expected to have lower chances to be promoted to top governmental jobs even when they are willing to lead and have secured support from own party and voters.

In this paper we leverage an institutional feature of mayoral elections in Spain, which allows comparing female and male leaders who can negotiate with other parties to become mayor and have the same bargaining power.

Spanish municipal councils choose the mayor among list-leaders by majority rule, after a general election to select the council members. We study gender-mixed close elections between 1999 and 2015 and show that female leaders who gain the plurality of votes in the general election are around 20% less likely to form a government coalition than male leaders with similar electoral support. The gender gap is observed only when the first and second leader tie in the number of seats won in the municipal council, showing that leaders’ gender matters only when no part has a relatively large bargaining advantage. We also show that the gap is not accounted for by differences in leaders’ party affiliation or political experience.

Further, we show that the gender difference is larger the higher the share of men sitting in the municipal council, which is consistent with the existing evidence on gendered group dynamics (see, e.g., Gagliarducci and Paserman, 2011, and Born et al., 2018).⁴

²Cross-parties agreements are often needed to assign governmental positions in proportional electoral systems, or to choose committee members in the US Congress.

³In the 2015 local elections, approximately 35% of the elected councilors to Spanish municipalities were women.

⁴The gender composition of the municipal council could also matter for indirect reasons, i.e. because it is a proxy for the degree of gender bias in the municipality. However, an alternative proxy for the underlying attitudes toward female leadership, which is based on the election of female politicians in similarly-sized municipalities in the same province, is not correlated with the magnitude of the estimated gender difference. Evidence from the introduction of a gender quota in 2007, which caused a modest exogenous increase in the share of female councilors in treated municipalities, also confirms that the dominance of men in the council, more than the underlying gender-role attitudes

Why does gender affect leaders' successfulness at forming cross-party coalitions? One potential explanation is that male leaders, who are a majority, have a preference for forming coalitions with other men. An alternative or complementary explanation is that women are less capable or different at negotiating than men. In order to understand whether women negotiate systematically differently than men, we consider other outcomes of the bargaining process, namely whether none of the two most voted leaders becomes mayor, whether the mayor changes during the legislature,⁵ and whether the most-elected leader becomes vice-mayor. We fail to find evidence that the gender of the most voted leader affects these bargaining outcomes, suggesting that, at least with respect to the dimensions studied, women do not negotiate different deals than men. The evidence is that a woman being the most voted leader makes the council significantly more likely to appoint the second most-voted leader, who is a man, as mayor; the female leader does not appear to be part of the governing coalition.

Overall, our analysis suggests that women who are willing to lead and who are supported by their own party and voters are nevertheless penalized in a context where cross-party coalitions are needed to obtain a governmental position. Assessing how much of the leaky pipeline in top municipal jobs is determined by this gender difference is challenging. Based on a counterfactual exercise, we conclude that in the sample of mixed-race close elections with tied seats, the number of female mayors in expectation would be 42% larger if there were no gender differences in the probability of forming a governing coalition; although this is a large impact, the implied overall increase in the share of female mayors in Spain would necessarily be negligible, since yearly only between 2 and 3% of the elections are mixed races resulting in tied seats. However, the dynamic effects on the selection of women into list-leadership cannot be assessed, and it is therefore ultimately not possible to quantify the overall impact of the observed gender difference on the share of female mayors. In other words, the fact that female leaders face a disadvantage in forming coalitions suggests that women face more challenges than men when they try to climb the career ladder in politics. These challenges can in turn affect women's decision to run for top political jobs, as well as their selection into these jobs, ultimately skewing the gender balance in a larger number of positions than those

in the municipality, are responsible for women's lower chances to be appointed mayor. An important caveat of this part of the analysis, however, is that the modest increase in women's representation in the council caused by the quota does not provide sufficient variation to estimate heterogeneous effects precisely.

⁵Coalition partners can agree to alternate in the mayoral position, with one leader typically being appointed mayor in the first part of the legislature and the other one in the second part.

decided in the marginal elections studied here.

Moreover, in terms of the economic importance of the effects estimated in this study, it is relevant to notice that while the type of disadvantage that we document arguably matters in numerically few cases, the payoffs of coalition-formation in politics are often very high. Differently put, the evidence presented here suggests that gender difference in successfulness at forming coalitions reduce women’s presence in high profile positions (e.g. mayors) that are numerically few but very impactful in terms of individual (i.e. for women’s career in politics) and societal outcomes.^{6,7}

Finally and perhaps most notably, the finding on the importance of the gender composition of the council confirms, in a real-world setting, laboratory evidence that women’s willingness and/or opportunities to lead a group diminish as the share of men in the group increases. As observed in Born et. al (2018), such finding suggests that gender inequalities are self-reinforcing. It also highlights a mechanism through which policies aimed at increasing women’s presence in parties and legislative bodies, such as candidate gender quotas, can ultimately impact women’s presence in leadership and executive position, where their representation is to this day still especially low.

The rest of the paper is organized as follows. Section 1 reviews the relevant literature. Section 2 describes the institutional context. In Section 3 we present data and empirical strategy, followed by results in Section 4. Section 5 concludes and illustrates future developments of this research project.

⁶A higher gender balance in top positions in hierarchical organizations would have a number of potential implications for society. First, under the assumption that women are less likely to form coalitions because of discrimination from male colleagues, the evidence presented here points toward the existence of disparities of opportunities in accessing influential positions, which might be an undesirable societal feature *per se*. Second, the selection of talent into top-positions would improve in absence of such discrimination (see Bertrand, 2018). The selection into top-positions is also not optimized if ability to form coalitions is not a valence issue for voters, or if it is not correlated with “ability to govern” broadly speaking. Third, according to citizen-candidate models, if men and women differ in their preferences about the composition of public spending, the gender of policy-makers may be relevant in determining policy outcomes (Osborne and Slivinski, 1996; Besley and Coate, 1997). The existing empirical evidence tends to find gender differences in preferences over policies and voting behavior (see, e.g., Funk and Gathmann (2015) and Ranhill and Weber (2017)). The evidence on the impact of the gender of policy-makers on policy outcomes is more mixed, suggesting that such impact is probably very context-dependent (see, e.g., Chattopadhyay and Duflo (2004), (Svaleryd, 2009), Clots-Figueras (2011); Brollo and Troiano (2016); Ferreira and Gyourko (2014); Bagues and Campa (2017)). Fourth, exposure to “powerful women” might help breaking stereotypes about women in politics, accelerating the process of women’s inclusion in governing institutions (Beaman et al., 2009).

⁷We also note that forming cross-partisan coalitions can help individual political careers in contexts that transcend the coalition-government formation process studied here. Recent empirical work suggests that connections with opposition parties might bolster a candidate chance to be appointed to governmental positions, implying that cross-partisan support for top political appointments can be beneficial even when a coalition government is not needed (see Cintolesi, 2018).

1 Related Literature

This paper contributes to a number of literatures.

Primarily it is related to the large body of work on the causes of women’s under-representation in politics. Papers in this literature have proposed as likely explanations both “supply” and “demand-side” factors. The supply-side explanation focuses on women’s unwillingness to run for top-political jobs, because of, e.g., lack of political ambition (Fox and Lawless, 2004; 2014), their tendency to shy away from competition (Preece and Stoddardb, 2015), or the importance of family and relational considerations (Folke and Rickne, 2019). Butler and Preece (2019) also study gender differences in confidence in party support.

On the demand-side, Le Barbanchon and Sauvagnat (2018) find that voters in France discriminate against women. However, in the Spanish context Esteve-Volart and Bagues (2012) show that parties fail to promote women to the best positions on the ballot, in spite of lack of bias on the voters’ side.

We contribute to this literature by assessing the importance of an additional barrier for women when they climb the career ladder in politics, namely having fewer chances than men to form coalitions in male-dominated environments.

The existing literature suggests at least two reasons why women might face a disadvantage in forming political coalitions. A large body of work has demonstrated that women are less likely than men to enter into negotiations (Bowles, Babcock and Lai, 2007; Leibbrandt and List, 2015; Small, Gelfand, Babcock and Gettman, 2007; Exley, Niederle and Vesterlund, 2016). However, recent work also emphasizes that women enter into negotiations as much as men when it is profitable to do so (Exley, Niederle, and Vesterlund, 2018). Recent laboratory evidence also suggests that men do not have an advantage once they enter into a bargaining, and in some contexts they are “softer” negotiators when their counterpart is a woman (Huang and Low, 2018).

Moreover, laboratory evidence shows that women are less successful at obtaining leadership positions in male-dominated environment, and they are also less likely to put their name forward to be leader, correctly anticipating lower support from male team members (see Born et al., 2018). We test the importance of the gender composition of teams for women’s advancement to leadership positions in a real-world setting. In related work, Gagliarducci and Paserman (2011) have shown

that women in male-dominated environments are less likely to keep leadership positions after they got them.

Finally, we contribute to recent literature on determinants of bargaining outcomes that transcend the distribution of bargaining power. In the same setting as that studied in this paper, Fujiwara and Sanz (2018) document that social norms dictate coalition-making behavior. Huidobro and Falco-Gimeno (2019) study gender and age as determinants of bargaining outcomes. Their study largely overlaps with ours, and we started working on the respective papers independently. With respect to their work, we propose some important differences in the empirical strategy - e.g., we rely on mixed-races, for reasons explained below (see Section 3.2). We also explore heterogeneity of the observed gender difference on a number of dimensions (bargaining advantage, gender composition of the council), with the goal of uncovering some underlying mechanisms for the observed gender difference. In future work we also plan to extend the study to a number of other countries with institutional contexts largely similar to the Spanish case studied here.

2 Institutional Context

2.1 Electoral rule

Spanish mayors are appointed through indirect election by the members of the municipal council, who are elected every four years in proportional elections with closed lists. Seats in the municipal council are assigned to lists based on the D'Hondt rule, and within lists based on candidates' rank on the ballot. The size of the council depends on population, and each list proposes as many candidates as the size of the municipal council.

The councillors elect the mayor during their first meeting. Only elected list-leaders can be considered for the mayoral position. If one of the leaders obtains the absolute majority of the valid votes in the municipal council she is proclaimed mayor. A leader can secure the absolute majority of votes in the municipal council in three ways: (a) her list wins the election with an absolute majority; this happens in slightly more than 60% of the elections that we study; (b) a number of elected lists form a coalition to elect the mayor and govern the municipality; coalitions are usually based on the allocation of governing positions (mayor, vice-mayor, member of the government committees), and on agreements over policies; and (c) minority councilors can abstain from the vote on the mayor

thus favoring the election of the most-voted leader, without explicitly being part of the governing coalition. If none of the contestants receives the absolute majority of votes in the council, the leader of the list that obtained the highest share of votes in the general election is proclaimed mayor.

The mayor can be replaced during the legislature, either through a censure motion, which needs approval by the majority of the council, or if she loses a confidence vote. In both cases, the council elects a new mayor, which means that there are no “off-schedule” general elections: citizens only vote every four years.

2.2 The role of the mayor

Mayors are in charge of the most important decisions deliberated at the municipal level: they hold executive power and act as agenda setter (e.g., they typically prepare the budget),⁸ chair council meetings and appoint cabinet members and staff. Overall, Spanish municipal governments are an example of strong executive power (Sweeting, 2009).

Mayors are more likely to be professional politicians in large rather than small municipalities (see Figure B1). For instance, in municipalities with more than 5,000 inhabitants, at least 60% of mayors have a full-time appointment.⁹ The salary of full-time mayors is on average nearly two times larger than the average taxable income in their municipality, a ratio that is much smaller (around 0.60) among mayors with part-time appointment.

3 Data and Empirical Strategy

3.1 Data

Our empirical analysis studies local elections in 1999, 2003, 2007, 2011 and 2015 in Spanish municipalities with more than 250 inhabitants.¹⁰ We use data on the composition of candidates lists and electoral results. We observe the lists names, votes and seats in the municipal council, as well as candidates names, ranking on the ballot and whether they were elected, and who is the mayor elected at the first meeting of the municipal council. We complement this data with more informa-

⁸Spanish municipalities manage about 15% of Spanish public expenditures, which amounts to 6% of the country GDP (Bagues and Campa, 2017)

⁹Source: Our own calculation based on data provided by the Ministry of Finance for year 2016.

¹⁰We exclude municipalities with less than 250 inhabitants because they have a different electoral system.

tion on a sample of the municipal councilors elected between 2003 and 2015, namely their education and age, the length of the mayor's appointment, and the party affiliation of the vice-mayors.

Using this data, we identify mixed-gender races with no absolute majority. Below we first explain why and how we focus on these races for the empirical analysis, and then we characterize them.

3.2 The thought experiment

We study the competition for the mayoral appointment in the municipal council. Our goal is to compare female and male leaders who hold largely comparable bargaining positions, to assess to what extent they have different probabilities of forming a government coalition.

Since we analyse the formation of government coalitions, we exclude competitions where one list has won the absolute majority of seats in the municipal council through the general election.

Additionally, to identify the effect of the gender of the leader, we focus only on mixed races. We define an election as a mixed race if either the most voted or the second most voted list is led by a woman, and the other by a man. The two lists that are most voted in the general election on average gain 86% of the valid votes, which makes their respective leaders the likely contenders for the mayoral position. As shown in Figure 2, one of these two leaders is the appointed mayor in approximately 95% of the cases.

Based on the definition above, there were around 7,000 mixed races over the period studied, out of which around 2,000 are races with no absolute majority.

We compare female and male leaders who compete with a rival of the opposite gender to form a coalition government. We contrast their probabilities of becoming mayor, keeping theoretically fixed the candidates' support from their party (the analysis is focused on party leaders) as well as their willingness to lead (we compare leaders who have entered a competition to become mayors.) We also use a close election framework, which we will describe in Section 3.4, to hold the characteristics of the races won by female and male leaders, as well as their respective support from voters, also fixed.

Before explaining the details of the research design, we describe the mixed races that are the focus of our study.

3.3 Sample description

Our sample consists of around 2,000 mixed races between 1999 and 2015.

In Table 1 we show summary statistics for these races. Mixed races become relatively less scarce over time. Women tend to receive fewer votes and are less likely to be the most voted leader (except in 1999). They are also less likely to become mayors (except in 2003). On average four lists gain some representation in the municipal council. In nearly all the races considered, the first list can obtain the absolute majority of seats by forming a coalition with a minor list. Two-lists majorities are relatively less viable for the second most-voted list.

3.4 Empirical model

The research design in this paper is based on a close election framework, which aims at addressing two potential concerns: first, races where a woman is the most voted leader are possibly different than those where she does not; second, the winning margin is likely a determinant of our outcome of interest, namely whether the most voted leader forms a government coalition. The close election framework restricts the comparison to races that are arguably similar, where the gender of the most voted leader is determined by only a handful of votes; it also allows to account for differences in winning margins under relatively mild functional form assumptions.

The equation that forms the basis of our empirical analysis is the following:

$$Mayor_most_voted_{et} = \alpha + \beta_1 Woman_most_voted_{et} + \beta_2 f(\Delta Votes_{et}) + \gamma_t + \varepsilon_{et}, \quad (1)$$

where the unit of observations is a gender-mixed mayoral race e , $Mayor_most_voted$ takes value of one if the most voted (in the general election) leader becomes mayor, and $Woman_most_voted$ takes value one if the most voted leader is a woman. f is a polynomial in the winning margin of the female over the male leader, based on list-level vote shares in the general election. As it is conventional, we allow the polynomial to have a different slope on the two sides of the zero cutoff.

We show results for linear and quadratic polynomials in winning margins, and in the linear specifications we weight observations by proximity to the cutoff using a triangular Kernel.

In what follows we first present the estimation results; we then discuss the evidence and the identifying assumption underlined in our empirical strategy.

4 Results

4.1 Gender and probability that the most-voted leader is appointed the mayor

Table 2 and Figure 4 show that women who are the most voted leader are significantly less likely to become mayors than men in comparable races, accounting for differences in winning margin. In other words, winning lists led by a woman are less likely to form a government coalition, or to receive support from the other lists in the council to appoint the mayor. Importantly, we control for the probability that the most-voted and the second most-voted list are in coalition with the third list, based on non-mixed races. While the coefficients on these controls have the expected sign, they do not change the size of the estimated gender difference.

The estimates vary somewhat depending on the bandwidth and specification chosen. Taking the average of the estimated coefficients, it appears that being a woman decreases a leader’s probability of becoming mayor by 14 p.p, against a baseline probability that the most voted leader is appointed mayor equal to 64 p.p. Differences in vote shares (and in other associated characteristics, such as voters’ preferences) are unlikely to drive the observed gender difference, since the estimates are based on a regression discontinuity design.

However, the estimates in Table 2 fail to account for a crucial determinant of bargaining power: seat advantage. Accounting for winning margins, expressed in votes, might not fully capture variations in seat advantage since this depends on the vote shares of all the elected lists, not only the first two. In Table 3 we show estimates from the same equations in Table 2, once we split the sample to hold seat advantage fixed.¹¹

Two pieces of evidence emerge from Table 3. First, from the analysis of tied-seats races we conclude that even when female and male leaders hold exactly the same bargaining power, being a woman is associated with a significantly lower probability of becoming mayor. The magnitude of the difference is striking: when the most-voted leader is a woman she has a roughly 22 p.p. lower probability of being appointed mayor, which is approximately a 37% decrease from the probability that a male most-voted leader is appointed mayor.

¹¹We study races where there is either no seat advantage or a one-seat advantage. In the sample of close-elections the number of races with a seat advantage of two or more becomes increasingly low, thus making the estimates imprecise and therefore less conclusive. However, when we study races with a two-seat advantage we reach conclusions that are largely the same as in the one-seat advantage case, but the estimates are, as expected, more imprecise (results not shown and available upon request).

Second, we fail to find gender gaps in the probability that the most voted leader is appointed mayor in one-seat-advantage competitions. Differences in the nature of the bargaining game between tied-seats and one-seat-advantage competitions likely explain this result. In particular, as we show in Table 4, and in more detail in Section A in the Appendix, the list with a seat advantage has more leverage with respect to the rival at least along two dimensions: first, it is more likely to need only one coalition partner to form a majority; second, in a non-negligible fraction of the competitions where a two-lists majority is possible, the most voted list can form a majority with the third as well as the fourth list, whereas the second most voted list can only form a majority by partnering with the third list. Social norms of the type described in Fujiwara and Sanz (2018) might also matter. As a result, the most-voted advantage is substantially larger in one-seat-advantage than in tied-seats elections, as shown in Figure B2 in the Appendix.

In sum, the results above suggest that gender is an important determinant of the outcome of the bargaining process in “marginal” situations, i.e. when no part has a clear bargaining advantage and mostly social norms determine bargaining outcomes. Otherwise, the distribution of bargaining power based on seat shares prevails in determining the outcome of the bargaining (the formation of government in this case).¹²

We now turn to discussing the interpretation of the estimated gender gap in tied-seats competitions.

4.2 Discussion

Below we discuss the main result above, that female leaders with the same electoral support and bargaining advantage as men are less likely to secure a government coalition that appoints them as mayor. Specifically, we first evaluate the identifying assumption underlined in the research design, and then we assess whether observable characteristics associated with the gender of the leader can explain the estimated gender difference in likelihood to form coalitions.

¹²Note that naturally when we study one-seat advantage competitions we rely on relatively less close elections, as it is less likely that small winning margins produce a seat advantage. See Figure B3 for the distribution of elections by winning margin in tied-seats and one-seat advantage competitions. An additional caveat in the analysis of one-seat-advantage elections is that the relevant measure of bargaining power might be the difference in seat shares, as opposed to the number of seats. In other words, the concern is that a one-seat advantage in small councils likely carries a different amount of bargaining power than in larger councils. In future work we plan to explore other measures of bargaining power, based on advantage in seat shares.

4.2.1 Identifying assumptions

The above regression discontinuity design provides a consistent estimate of the impact of the gender of the leader (or of the characteristics associated with gender) under the assumption that there are not pre-determined variables that change discontinuously at the zero cutoff of the female over male winning margin. In other words, the validity of this strategy is threatened if elections where women win over a man by a small winning margin are systematically different than those where the opposite happens.

One potential violation of the identifying assumption is that the running variable, i.e. the winning margin, could be manipulated in the vicinity of the cutoff.¹³ One implication of the occurrence of manipulation would be that the empirical density of the running variable would be discontinuous at the cutoff.

Based on the density test proposed by Cattaneo et al. (2016) there is no evidence of sorting around the cutoff (see Figure B4), although in the proximity of the cutoff there is some small sample noise.

Another implication of the absence of manipulation is that pre-determined characteristics should not jump discontinuously at the cutoff. In Table B1 we examine whether there is a discontinuous jump in a number of characteristics either of the municipality where the mayoral competition takes place, or of the general election preceding the mayoral competition, or of the previous legislature in the same municipality. In general covariates are well-balanced on the two sides of the cutoff in tied-seats competitions, with the exception of the share of female councilors in the previous legislature, which is significantly lower in municipalities where a female leader closely wins a competition. However, Figure B5 suggests that the jump is driven by a few observations close to the cutoff, whereas the share of female councilors tends to be very similar across elections with relatively larger winning margins. A “donut-RD” analysis corroborates this evidence: when we exclude elections within a window of 2 p.p. around the cutoff, the point estimate is equal to -2 p.p. and is not statistically significant (s.e. = 4 p.p.).¹⁴ Instead, the main results in Table 3 are qualitatively

¹³A number of papers have pointed out that electoral outcomes tend to exhibit significant imbalance near the cutoff that distinguishes winners from losers in close elections, and have suggested that strategic manipulation of winning margins explains these imbalances (see, e.g., Caughey and Sekhon (2012)). However, Snyder et al. (2012) also show that the existence of imbalances does not necessarily implies manipulation of the winning margin; in the context that they study, partisanship is sufficient to produce the estimated imbalances.

¹⁴Estimate not shown and available upon request.

unchanged when we perform the same “donut-RD analysis” (see Table B2), although both the coefficients and the standard errors are substantially larger in some specifications, reflecting the fact that the sample size is nearly halved in the “donut” specifications.

Overall we conclude that the evidence is not consistent with the existence of manipulation at the cutoff of close elections. Nevertheless, since the gender composition of the municipal council could be associated with some determinants of the outcome variable, we estimate a variation of equation (1) that controls for the share of female councilors, and find that the estimates in Table 2 are substantially unchanged (see Table 5).

4.2.2 Characteristics of female and male most-voted leaders

In what follows we first study whether women who are the most-voted leader in a general election are on average different than men in the same position, by estimating a number of regressions that replace most-voted leaders’ characteristics as dependent variable in equation (1). Then, we assess whether the documented differences can explain women’s lower probability of becoming mayors. The overall goal of this exercise is to investigate potential reasons why we observe gender differences in the probability that most-voted leader becomes mayor.

Based on the results shown in Table B3, female and male most-voted leaders in tied-seats mixed races tend to be generally similar, with some important exceptions. We do not observe gender differences in the probability to be incumbent candidates, councilors or leaders.¹⁵ Seats shares and votes also do not systematically differ by gender. Women are possibly less likely to run for PP and more likely to run for PSOE.¹⁶ Importantly, women appear less likely than men to be incumbent mayors, whereas we do not find significant differences in the probability of running for the list that appointed the mayor in the previous election.

We also draw on information on the education and age of municipal councilors. Ideally, we would like to examine the gender differences in education and age of most-voted leaders in tied seats mixed-races. Since the data do not allow us to identify party leaders, we compare the education

¹⁵We define a leader as an incumbent candidate if she appears to have been only a candidate in the previous election, i.e. she was not elected and was not running in a leadership positions. Equivalent definitions apply to incumbent councilor, leader, and mayor.

¹⁶PSOE and PP are the two largest parties in Spain. In our sample, their average vote shares are, respectively, 35 and 33%.

and age of female and male mayors appointed in those races. We estimate the following equation:

$$Mayor_education_{et} = \alpha + \beta_1 Mayor_is_Woman_{et} + \beta_2 f(\Delta Votes_{et}) + \gamma_t + \varepsilon_{et}, \quad (2)$$

where *Mayor_education* and *Mayor_is_Woman* are based on, respectively, the mayor’s years of education and gender. f is a linear polynomial in the votes difference between the female and the male leader, based on list-level vote shares in the general election; the polynomial is allowed to have a different slope when a woman is the most voted leader.¹⁷ The goal is to compare female and male mayors that were appointed after comparable general elections. As shown in Table B4, columns (1) and (2), there are significant gender differences in the age and education of these mayors. Female mayors are on average more educated (+ 1 year) and younger (- 4 years) than male mayors.

Overall, data limitations prevent us from drawing definite conclusions on the extent to which there are gender differences in the education and age of most-voted leaders, but based on the existing information on mayors and councilors it does not appear unlikely that female most-voted leaders are more educated and younger than their male counterparts.

Additionally, we study whether most-voted female and male leaders lead lists that are different along observable characteristics. There are two reasons why the characteristics of the councilors elected with the winning list are interesting variables to study. First, we can consider these variables as proxies for the leaders’ characteristics, since the average education and age of a list’s elected councilors includes information on the education and age of the list’s leader.¹⁸ Second, forming a coalition requires councilors from different lists to work together, implying that councilors’ characteristics could also be important determinant of the formation of government coalitions. For instance, coalition formation might be affected by “homophily”, i.e. the tendency to bond with individuals with similar characteristics (see McPherson et al., 2001, and Cintolesi, 2018).¹⁹ Therefore, we also test whether lists led by women have a different degree of similarity, based on education and age, with the third most-voted list, which is the most likely government coalition junior partner in

¹⁷Note that equation (2) does not deliver RDD estimates, because the “running variable”, i.e. the female minus male votes difference, determines the gender of the most-voted leader, whereas the gender of the mayor, which is our explanatory variable of interest, is only indirectly affected.

¹⁸Notice, however, that the proxy is not valid if list-leaders’ education and age are negatively correlated with those of rank-and-file candidates.

¹⁹Cintolesi (2018) shows that, in Italy, elected councilors who have previously worked with the leader of the opposition party are more likely to be promoted to government positions. This effect is particularly strong in the presence of homophily, defined based on age, sex, education and job, between the connected politicians.

the context studied.

In practice, we re-estimate a few versions of equation (1), where we replace as dependent variables (a) the average education and age of the councilors elected with the most-voted list, and (b) measures of similarity between the first and the third list. Following Cintolesi (2018), we define “homophily” as $X_{homophily} = -|X_{most_voted_list} - X_{third_most_voted_list}|$, where X stands for the average councilors’ education and age.

The evidence, shown in Table B4, columns (3) to (7), suggests that female most-voted leaders lead lists that are younger (by an average of three years), and as such also possibly more similar to the third list.²⁰

How much do the differences in leaders’ and lists’ observable characteristics help explaining women’s lower chances to become mayor?

In Table 5 we show that none of the differences that we have identified help accounting for women’s lower probability of being appointed mayor, although we cannot unfortunately fully assess the importance of the leader’s education and age. We note, however, that list’s average education and age do not appear to help explaining the observed gender gap in probability of forming a government coalition.

4.3 Heterogeneity analysis: gender interactions in groups

We now study whether the gender difference in the probability of being appointed mayor depends on the gender composition of the municipal council. Previous work suggests that group support for female leaders is lower the larger the share of men in the group. Gagliarducci and Paserman (2011) find that in Italy female mayors are less likely to survive until the end of the term when the council is entirely male. In an experimental setting, Born et al. (2018) show that women receive less support from team members in a leadership contest when the team is less feminized. They also find that women in male dominated groups are “less confident in their relative performance, less influential, and more swayed by others in team discussions”.

Our findings are consistent with the existing evidence. Table 6 shows estimates from a set of regressions where we augment equation (1) with interaction terms, to test for heterogeneous

²⁰Smaller lists are less likely to report information on the characteristics of their elected council members; for this reason, the sample size decreases substantially when we use information on similarity between the first and third list.

effects of gender by the share of women among municipal councilors. The gender difference in the probability that the most voted leader becomes mayor is lower the larger the share of women in the municipal council (column 1). In columns 2 to 5 we focus on specific groups of female councilors, based on the list that they were elected from, but the estimates are inconclusive, likely due to the lack of power. Focusing on the coefficient from column (1), let us consider an election where a woman leads the most voted list and the rest of the council is entirely male; her probability of becoming mayor is 37 p.p. lower than that of a man in the same position.²¹ The gender difference decreases by 11 p.p. if the share of female councilors is one standard deviation larger. Estimates that allow for threshold-effects in the share of female councilors confirm the evidence from Table 6 (see Table B5).

The interaction of the gender composition of the municipal council with the gender of the most-voted leader can be explained by at least two hypothesis. First, the share of female councilors is possibly a proxy for the degree of gender bias in the municipality, which in turn would be reflected in councilors' attitudes toward female leadership. Second, if women tend to be less hostile than men to female leadership, or are more likely to network with other women, then a larger female presence in the council would improve the chances that a female leader builds a coalition. To gauge the relative importance of each of these explanations, in the regressions in Table 6 we always include controls for the size of the municipality and an interaction of size with *woman most voted*. This is to account for ex-ante differences in gender gaps between municipalities that elect different shares of women, due to, e.g., gender-role attitudes, which are supposedly less traditional in larger municipalities.²²

Exploiting a gender quota Additionally, we try to exploit the imposition of a gender quota in Spanish municipal elections in large municipalities since 2007.²³ RDD estimates from Bagues and Campa (2018) suggest that the quota caused an 8 p.p. increase in the share of female candidates, and a 4 p.p. increase in the share of female councilors.

²¹Notice that the share of women elected in the first or second list does not include the leader.

²²Incidentally, the evidence suggests that in larger municipalities the gender gap is bigger, perhaps reflecting the higher importance of the mayoral position in these municipalities.

²³Based on the *Ley de Igualdad de Genero*, a candidate gender quota was first implemented in the 2007 elections in municipalities with population larger than 5,000, and it was extended in 2011 to municipalities with population larger than 3,000. The quota requires the presence of at least 40% of candidates of each gender on the electoral ballot. See Bagues and Campa (2018) for more details about the Ley de Igualdad.

In order to leverage the exogenous variation in the share of female councilors created by the quota, we can estimate the following specification:

$$\begin{aligned}
\text{Mayor_most_voted}_{et} = & \alpha + \beta_1 \text{Woman_most_voted}_{et} + \beta_2 f(\Delta \text{Votes}_{et}) \\
& + \beta_3 \text{Woman_most_voted}_{et} X \text{Quota}_{et} + \beta_4 \text{Woman_most_voted}_{et} X \text{Population}_{et} \\
& + \beta_5 \text{Woman_most_voted}_{et} X \text{Population}_{et} X \text{Quota}_{et} + \beta_6 \text{Population}_{et} \\
& + \beta_7 \text{Quota}_{et} + \beta_8 \text{Population}_{et} X \text{Quota}_{et} + \gamma_t + \varepsilon_{et}
\end{aligned} \tag{3}$$

where *Quota* is an indicator that takes value of 1 if the municipality is treated with the gender quota.²⁴ We control for a linear polynomial in population to account for other differences between large and small municipalities that are unrelated to the quota; we allow the polynomial to have different slopes based on whether a woman is most voted and whether the quota is implemented. In column (2) of Table 7 we show results from estimating equation 3 on the entire sample of mixed-race close elections. In column (1) we estimate a more parsimonious specification.²⁵ In column (3) we control for population non-parametrically, restricting the sample to relatively small municipalities. Regardless of the specification chosen, we find that the gender difference in the probability that a woman forms a coalition is smaller in quota municipalities, but the estimates are only marginally or possibly statistically significant. An important caveat is that we lack the power to estimate the maximum effect of the quota, as implied by its impact on the share of female councilors and by the heterogeneous effects shown in Table 6. More precisely, the implied maximum coefficient for the interaction term of interest (*Woman_most_voted_{et} X Quota_{et}*) would be between 0.03 and 0.06 (4 - 8 p.p. X 0.65).²⁶ The results of a simple power calculation imply that (a) we have less than 50% power to deliver a 5% significant estimate of this coefficient size, and (b) the minimum size effect that we can estimate with 5% significance and 80% power is roughly 0.25, in the most

²⁴Following the *Ley de Igualdad*, we assign municipalities to the quota treatment if their population is larger than 5,000 inhabitants in 2007, or larger than 3,000 in 2011 or 2015. The share of elections with quotas in our sample is equal to zero in 1999 and 2003, 25% in 2007, and slightly above 40% in 2011 and 2015.

²⁵We only control for *population* and *population X woman most voted*.

²⁶This would be the implied size of β_3 in equation 3 if the entire effect of the interaction term *Woman_most_voted_{et} X Fem_counc_{et}* could be attributed to the actual presence of women respectively in the council or in the list, rather than to other correlated variables.

conservative scenario (i.e. considering the specifications in columns (1) or (2) of Table 7).²⁷

A proxy for local gender-role attitudes We also attempt to proxy for local gender role attitudes by considering, for each municipality, the share of female councilors in similarly-sized municipalities in the same province.²⁸ The underlying hypothesis is that attitudes regarding the role of women in society are largely similar within the same province, conditional on population size. The proxy should therefore capture, at least in part, the variation in feminization of the municipal council generated by attitudes. The remaining variation would come from electoral outcomes, and contingencies specific to the politics of a particular municipality.²⁹

The proxy has a correlation of 0.45 with the municipality-level share of female councilors. Nevertheless, as shown in Table B6, there is no interaction between the proxy and our explanatory variable of interest, regardless of whether we consider a continuous measure of the proxy (column 1) or we test for the effect of “threshold values” (columns 2 to 4).

While each of these tests has some limitations, overall the evidence is more consistent with the share of female councilors being important because it affects gender interactions in the group. The hypothesis that the share of female councilors is important because it is a proxy for local gender-role attitudes finds less support in the data.

4.4 Other bargaining outcomes

Next we turn to the question of whether most-voted women who are not appointed mayors are excluded from the process of government formation entirely, or bargain instead different deals than men, while still being part of the governing majority.

The estimates in Table 8 lend more support to the first hypothesis. Column (1) shows that when the most-voted leader is a woman it is more likely that the second most-voted leader (who is by construction a man) is appointed mayor (the estimated effect is roughly 40% of the baseline probability that the second-most voted leader is appointed mayor). There is instead less clear evidence that “minority” leaders have more chances to become mayor if the most-voted leader is a woman (see column 2).

²⁷The power calculation is based on a standard error of 0.09 for the estimator of β_3 in equation 3 (see Table 7).

²⁸We impose the restriction that each group contains at least 5 municipalities.

²⁹Since the quota also varies by municipality size, we control for the interaction of *woman most voted* with the quota dummy, but the conclusions of this analysis are qualitatively unchanged if we omit this control.

We also study early terminations as an outcome of the bargaining process. Coalition partners can stipulate an agreement to alternate in the mayoral position during the legislature. Typically each of the partners will be in power for two years. In our sample we observe a change of mayor during the legislature in 12% of the cases.³⁰ As shown in column (3), we do not find compelling evidence that most-voted female leaders are more likely to split the mayorship with coalition partners.

Finally, we check how often the most-voted list that does not appointed mayor obtains the vice-mayoral position: this is very unlikely occurrence, observed only in 1.5% of the cases.

5 Conclusion

We have shown that in Spanish local politics female leaders that gain the plurality of votes in the general election are significantly less likely to lead a government coalition than male leaders with the same electoral support and bargaining power, and who are elected in comparable races. The gender difference is specific to elections where no party wins a seat advantage, is not accounted for by differences in party affiliation or political experience, and is larger the higher the share of men involved in the bargaining. In the sample of elections where the gender difference appears, being a woman lowers a leader's probability of forming a government coalition by 34%, everything else equal.

Our findings highlight that women face more barriers than men when climbing the career ladder, and might be relevant in contexts where a group elects its head (e.g. government assemblies or corporate boards). More generally, since group support and alliances are arguably crucial to lead a hierarchical organization, our findings indicate that lower success in securing group support and alliances is a potential contributor to women's scarcity in top positions. Assessing the importance of this channel to explain the "leaky pipeline" in political jobs is difficult; the challenge is how to assess the dynamic effect of the observed gender differences on women's willingness to run for leadership positions, as well as on parties' propensity to promote women.

More generally, the findings in this paper confirm existing evidence from the laboratory that female leadership is less likely to emerge in male-dominated environment. This points to gender

³⁰This percentage is larger than in the overall sample, where a mayor change occurs in only 5% of elections.

inequalities being self-reinforcing (Born et al.), and suggests a potential mechanism through which candidate gender quotas, or other policies that increase women's presence in parties, electoral lists and legislatures, can ultimately help more women reach top-political positions (see O'Brien and Rickne (2016) and De Paola et al. (2010)).

In future work we plan to extend the analysis to other countries where the rules for the election of mayors largely overlap with the Spanish case, namely Czech Republic, Finland, and Sweden. This line of research is being actively pursued.

6 Figures and Tables

Figure 1: Share women in Spanish municipal politics, by position

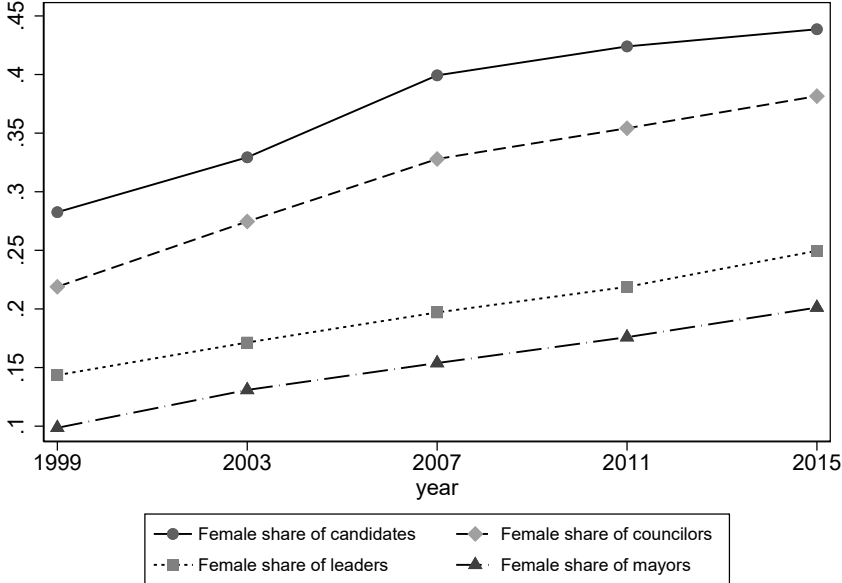


Figure 2: Probability that list appoints mayor, by ranking in general elections

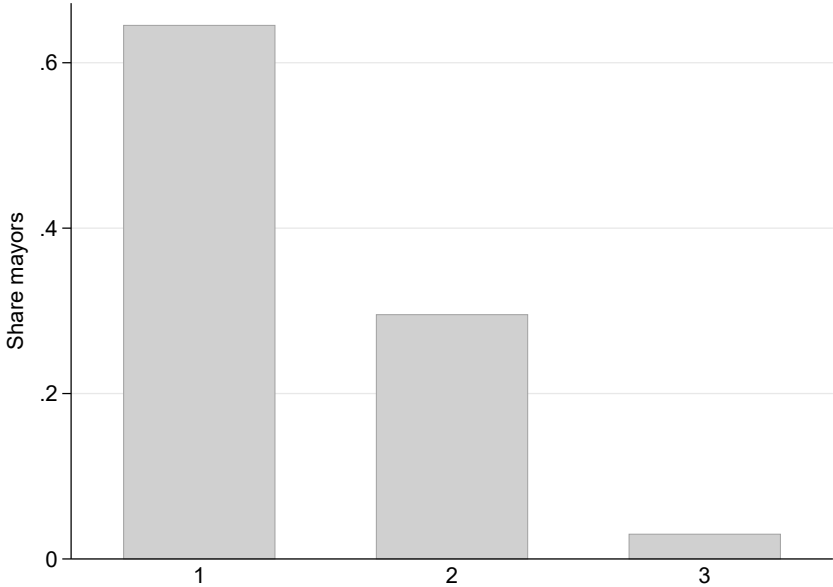


Figure 3: Seat share of second and third list, by seat advantage

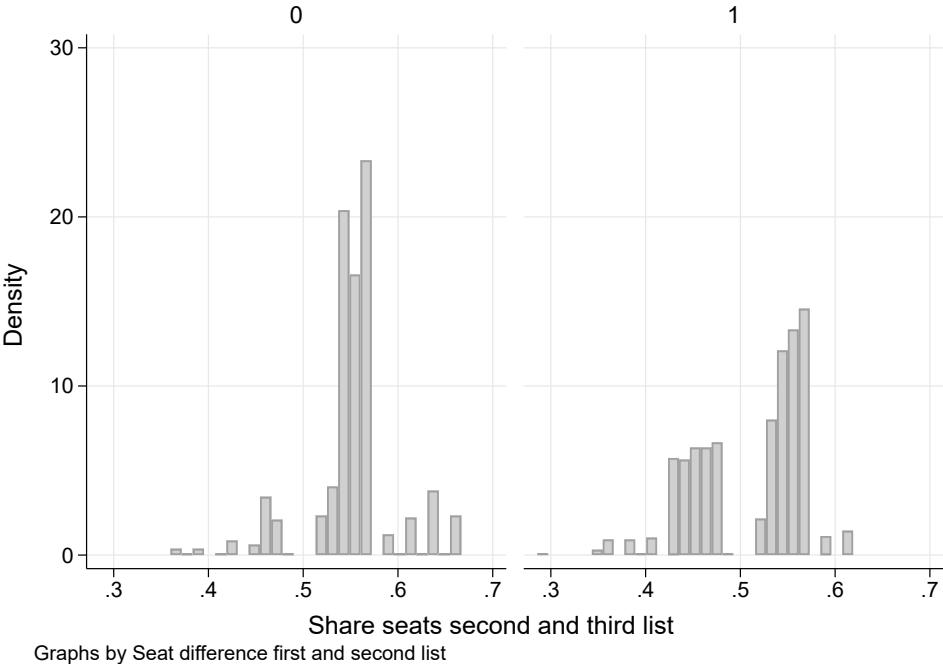


Figure 4: Gender and probability that most-voted becomes mayor

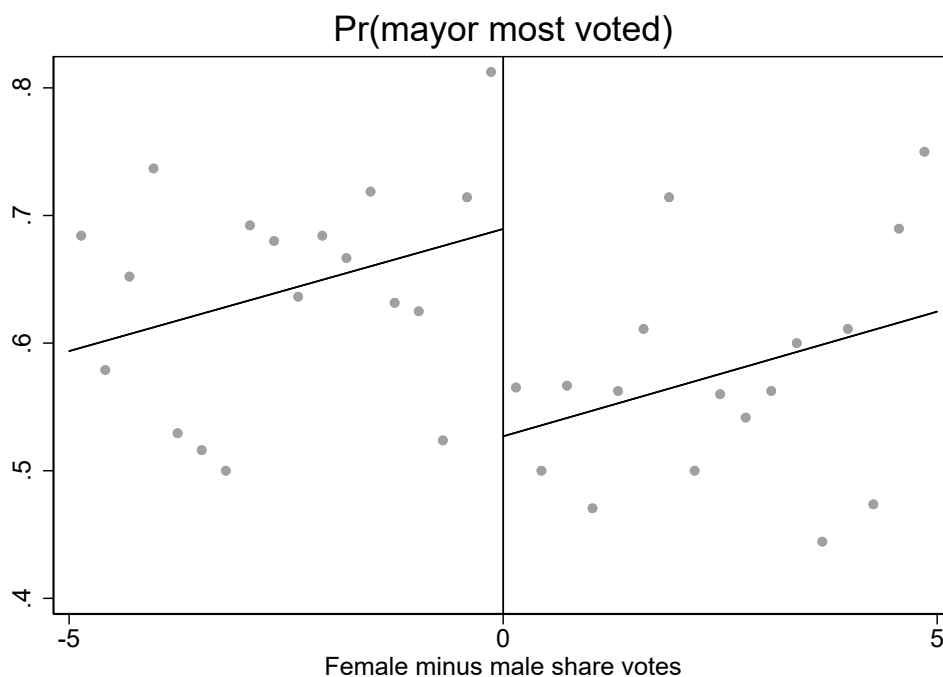


Table 1: Summary statistics

Year	Δ Votes W - M (%)	W Most voted	W Mayor	Numb. Lists elected	Majority 1 st & minor party	Majority 2 nd & minor party	Population	N
1999	-1	.5	.44	3.6	.97	.65	13351	179
2003	-.56	.47	.5	3.7	.95	.6	13324	333
2007	-.98	.43	.46	3.7	.96	.65	12659	420
2011	-1.1	.44	.43	3.8	.96	.6	12533	468
2015	-1.5	.46	.46	4.3	.87	.47	22564	619

Table 2: Gender and probability that most voted leader is appointed mayor

<i>Dep.var: Mayor most voted</i>	(1)	(2)	(3)	(4)	(5)	(6)
Woman most voted	-0.08** (0.04)	-0.11** (0.06)	-0.14** (0.06)	-0.15* (0.08)	-0.16** (0.08)	-0.17** (0.08)
Female minus Male Votes	-0.01** (0.00)	0.01 (0.01)	0.01 (0.01)	0.02 (0.02)	0.02 (0.03)	0.02 (0.03)
Female minus Male Votes*Woman most voted	0.02*** (0.00)	0.00 (0.01)	0.00 (0.02)	-0.01 (0.03)	0.01 (0.04)	0.02 (0.04)
Pr. coalition 1 & 2	0.60* (0.34)	0.90* (0.48)	0.90 (0.57)	1.02 (0.71)	0.92** (0.39)	1.03** (0.40)
Pr. coalition 1 & 3	0.98*** (0.25)	0.66* (0.35)	0.62* (0.37)	0.72* (0.44)	0.68** (0.31)	0.64* (0.33)
Pr. coalition 2 & 3	-0.81*** (0.26)	-0.53 (0.35)	-0.43 (0.36)	-0.27 (0.37)	-0.73** (0.34)	-0.84** (0.39)
N	2,019	1,344	1,146	742	1,345	1,345
h	full	10	8	5	10	10
Pol	linear	linear	linear	linear	quadratic	quadratic
Triang. weighting	no	yes	yes	yes	no	no
Year FE	yes	yes	yes	yes	yes	yes
Province FE	no	no	no	no	no	yes
Mean dep. var.	0.66	0.64	0.64	0.64	0.64	0.64

Note: Robust standard errors in parenthesis.

Table 3: Gender and probability that most voted leader is appointed mayor

(a) Tied-seats

<i>Dep.var: Mayor most voted</i>	(1)	(2)	(3)	(4)	(5)	(6)
Woman most voted	-0.21*** (0.07)	-0.21*** (0.08)	-0.22*** (0.08)	-0.20** (0.10)	-0.25** (0.10)	-0.23** (0.10)
N	647	632	596	441	632	632
h	full	10	8	5	10	10
Pol	linear	linear	linear	linear	quadratic	quadratic
Triang. weighting	no	yes	yes	yes	no	no
Year FE	yes	yes	yes	yes	yes	yes
Province FE	no	no	no	no	no	yes
Mean dep. var.	0.59	0.59	0.60	0.63	0.59	0.59

(b) One-seat advantage

<i>Dep.var: Mayor most voted</i>	(1)	(2)	(3)	(4)	(5)	(6)
Woman most voted	0.02 (0.06)	0.09 (0.09)	0.06 (0.10)	0.04 (0.14)	0.08 (0.13)	0.02 (0.14)
N	787	569	474	288	569	569
h	full	10	8	5	10	10
Pol	linear	linear	linear	linear	quadratic	quadratic
Triang. weighting	no	yes	yes	yes	no	no
Year FE	yes	yes	yes	yes	yes	yes
Province FE	no	no	no	no	no	yes
Mean dep. var.	0.62	0.65	0.65	0.65	0.65	0.65

Note: Controls included are the same as in Table 2, namely: probabilities of coalitions, year fixed-effects.

Table 4: Summary statistics, by seat advantage

Year	Δ Votes	W	W	Numb.	Majority		Population	N
	W - M (%)	Most voted	Mayor	Lists elected	1 st & minor party	2 nd & minor party		
<i>Tied seats</i>								
1999	-.12	.54	.48	3.3	.94	.94	3639	71
2003	-.26	.47	.45	3.4	.94	.94	8763	105
2007	-.73	.42	.44	3.4	.94	.94	7902	156
2011	-.8	.45	.43	3.4	.94	.94	6359	141
2015	.12	.53	.46	3.8	.83	.83	8627	174
<i>One-seat difference</i>								
1999	-1.1	.53	.46	3.7	.99	.6	6129	68
2003	-.5	.47	.54	3.6	.95	.6	10353	146
2007	-1.8	.43	.46	3.6	.97	.62	7020	157
2011	-1.5	.39	.4	3.6	.97	.65	9238	192
2015	-1.5	.44	.49	4	.87	.55	22895	224

Table 5: Gender and probability that most voted leader becomes mayor. RDD with controls

	(1)	(2)	(3)	(4)	(5)
Woman most voted	-0.16*	-0.18**	-0.17**	-0.17*	-0.14*
	(0.08)	(0.08)	(0.07)	(0.09)	(0.08)
Incumbent mayor		-0.07			
		(0.05)			
PP			-0.34***		
			(0.05)		
PSOE			-0.10**		
			(0.05)		
Age most voted list				0.00	
				(0.00)	
Female councilors $t-1$					0.41**
					(0.16)
N	564	545	632	432	563
Mean dep. var.	0.595	0.599	0.592	0.59	0.597

Note: estimates in columns (1), (2), (4) and (5) does not include races from 1999, due to missing data. Controls included are the same as in Table 2, namely: linear polynomial in winning margin (standard RD specifications), probabilities of coalitions, year fixed-effects. $h=10$, triangular Kernel weighting.

Table 6: Heterogeneity analysis by share of women among councilors. RD estimates

<i>Dep.var: Mayor most voted</i>	(1)	(2)	(3)	(4)	(5)
Woman most voted	-0.37*** (0.11)	-0.20* (0.10)	-0.18* (0.10)	-0.18** (0.09)	-0.16** (0.08)
Fem coun	-0.05 (0.18)				
Woman most votedXFem coun	0.66*** (0.25)				
Fem coun list 1		-0.05 (0.11)			
Woman most votedXFem coun list 1		0.14 (0.17)			
Fem coun list 2			0.01 (0.13)		
Woman most votedXFem coun list 2			0.09 (0.18)		
Fem coun list 3				0.03 (0.08)	
Woman most votedXFem coun list 3				0.12 (0.12)	
Female leader list 3					0.03 (0.07)
Woman most votedXFem leader list 3					0.07 (0.11)
Population	0.00** (0.00)	0.00** (0.00)	0.00** (0.00)	0.00* (0.00)	0.00* (0.00)
Winner is Woman X Pop.	-0.00*** (0.00)	-0.00*** (0.00)	-0.00*** (0.00)	-0.00*** (0.00)	-0.00*** (0.00)
N	616	624	624	616	626

Controls included are the same as in Table 2, namely: linear polynomial in winning margin (standard RD specifications), probabilities of coalitions, year fixed-effects. $h=10$, triangular Kernel weighting.

Table 7: Heterogeneity by application of a gender quota for municipal councilors. RD estimates

<i>Dep.var: Mayor most voted</i>	(1)	(2)	(3)
Sample:	Full	1000 < pop < 7000	
Woman most voted	-0.21** (0.09)	-0.20** (0.09)	-0.23** (0.12)
Woman most votedXQuota	0.15* (0.09)	0.15 (0.10)	0.15 (0.14)
Quota	0.02 (0.07)	0.04 (0.07)	0.10 (0.10)
N	632	632	314

Column 2 estimates the full specification in equation 3. Column (1) estimates a reduced specification (see main text). Column (3) controls for population only non-parametrically, i.e. restricting the sample to small municipalities. All the columns include additional controls as in Table 2, namely: linear polynomial in winning margin (standard RD specifications), probabilities of coalitions, year fixed-effects. $h=10$, triangular Kernel weighting.

Table 8: Gender and other bargaining outcomes. RD estimates

	(1)	(2)	(3)
	Mayor from second list	Mayor from minority list	Early termination
Woman most voted	0.17** (0.07)	0.03 (0.05)	0.06 (0.06)
N	632	632	547
Mean dep. var.	0.37	0.04	0.10
S.d. dep. var.	0.48	0.19	0.31

All the columns include controls as in Table 2, namely: linear polynomial in winning margin (standard RD specifications), probabilities of coalitions, year fixed-effects. $h=10$, triangular Kernel weighting.

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A Characterizing the bargaining environment in tied-seats and one-seat-advantage races

Below we document a number of features of tied-seats and one-seat-advantage competitions, which likely affect the bargaining game for the formation of the government.

First, we show in Table A1 that in the average competition, regardless of its type, both the first and the second list can form a one-seat majority only by partnering with the third list.

Figures 2 - 4 show a number of other differences between the first and the second list and across the two types of competitions. First, when there is a seat advantage the probability that a majority with the third list can be formed is higher for the first than the second list (see Figure 2). Moreover, two-lists majorities with the fourth list are rarely possible in tied-seats competitions (see Figure 3), and never viable for the second list when there is a seat advantage. However, in a number of one-seat-advantage competitions, the first list can form a majority by partnering only with the fourth list (see Figure 4). More in general, Figure 2 and Figure 4 show that the distribution of the combined seat shares with minor lists is different between the first and the second list.

Overall, the evidence above indicates that the most-voted list has substantially more bargaining power than the second list in one-seat-advantage competitions, likely explaining why in such competitions there are not gender differences in the probability that the winner becomes mayor.

Table A1: Seat shares, first or second list & minor lists

	& Third	& Fourth	& Fifth	& Sixth	& Seventh
	<i>Seat shares, Tied seats</i>				
First or Second List	.55	.43	.41	.4	.4
	<i>Seat shares, One-seat-advantage</i>				
First List	.61	.47	.43	.42	.42
Second List	.51	.37	.33	.32	.32

Figure 2: Seat shares, first or second list & third list, one-seat-advantage

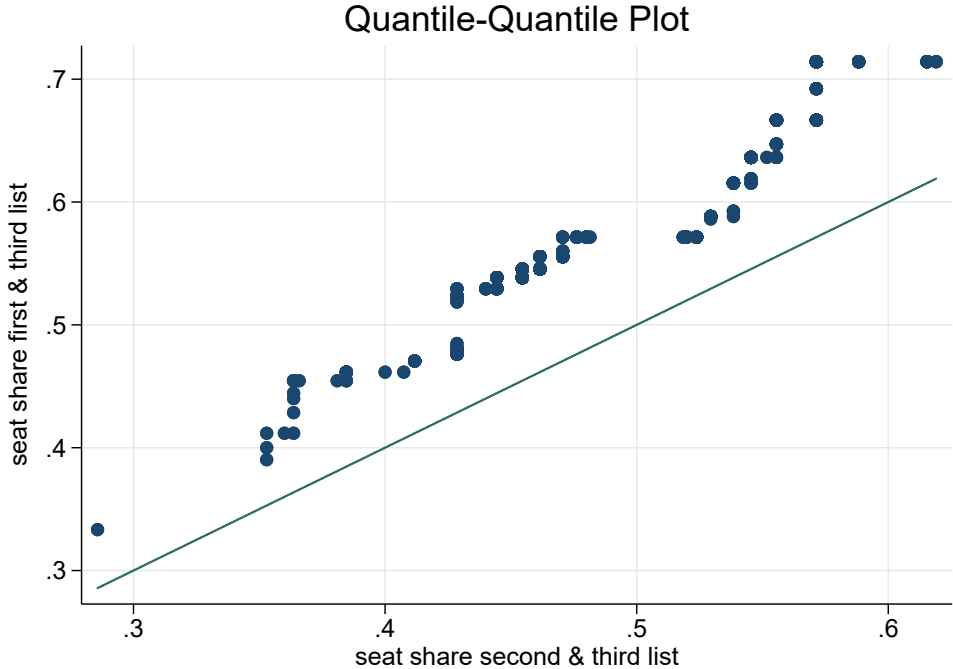


Figure 3: Seat shares, first or second list & fourth list, tied seats

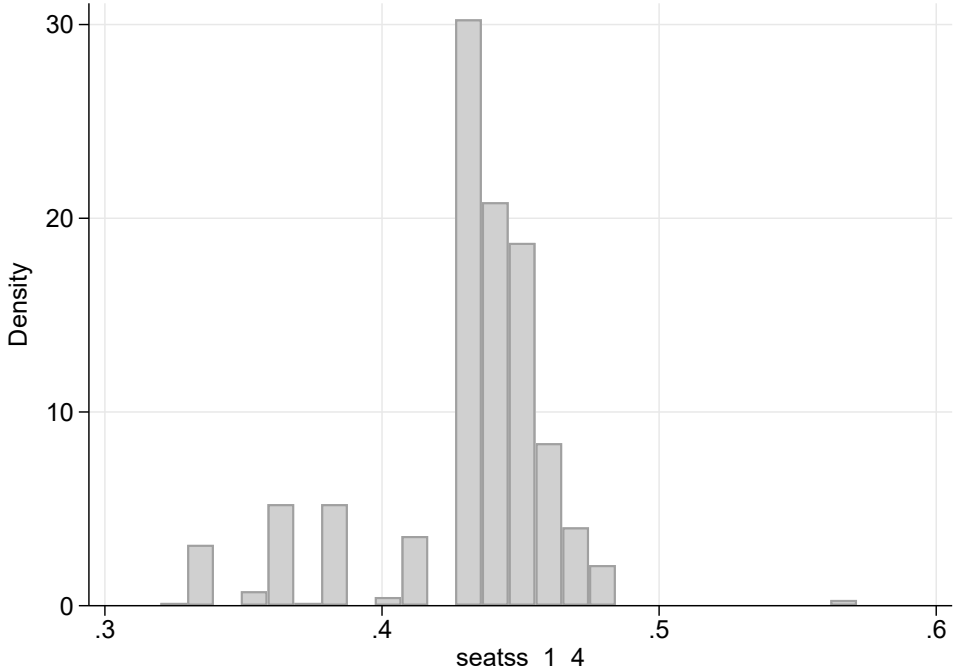


Figure 4: Seat shares, first or second list & fourth list, one-seat-advantage

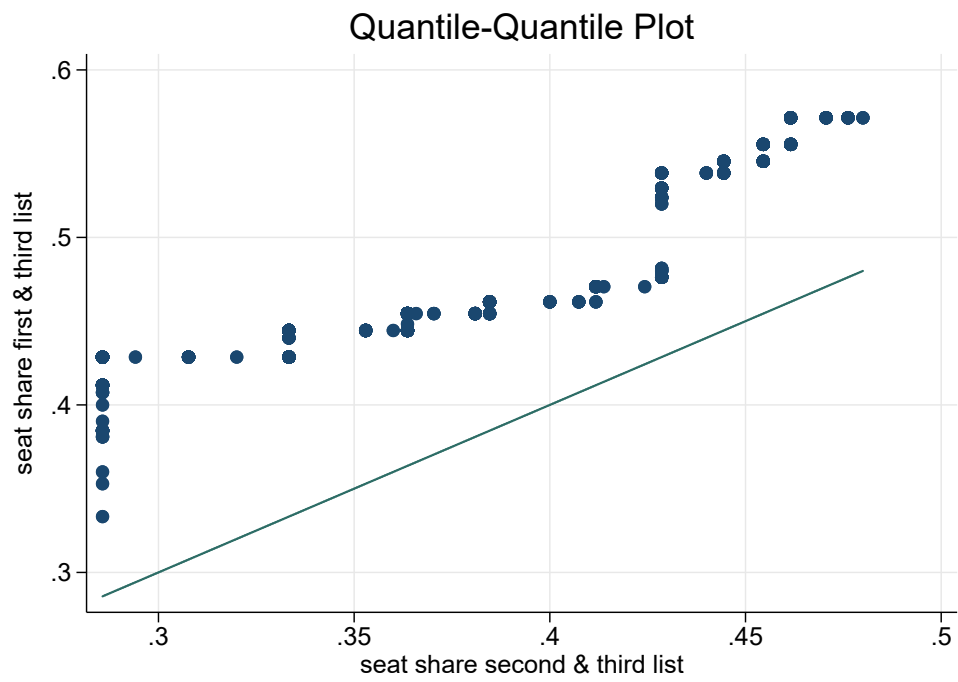
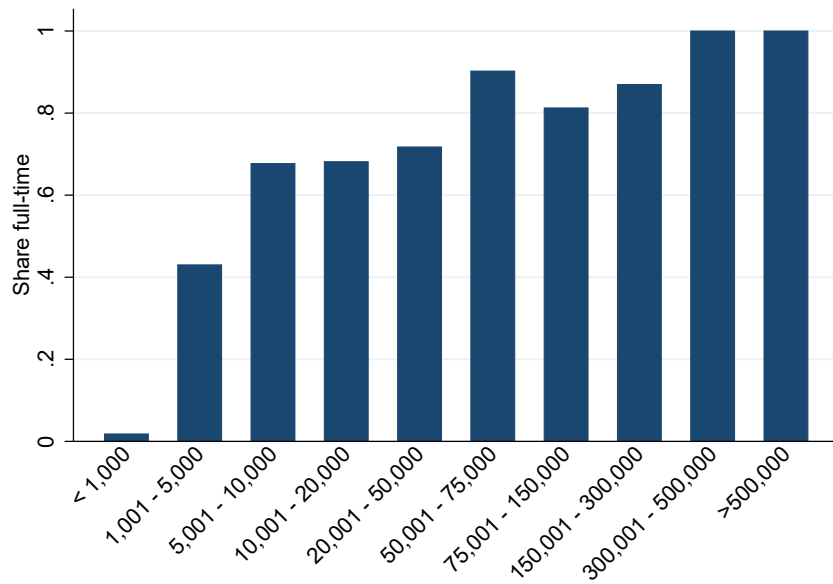


Figure B1: Share of full-time mayors by population, 2016



B Additional Tables and Figures

Figure B2: Probability that most-voted becomes mayor in mixed-gender races, by winning margin

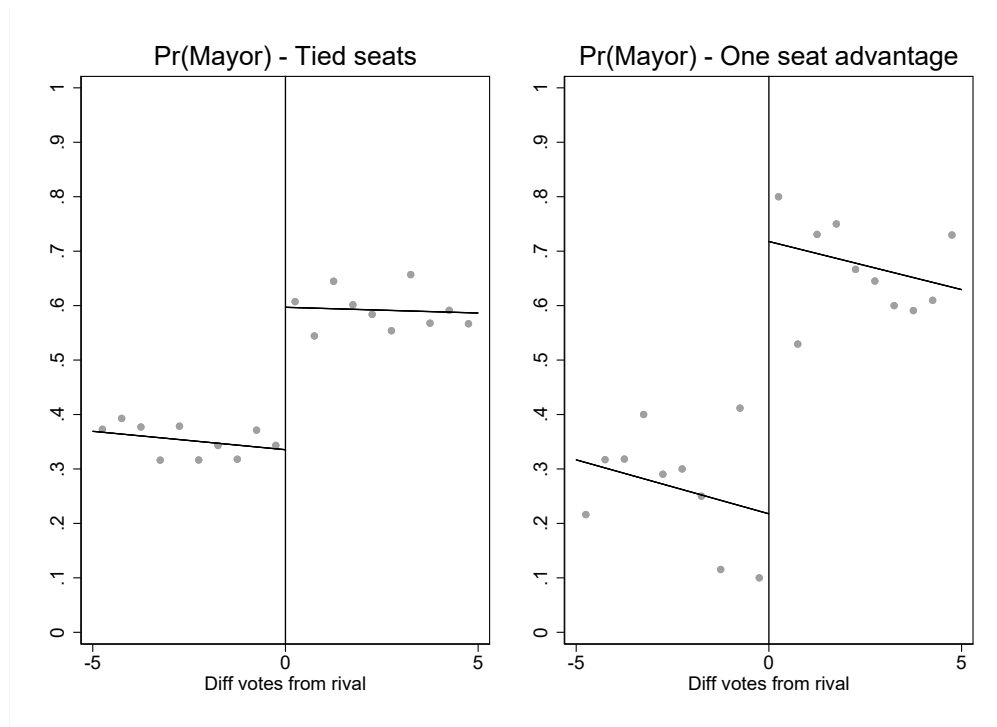


Figure B3: Distribution of winning margins

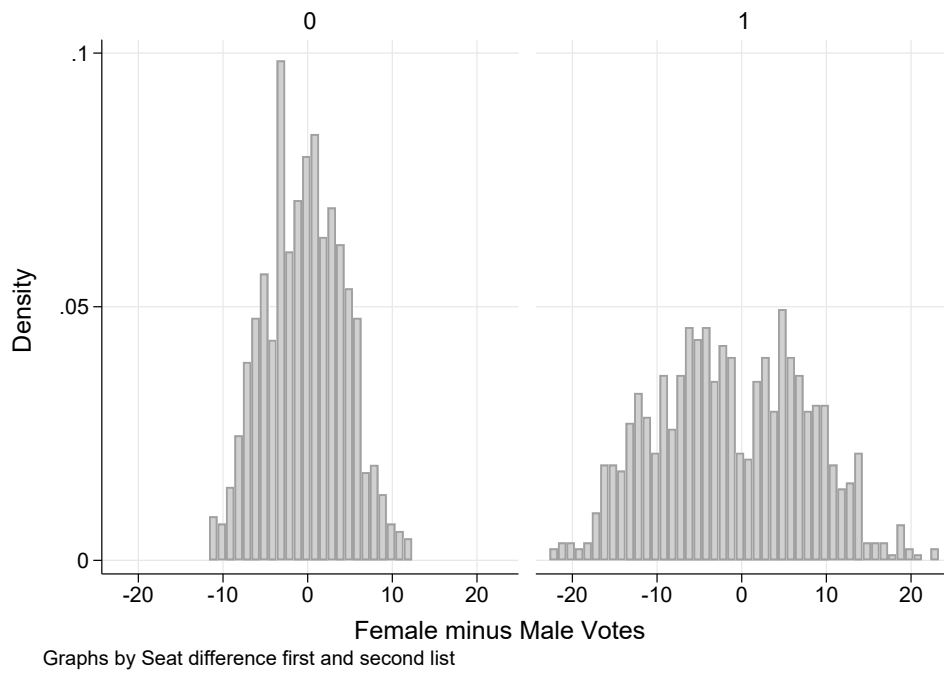
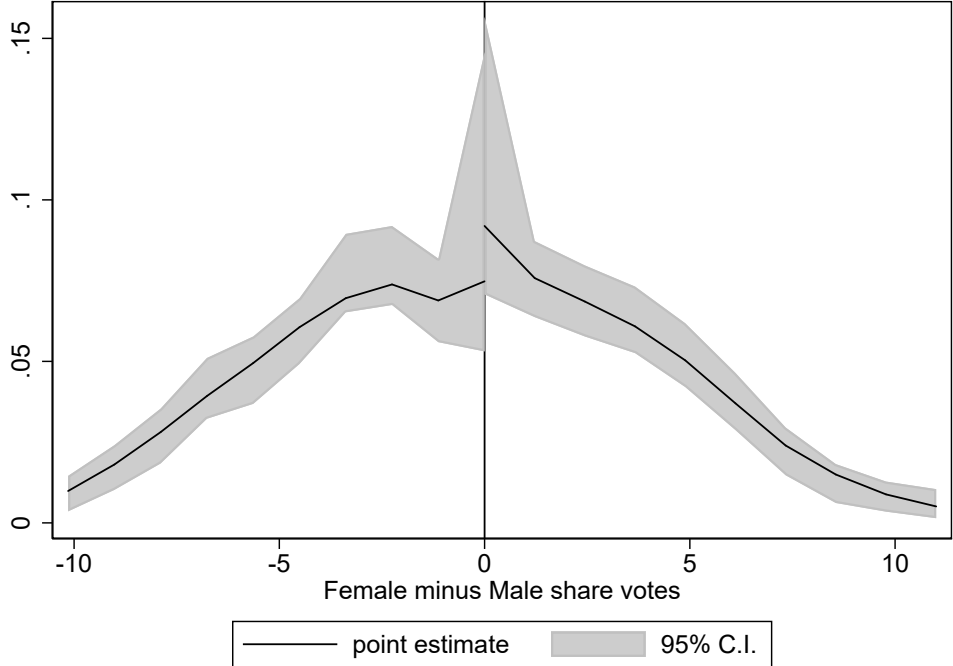
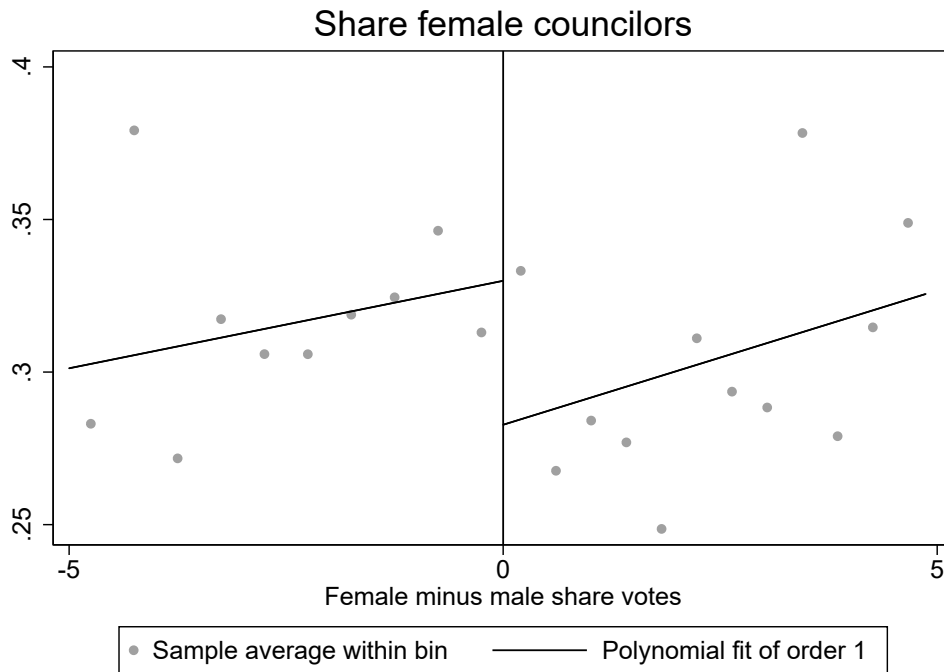


Figure B4: Density plot



Note: The running variable is the difference between the female and the male leader winning margin.

Figure B5: Balanced covariates



Note: The running variable is the difference between the female and the male leaders' winning margin.

**Table B1: Gender of most-voted leader and municipality characteristics, RDD,
h = 10**

	(1) log population	(2) turnout	(3) number lists	(4) female candidates t-4	(5) female councilors t-4
<i>Dep. var.:</i>					
Woman most voted	0.06 (0.21)	-0.01 (0.02)	0.14 (0.28)	-0.01 (0.02)	-0.05** (0.02)
	experience councilors t-4	experience fem councilors t-4	female un- employment	male unem- ployment	share of women
Woman most voted	0.03 (0.03)	0.01 (0.05)	0.00 (0.01)	0.00 (0.00)	0.00 (0.00)

**Table B2: Gender and probability that most voted leader is appointed mayor,
Tied seats, Donut RDD**

<i>Dep.var: Mayor most voted</i>	(1)	(2)	(3)	(4)	(5)	(6)
Woman most voted	-0.24** (0.11)	-0.27** (0.14)	-0.35** (0.16)	-0.60** (0.31)	-0.60* (0.31)	-0.45 (0.34)
N	460	445	409	254	445	445
h	full	10	8	5	10	10
Pol	linear	linear	linear	linear	quadratic	quadratic
Triang. weighting	no	yes	yes	yes	no	no
Year FE	yes	yes	yes	yes	yes	yes
Province FE	no	no	no	no	no	yes
Mean dep. var.	0.57	0.57	0.59	0.62	0.57	0.57

Table B3: Gender and winner's characteristics

<i>Dep. var.</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	PSOE	PP	Incumbent			Mayor	List	Seat share	Votes
			Cand.	Counc.	Leader				
Woman most voted	-0.09 (0.07)	0.12* (0.07)	0.05 (0.03)	0.08 (0.07)	-0.03 (0.06)	-0.14** (0.07)	0.04 (0.09)	0.00 (0.01)	0.26 (0.98)
N	632	632	545	545	545	545	477	632	632
Mean dep. var.	0.37	0.28	0.02	0.16	0.22	0.33	0.54	0.40	38.90
S.d. dep. var.	0.48	0.45	0.15	0.36	0.42	0.47	0.50	0.06	6.58

Table B4: Gender and politicians' characteristics

Dep.	Mayors		Most voted list			Homophily educ (5)	Homophily age (6)	Homophily index (7)
	Educ (yrs) (1)	Age (2)	Avg educ. (3)	Avg age (4)				
Woman	0.95*** (0.34)	-3.62*** (0.99)						
Woman most voted			-0.28 (0.50)	-2.57** (1.28)	0.40 (0.60)	2.11 (1.33)	7.76 (7.19)	
N	499	499	422	432	214	223	210	
Mean dep. var.	12.92	47.60	12.11	45.44	-2.76	-8.32	-25.16	
S.d. dep. var.	3.76	10.03	2.86	7.23	2.20	6.24	32.81	

Table B5: Heterogeneity analysis by feminization of municipal council. RDD estimates

<i>Dep.var: Mayor most voted</i>	(1)	(2)	(3)	(4)
Woman most voted	-0.45*** (0.15)	-0.44*** (0.12)	-0.25*** (0.09)	-0.19** (0.08)
Woman most votedXFem coun. > 0	0.31** (0.14)			
Woman most votedXFem coun. > p25		0.34*** (0.11)		
Woman most votedXFem coun. > median			0.17* (0.09)	
Woman most votedXFem coun. > p75				0.12 (0.09)
Winner is Woman X Pop.	-0.00*** (0.00)	-0.00*** (0.00)	-0.00*** (0.00)	-0.00*** (0.00)
N	616	616	616	616

Table B6: Heterogeneity analysis by local gender culture. RDD estimates

<i>Dep.var: Mayor most voted</i>	(1)	(2)	(3)	(4)
Woman most voted	-0.20 (0.20)	-0.22* (0.11)	-0.17* (0.10)	-0.19** (0.09)
Proxy culture	1.00** (0.47)			
Woman most voted X Proxy culture	0.01 (0.55)			
Proxy culture > p25		0.12 (0.08)		
Woman most voted X Proxy culture > p25		0.04 (0.10)		
Proxy culture > median			0.10 (0.07)	
Woman most voted X Proxy culture > median			-0.03 (0.09)	
Proxy culture > p75				0.13* (0.07)
Woman most voted X Proxy culture > p75				-0.05 (0.10)
N	577	577	577	577