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My (Running) Mate, the Mayor: Political Ties and Access to Public Jobs in Ecuador

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We show that local politicians' probability of being employed by a municipality increases when they have a strong party connection to its mayor. Using a regression discontinuity design, we compare the employment outcomes of individuals connected to the winner vis-à-vis those connected to the runner-up in close mayoral races in Ecuador. Among candidates to local councils who lose their bid, the probability of getting a job in the municipality increases tenfold when their own party's mayoral nominee is elected. Importantly, the effect is concentrated among low-ranking positions, which reveals that this is the result of political patronage. Three additional results shed light on where patronage is more likely to emerge. First, the effect is stronger in poorer municipalities, where public sector jobs are more valuable. Second, benefits go largely to politicians better positioned within the party structure. Third, the effect is concentrated among younger mayors, who have a longer career ahead of them to capitalize clientelist arrangements.

KEYWORDS

Bureaucracy, close elections, patronage, public sector employment

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CAF - DOCUMENTO DE TRABAJO #2020/01

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Mi Compañero (de Partido), el Alcalde: Conexiones Políticas y Acceso al Empleo Público en Ecuador

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En este estudio mostramos que tener una conexión partidaria con el alcalde de un municipio aumenta la probabilidad de que un político local obtenga un empleo en el gobierno municipal. Como estrategia de análisis, utilizamos un diseño de regresiones discontinuas en elecciones competitivas en el cual comparamos el perfil de empleo de individuos conectados con el ganador de una elección de alcalde con el de los conectados con el candidato que obtuvo el segundo lugar. En concreto, nos enfocamos en políticos locales en Ecuador que compitieron como candidatos a consejos municipales, pero que no resultaron electos. En este grupo, encontramos que la probabilidad de obtener un trabajo en el gobierno municipal es diez veces mayor si el candidato a alcalde del partido gana la elección. De manera importante, el efecto se concentra en empleos de bajo rango, lo cual revela la existencia de patronazgo político. Tres resultados adicionales muestran condiciones en las cuales el patronazgo florece. Primero, el efecto es mayor en los municipios más pobres, en donde el valor de un empleo en el sector público es más alto. Segundo, los beneficios van principalmente a políticos con un mejor posicionamiento dentro de su partido. Tercero, el efecto se concentra en los alcaldes más jóvenes, quienes tienen un horizonte político más largo para aprovechar relaciones clientelares.

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1 | INTRODUCTION

There are many reasons why political patronage in public employment is widely recognized as a threat to a government's ability to function well (CAF, 2019). For example, the hiring of bureaucrats based on criteria other than merit can lead to the selection of less able public officials and, in turn, affect the quality of public service delivery. Furthermore, the systematic recruitment of political supporters could undermine the independence between elected officials and bureaucrats, and, hence, increase the likelihood of state capture and systemic corruption.

To fight patronage, most countries have enacted legislation to establish a professional civil service using merit as the main hiring criterion.¹ However, the implementation of this mandate is not always straightforward. Abundant anecdotal evidence suggests that the political use of public employment may coexist with formal civil service systems, particularly in developing countries (Grindle, 2012). The profusion of this anecdotal evidence contrasts, though, with the paucity of systematic evidence about whether and how patronage can persist despite civil service reform.

In this paper, we focus on local politicians and study the causal effect of having a strong party tie to the mayor of a municipality on the probability of having a job in that same municipal government. Moreover, we examine whether this effect is the result of political patronage.

We conduct our study in the context of Ecuador, an upper-middle income country divided into 221 municipalities. These municipalities are responsible for urban planning, land use regulation, building and maintenance of urban infrastructure, and the provision of public services such as drinking water, sewerage, and waste management. Municipalities are governed by a mayor and a municipal council, both of which are elected by popular vote. In accordance with the national public employment law, mayors have the discretion to fill senior positions in the administration, whereas all other municipal employees must be hired following a merit-based competitive process (Section 2).

Candidates for the municipal council are likely to have a strong tie to the mayoral candidate from the same party. Parties nominate only one candidacy for mayor and—in the median municipality—five candidacies to the council. Each candidacy must include one main and one substitute candidate.² Given that these candidates form such a small group, they are likely to know each other personally. Moreover, since there are benefits of campaigning and (if elected) working together in government, they have incentives to develop a close relationship (if they did not have one previously).

To study the link between political ties and public employment, we merge information from the National Electoral Council on mayoral and municipal council candidates with municipalities' official personnel lists published online. We then complement that information with data from the National Register of Higher Education Degrees. As a result, we have a dataset of local politicians who ran as candidates for municipal council positions in the 2014 elections, with information on the candidates' party affiliation, electoral performance, whether they have a payroll position in the municipal government, basic demographic data, and tertiary education attainment status. For each candidate, we include information about the mayoral candidates from the same party. Finally, we add municipality characteristics from the 2010 population census (Section 3).

For identification, we rely on a regression discontinuity (RD) design exploiting close

¹According to recent analyses of legal texts, more than 90 out of 117 surveyed countries include provisions in their constitution or in a national legislation for the meritocratic recruitment of civil servants (Schuster, 2017).

²Substitute candidates are individuals who replace the main candidate if the candidate is elected but leaves office during the mandated term.

elections to compare the outcomes for local politicians with and without a party connection to the mayor. Specifically, we study the employment outcomes for losing candidates to the local council from parties whose mayoral candidate barely won or barely lost the municipal election (Section 4). We find that local politicians with a strong party tie to a mayor have higher chances of having a job in the municipal government. The probability for nonelected municipal council candidates who belong to the same party as the mayor to obtain a job at the municipality is 18 percentage points higher than for nonelected candidates from other parties. Considering that only 1.8 percent of the comparison group actually gets a job at the municipal government, the estimated coefficient implies a tenfold increase in the probability of joining the municipal government. This effect is large in absolute terms but also in comparative terms. In a close study to ours, [Colonnelli, Mounu and Teso \(2018\)](#) estimate that candidates not elected to a city council in Brazil but who are connected to the mayor are 51 percent more likely to find a job in the public sector. This suggests that party connections are more valuable in Ecuador (see more details in Section 5).

An important question is to what extent this result reflects the existence of political patronage—i.e., a quid pro quo in which politicians offer public jobs in exchange for electoral support.³ The appointment of political allies does not necessarily imply patronage. Politicians may select individuals close to them because they have better information about their skills and motivations. Additionally, ideologically close individuals may be more effective in implementing the political platform on which a mayor campaigned. These arguments inform civil service regimes, like the Ecuadorian one, that allow politicians to directly appoint their senior managers or aids while forbidding the use of political interference in the recruitment of middle- and low-ranking bureaucrats.

With these insights in mind, we analyze the position in which losing candidates connected to the mayor enter the municipal bureaucracy. We find that the effect of political connections on access to public employment is concentrated among low-ranking occupations (i.e., laborer, assistants, and low-skilled analysts), with null effects among high-ranking jobs (i.e., highly skilled analysts and directors). This is consistent with a clientelist arrangement in which politicians use public jobs to reward political allies.

Three additional results reinforce this conclusion and provide suggestive evidence of where patronage is more likely to emerge. First, we find a stronger effect in poorer municipalities, where a public job might be a more attractive employment option. Political connections translate into bureaucratic appointments in the poorest 75 percent of municipalities but not in the richest quartile.⁴ Second, we find a much larger effect of having a political tie to the elected mayor among the main (as opposed to the substitute) candidates. As long as being the main candidate can be interpreted as a signal of being better positioned within the party structure, this result is consistent with a patronage strategy that directs political appointments to the better-connected party members. Third, the effect is positive and significant for younger mayors, who have a longer career ahead of them to benefit from the political networks with party fellows built through patronage.

Our paper contributes to the literature on the personnel economics of the state (See [Finan et al. \(2017\)](#) for a comprehensive review). In particular, this paper is closely related to recent studies that document the existence of political patronage in public employment. In the context of Brazil, [Brollo, Forquesato and Gozzi \(2017\)](#) and [Barbosa and Ferreira \(2019\)](#) show that party affiliates enjoy a higher probability of obtaining a job in a municipality

³As [Robinson and Verdier \(2013\)](#) show, when public employment provides rents, offering jobs in the public sector to political supporters may be an appealing mechanism to establish clientelist arrangements, since they constitute a credible and reversible means of allocating rents.

⁴An alternative explanation is that higher-income jurisdictions may have better institutional quality, which leads to less patronage.

when their party reaches the mayoral office, while [Colonnelli, Mounu and Teso \(2018\)](#), who conducted the closest study to ours, find a similar result focusing on campaign donors and candidates for city councils. Our main contribution is twofold. First, we present comparable evidence on the existence of patronage in a different setting, Ecuador. Second, we show the contexts in which patronage flourishes. These findings gain relevance given that recent results show that discretionary hiring may be detrimental to the quality of public service delivery ([Akhtari, Moreira and Trucco, 2017](#); [Estrada, 2019](#); [Xu, 2018](#)).⁵

This paper is also connected to studies that analyze the benefits of being connected to politicians in terms of public and private employment outcomes (see, for example, [Fafchamps and Labonne, 2017](#) and [Manacorda and Gagliarducci, 2016](#)). Furthermore, it contributes to a large body of political science research that studies how elected officials use government jobs for political purposes, such as for compensating party members for their work or maintaining party cohesion (see a discussion in [Brollo, Forquesato and Gozzi, 2017](#)).

The rest of the paper is organized as follows. Section 2 presents the institutional context, Section 3 describes the data, Section 4 describes the research design, Section 5 presents and discusses the results, and Section 6 concludes.

2 | INSTITUTIONAL BACKGROUND

2.1 | Municipal Elections in Ecuador

Ecuador is organized into 23 provinces that are divided into 221 municipalities, called cantons, which in turn are divided into urban and rural parishes. Municipalities are responsible for urban planning, land use regulation, the building and maintenance of urban infrastructure, and the provision of public services such as drinking water, sewerage, and waste management, among other competences.

The municipal government is exercised by a mayor and a municipal council, both of which are elected by popular vote. The number of councilors on municipal councils depends on the population and varies between 5 councilors in municipalities with less than 50,000 inhabitants and 15 councilors in municipalities with more than 400,000 inhabitants.⁶

In February 2014, Ecuador held elections to appoint local authorities. At the municipal level, 221 mayors and 1,305 municipal councilors were elected for a period of five years.⁷ At the time of the 2014 election, local authorities could be reelected an indefinite number of times.⁸

In Ecuador, every party presents a candidacy for the mayoral race and an open list of N candidacies for the municipal council—where N is the size of the council. Voters choose one mayoral candidacy and any combination of N candidacies for the municipal council,

⁵For elected office, [Artiles, León-Ciliotta and Kleine-Rueschkamp \(2018\)](#), [Martinez-Bravo \(2017\)](#), and [Besley, Montalvo and Reynal-Querol \(2011\)](#), among others, show the importance of selection for economic and public service delivery outcomes.

⁶The only exception is the municipality of Quito, which has 21 councilors.

⁷In Ecuador, both national and local authorities are elected for a period of four years. However, after the 2008 Constitution, the electoral law determined that the following two terms would be for five years (2009–2014 and 2014–2019) so that national and local elections would not be concurrent. Thus, from 2019 onward, local authorities have been elected for four-year terms, and the gap between national and local elections is two years.

⁸This rule was modified in 2015 by a constitutional amendment that allows popularly elected authorities to seek reelection only once and establishes that those who have already been elected twice to the same office since the 2008 Constitution came into force are not able to stand for reelection. As a result, 47 of the country's 221 mayors could not seek reelection in 2019.

irrespective of party affiliation. The electoral system to appoint mayors and municipal council members is different. While the election of mayors follows a first-past-the-post system, candidates for the municipal council are elected through proportional rule—following the D’Hondt method—in an open list system.

2.2 | The Recruitment System for Public Servants

The hiring of public servants in Ecuador is governed by the Organic Law of Public Service. The law established a merit-based competitive examination process, based on a set of specific rules defined at the national level, for entry into public service careers at all levels of government. After being selected and completing an initial trial period, career public officials are protected against discretionary dismissal.⁹

Alternatively, two types of public servants are selected through discretionary appointments: high-ranking managers and fixed-term contractors. These officers are excluded from the public service career path (see more details on the Ecuadorian civil service regime in [Iacoviello, 2014](#)).

2.3 | Transparency Requirements for Public Agencies

To increase transparency across the public sector, the Ecuadorian government in 2004 approved the Organic Law of Transparency and Access to Public Information. This law requires all public institutions to make information regarding payroll, contracts, finances, plans, and other types of information freely available online. Most importantly for this study, this law requires municipalities to report their entire list of personnel, including wages and positions, each month. Although compliance with the requirements remained low for several years after the law was enacted, by 2015 it had gradually increased to the point that almost all municipalities were disclosing the required information and providing it on their websites.

3 | DATA

We construct a dataset of nonelected candidates for municipal council positions in 184 Ecuadorian municipal elections in 2014. The data set has information on the candidates’ party affiliation, basic demographics, tertiary education attainment, electoral performance, and whether they have a payroll position in the municipal government where they ran for election. We also include information about mayoral candidates from the same party and municipality characteristics. To build this dataset, we merge information from the National Electoral Council on candidates in mayoral and municipal council races to official personnel lists the municipalities publish online. We complement these data with information from the National Register of Higher Education Degrees and the 2010 population census.

We download candidate lists for municipal council positions and mayoral races in the 2014 and 2009 elections from the National Electoral Council’s website. Each list has information on the candidates, including their full name, sex, age, party affiliation, and the number of votes they received. These data include both main and substitute candidates. We focus on the 2014 candidates and use their full name and municipality to merge them with the 2009 lists. Ecuador follows the Spanish naming convention, so individuals regularly have a first name, middle name, paternal last name, and maternal last name, which help us

⁹Teachers in the public education system and employees in the judiciary and legislative branches, the army, the police, and the foreign service are regulated by other specific laws.

perform a matching of good quality. We exclude from further analysis seven municipalities where the winning or runner-up mayoral candidate did not have any associated council candidates, and one municipality where all candidates from the party winning the mayoral election were elected to the city council, so we are left with 213 municipalities out of 221.

As mentioned in the previous section, the national law on transparency and access to public information mandates that all Ecuadorian municipalities publish a list online each month of all municipal employees. Taking advantage of this law, we download payroll reports for the months of December 2015, 2016, and 2017 from the municipalities' websites. We were able to obtain reports for 130 municipalities in 2015, 158 in 2016, and 165 in 2017. In total, we have at least one year of information for 191 of the 221 municipalities. The payroll reports include an employee's full name, position, and monthly wage. Using that, we classify individuals into five categories (laborer, assistants, low-skilled analysts, highly skilled analysts, and managers), which we further collapse into two groups: low-ranking occupations (composed of the first three categories) and high-ranking occupations (composed of the last two categories). Table A.1 in the Appendix offers a brief description of each category.

We merge the list of 2014 candidates by full name and municipality to the payroll data. By focusing on candidates from the winning and runner-up parties in the mayoral election—those of interest in our research design—we obtain a dataset of 2,642 candidates in 184 municipalities.

We complement the resulting dataset with information from the National Register of Higher Education Degrees managed by the Ministry of Higher Education, Science, Technology and Innovation. This register centralizes information from all the higher education degrees awarded by Ecuadorian institutions. The data has information on individuals' tertiary degrees (technical, undergraduate, and graduate), fields of study, and universities where the individuals matriculated and were awarded degrees. We summarize this information in a dummy variable that indicates if the individual has a university degree. We merge data on only the main candidates because they were the only ones for whom we were able to obtain the national register records. Finally, we add to the dataset information from the 2010 population census, which includes variables on the municipality's population size, share of female population, average years of education, and the poverty rate.

Table 1 presents summary statistics for candidates in the full sample—see Column (1)—and in close elections, using the preferred definition of close elections that we will use in this study—see Column (2).

4 | RESEARCH DESIGN

4.1 | Identification Strategy

We are interested in the causal effect of having a direct political tie to the mayor on the probability of being employed in the municipal government. To estimate this effect, we rely on a regression discontinuity (RD) design in a close-election setting, in which we compare the outcomes of losing candidates for municipal council positions from political parties whose mayoral candidate barely won or barely lost the municipal election. We focus on losing candidates to the municipal council because the winning candidates are members of the municipal council and, hence, are not eligible for hiring elsewhere in government.

Our main estimates come from local linear regressions using the following specification:

$$Y_{ipm} = \alpha + \beta \text{Connected}_{pm} + \theta \text{MV}_{pm} + \delta \text{Connected}_{pm} \cdot \text{MV}_{pm} + \epsilon_{ipm} \quad (1)$$

Where $Y_{p,m}$ is an employment outcome of individual i from political party p in municipality m . $\text{Connected}_{p,m}$ is an indicator variable that equals one if the mayoral candidate of party p won the election in municipality m . $MV_{p,m}$ is the margin of victory of party p in the mayoral election.

We estimate Equation 1 in a sample of close elections, which we obtain using the optimal bandwidth algorithm proposed by [Calonico, Cattaneo and Farrell \(2018\)](#). This procedure results in the same sample of elections that would be obtained using a 10 percentage points margin of victory as a bandwidth. Following the literature, we also present results using the samples of elections decided within margins of victory of 5 and 2.5 percentage points.¹⁰ Standard errors are clustered at the municipal level and estimated using the procedure developed by [Calonico, Cattaneo and Titiunik \(2014\)](#) to produce robust bias-corrected confidence intervals.

4.2 | Validity of the RD Setting

The identification assumption in the RD design is that all cofounders determining $Y_{i,p,m}$ are a continuous function with respect to the margin of victory ($MV_{p,m}$) around the cutoff that defines the winning party ([Lee and Lemieux, 2010](#)). This implies that the probability of winning the mayoral election in close races is as good as random.

We investigate the validity of our identification assumption by looking at how the characteristics of municipal council and mayoral candidates vary along the margin of victory and whether there are discontinuities in these covariates at the election cutoff. Figure 1 plots local means by margin of victory in the mayoral election on several characteristics of the nonelected candidates to the municipal council. The bandwidth of the bins used to estimate the local means are computed using the procedure developed by [Calonico, Cattaneo and Titiunik \(2015\)](#) to mimic the underlying variability of the data. There is no visual evidence of a discontinuity around the election cutoff in any of the six characteristics plotted. We further investigate such patterns and run separate regressions using our econometric model with candidate characteristics as the independent variables. Panel A in Table 2 gives the corresponding RD estimates, which confirm our interpretation of the visual evidence: we do not find any discontinuity at the election threshold in the six variables studied. None of the RD estimates is statistically significant at conventional levels.

We follow the same exercise to investigate differences in the observable characteristics between the winning and runner-up candidates in the mayoral election. Figure 2 presents visual evidence and Panel B in Table 2 shows the RD estimates for five candidate characteristics. Again, we do not find evidence of discontinuities in candidate characteristics around the election threshold.

Hence, the evidence presented here supports the identification assumption required to estimate a causal effect in an RD framework with close elections.

5 | RESULTS

Main result. Figure 3 shows a graphic depiction of our main result. The observations correspond to all the losing candidates for councilperson, and they are grouped in bins according to the electoral margin (positive for winners and negative for losers) of the corresponding mayoral candidate. The graph also includes first order polynomials to fit the observations on each side of the cutoff. There is a clear discontinuity in the percentage of

¹⁰Summary statistics on the samples of elections decided within margins of victory of 10, 5, and 2.5 percentage points are available in Table A.2 in the Appendix.

individuals who go on to work in the municipality, which goes from around 0 percent to around 20 percent.

The regression results in Table 3 confirm the insights from the visual inspection. Our preferred specification estimates of Equation 1 using the optimal bandwidth according to Calonico, Cattaneo and Titiunik (2014) and is presented in Column 1. We find that belonging to the party of the mayor increases the probability of having a job in the municipality by 18 percentage points among losing candidates for councilperson. In Columns (2) and (3), we perform local linear regressions using different bandwidths, and the results remain robust with the point estimate becoming larger as the bandwidth gets narrower.

The estimated coefficient is sizable. Only 1.8 percent of the losing candidates for councilperson who do not share party affiliation with the winning mayor go on to work in the municipality, meaning that the effect represents a tenfold increase in that probability. This is much larger than the result found by Colonnelli, Mounu and Teso (2018) in the Brazilian context, who report a 51 percent increase in the probability of public sector employment (among losing candidates for local councils) as a consequence of belonging to the party of the mayor. While the point estimates of Colonnelli, Mounu and Teso (2018) and this paper are very similar, the relative effects implied by them differ substantially because of the differences in the reported probability of public sector employment in the comparison group (losing candidates who opposed the mayor): 1.8 percent in our case and 24 percent in Colonnelli, Mounu and Teso (2018). One possible interpretation of the combined results is that public sector employment among political candidates is generally more common in Brazil, while party connections are more valuable in Ecuador. However, part of the difference may be a consequence of Colonnelli, Mounu and Teso (2018) using a broader definition of public sector employment.

The previous set of results used as outcome a dummy variable that takes value 1 for individuals who hold a position the municipality in any of the three years for which we have information (2015, 2016, and 2017). In Table 4, we show the results of running separate regressions for each year. In each case, we consider only individuals from municipalities for which we have personnel information for that given year. In our final data set, there are 126 such municipalities for 2015, 154 for 2016, and 160 for 2017. Correspondingly, the number of observations increases across the columns of Table 4. The estimates show that the effect on municipal employment is present from the year immediately after the election (2015), and it persists until at least three years after the election (2017). Importantly, during the time studied, mayors had five-year terms in Ecuador, meaning that all the years we observe are in the same electoral cycle.

5.1 | Municipal Employment as Patronage: Some Revealing Patterns

Types of occupations in municipal administrations. Ideological proximity to the mayor can be especially valuable in some occupations in the municipal bureaucracy. For people in managerial positions, that proximity can be necessary to guarantee that the mayor's agenda is executed more swiftly. Thus, the selection of party fellows to the top brass of municipal administrations is not an indisputable sign of patronage. On the other hand, ideological alignment is far less important in lower-level positions of the bureaucracy, where no executive decisions are made.

With this in mind, we explore the types of occupations in which the party fellows of mayors are being placed. Around 70 percent of losing candidates that are later employed in the municipality have positions of low rank (i.e., laborer, assistants, and low-skilled analysts), with incomes that are on average USD 700 per month. The remainder are in high-ranking positions (i.e., highly skilled analysts and managers) with monthly incomes

of USD 1,720 on average.¹¹ These levels of income are high. According to data from the National Statistics Institute, the median salary in the private sector was USD 440–USD 450 per month during the 2015–2017 period.

To decompose our main effect by type of occupation, we estimate Equation 1 using as outcomes dummies for low- and high-ranking occupations. Table 6 shows that the effect is completely concentrated in low-ranking positions. Having a party connection with the mayor increases the probability of getting one of those jobs by 17 percentage points among losing candidates, an effect equivalent to more than 10 times the probability among those in the comparison group. For high-ranking positions, the estimate is much closer to 0 and insignificant. These findings represent further indication of patronage in Ecuadorian municipalities, since party fellows of mayors are occupying positions for which ideology and loyalty are unimportant.

It is important to remark that our results do not imply an absence of patronage in the allocation of top-brass positions in municipal administrations. They show only that the losing candidates for the municipal council are not receiving those appointments. Those position could still be given to other loyalists that we do not observe.

In Table 6, we also assess if the effect of political connections on occupational outcomes depends on the educational achievement of candidates (these results are obtained using only the main candidates, as we do not have the educational achievement of substitutes). Political connections increase the probability of getting a low-ranking position for both individuals with and without a university degree, although the effect is stronger for the latter group. There seems to be a small effect on the probability of getting a high-ranking position among university graduates, but the estimate is noisy and marginally insignificant (p -value = 0.132). On the other hand, political connections clearly have no effect on the probability that a candidate without a university degree gets a high-ranking appointment in the municipal administration. This suggests that patronage is exercised within some limits given by qualifications required for certain positions.¹²

Poverty and patronage. Party connections are more valuable in poorer municipalities, as Figure 4 shows. There, we plot the coefficients from our main regression after splitting the sample of municipalities according to their poverty rate. That rate is measured as the percentage of households below a poverty threshold in the Basic Needs Index, and it is generally high (average of 76 percent across municipalities, see Table 1). Political connections translate into bureaucratic appointments in all subgroups of municipalities, except the less poor quartile. This can be explained by at least two factors that cannot be disentangled. First, higher-income jurisdictions may have better institutional quality, which leads to less patronage. Second, losing candidates may have better outside options in those places, making bureaucratic appointments less valuable.

Within-party relevance and patronage. Because candidacies for councilperson in Ecuador must include a main candidate and a substitute, half the observations in our data set correspond to each of those categories. We interpret being the main candidate as a signal of being better positioned within the party structure. In terms of observable characteristics, main candidates—compared to substitutes—are older, more likely to be male, and more likely to have run in previous elections. Table 5 shows the results from estimating Equation

¹¹A small number of workers are unclassified because there is no information on their position or income. In the regression analysis to come, these individuals are included with a value of 0 for the two dummy variables that respectively capture high- and low-ranking occupations.

¹²When using as outcome the probability of getting any job in the municipality (disregarding its rank), the effect of connections is present for both university graduates and nongraduates.

1 separately for both types of candidates. Sharing party with the mayor increases the probability of employment in the municipality for both groups, but the effect is much larger for main candidates. The estimated coefficient for substitute candidates is about one-third in size and only marginally significant. This is consistent with a patronage strategy that directs political appointments to the better-connected party members.

Political career prospects and patronage. The career prospects of mayors may determine the extent to which they engage in patronage. For example, some authors have shown that lame duck politicians act in more discretionary ways and even engage in more corruption since they face no electoral accountability (Besley and Case, 1995; Ferraz and Finan, 2011). This could suggest that patronage may also increase as politicians near the end of their careers, as the menace of electoral punishment dwindles. However, patronage is different from forms of corruption such as embezzlement in that it is also a relational investment that serves to construct and cement alliances. As such, it is more valuable for politicians with more of their careers ahead of them, so the relationship between political career prospects and patronage is an empirical question.

Figure 5 shows how the extent of patronage changes with the age of mayors. We divide all candidates for mayor into the four quartiles of their age distribution and estimate our baseline model for each group. The effect is positive and significant for the first three age groups: party connection to a (relatively) young mayor increases the chances of municipal employment among losing candidates. But older mayors (54 and older) do not reward losing candidates to the council with bureaucratic appointments (the point estimate is 0.058, with a p-value of 0.64).¹³ This is consistent with the view that patronage is especially valuable for young and up-and-coming politicians who want to build strategic relationships with party fellows.

5.2 | Robustness Checks

Alternative definitions of the sample. So far, we have included in our sample all the municipalities for which we have at least one year of information on personnel. This allows us to maximize the number of observations we consider, given that many municipalities only disclose that information in some years. Alternatively, we can restrict our sample to consider only municipalities for which we have personnel information for all three years. Doing this leaves us with 107 municipalities (out of the 184 in the larger sample) but does not change our main results.

Table 7 presents the corresponding estimates. In the first column, we use as outcome a dummy taking the value 1 if the individual holds a bureaucratic position in any year. The coefficient is only a little larger than the one obtained with the original sample (Column 1 of Table 3). Columns 2 through 4 show the year-by-year result. The point estimates and their slightly decreasing pattern replicate the finding of Table 4, suggesting that composition effects are negligible.

Collapsing the results at the party level. Throughout the analysis, we have used individuals as the units of observation, clustering at the municipality level for inference. However, we can also collapse the observations at the municipality-party level. In that case, the running variable continues to be the same (margin of difference between the winner and the runner-up in the mayoral election), while the outcome measures the percentage of the losing

¹³This set of results is unaffected by controlling for the incumbency status of the mayor. Term limits for mayor did not exist in Ecuador during the period of our analysis, barring the possibility of comparing eligible and ineligible individuals for reelection.

candidates for councilperson in the party that go on to work in the municipality. Instead of a dummy, this is a variable that ranges from 0 (no losing member of the party list gets a bureaucratic position) to 1 (all of them do).

Figure 6 offers a graphic depiction of the main results using municipality-party as the unit of observation. The main result remains clear, with a significant discontinuity around the threshold in the fraction of candidates that receive a bureaucratic appointment. The regression analysis confirms this: a victory of the mayoral candidate increases the proportion of (losing) party list members working in the municipality by 24 percentage points (Table 8).

6 | CONCLUSIONS

We have shown evidence that local politicians with a strong tie to the mayor of a municipality in Ecuador have higher probability of having a job in the municipal government. Revealingly, this effect is concentrated in low-ranking positions, which indicates that these jobs are the result of political patronage and not the selection of talented or motivated individuals to serve as senior managers or aids in the municipal government. Ecuadorian law allows mayors to use discretion to select the individuals who will occupy senior positions but mandates the use of competitive examinations for hiring in the rest of the bureaucracy. Because the public sector wage premium in Ecuador is high, a low-ranking public job might be an attractive employment option for many individuals, particularly for those living in poorer municipalities, where we find a stronger effect.

Although many countries have adopted civil service laws to curb the clientelist use of public employment, the effective implementation of these regulations remains elusive in some contexts. Our results, like those of [Colonnelli, Mounu and Teso \(2018\)](#), [Brollo, Forquesato and Gozzi \(2017\)](#) and [Akhtari, Moreira and Trucco \(2017\)](#) in Brazil, show that patronage in public employment can coexist with a formal civil service system. The challenge is that the returns for politicians to use public jobs for patronage are likely high, either in the form of electoral support, party discipline, funds, or policy support (see a discussion in [Colonnelli, Mounu and Teso \(2018\)](#)).

There are different ways in which patronage may accommodate to civil service regulations. At the micro level, politicians looking to give jobs to specific individuals might take advantage of legal loopholes to hire with more discretion (see [CAF, 2019](#) for examples in Latin America) or even try to manipulate the formal examinations. At the system level, weakening the regulator in charge of enforcing civil service law or limiting the coverage of the law to certain agencies or levels of government can contribute to keep patronage alive and well ([Grindle, 2012](#)). We do not have the data to study the micro-level mechanisms in this context, nor the research design to study the system-level ones. But the evidence presented here calls for a better understanding of the design and implementation challenges associated with developing a professional civil service.

FIGURES

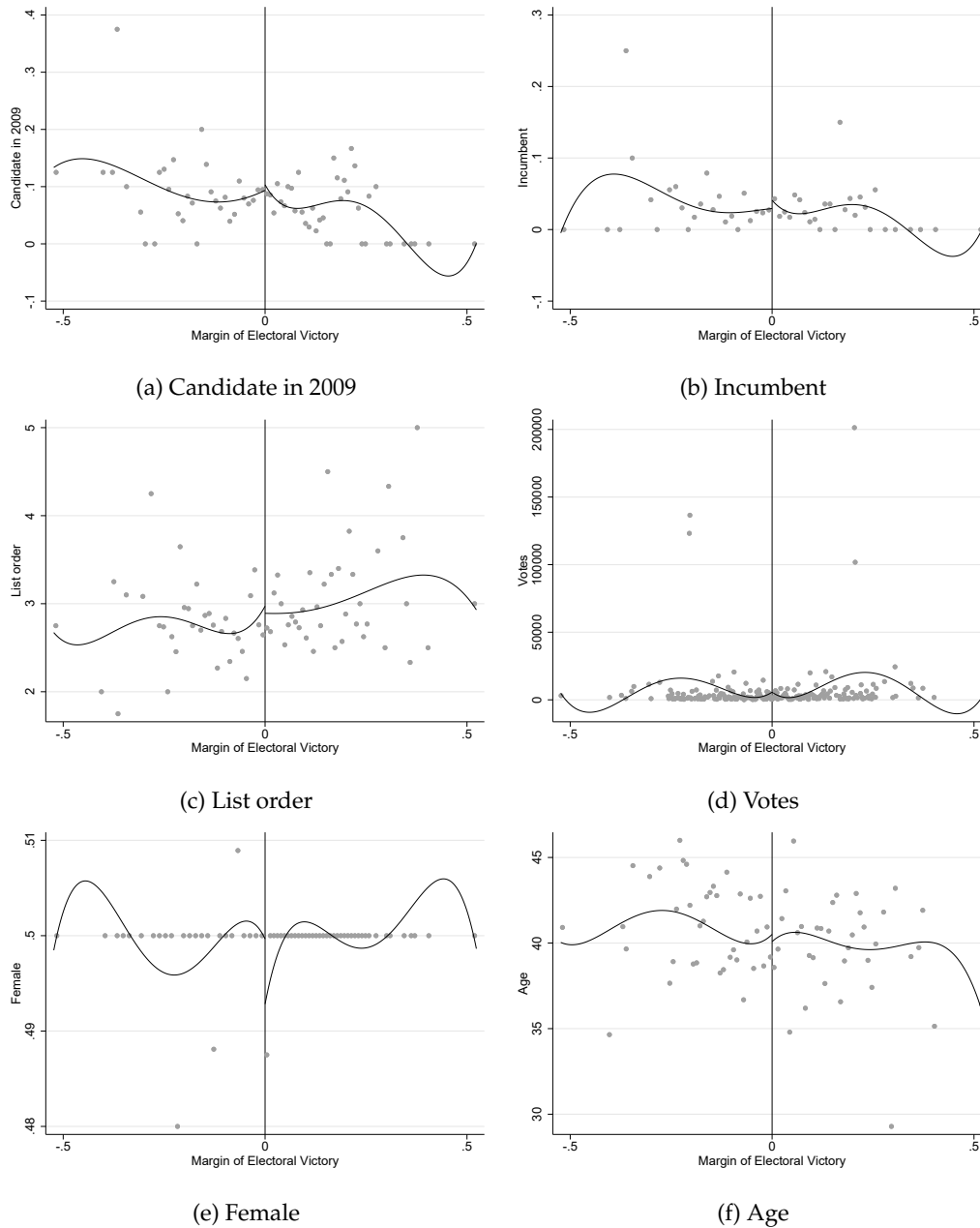


FIGURE 1 Characteristics of Nonelected Candidates to the Municipal Council. *Notes:* The figure shows the conditional means of municipal council candidates' characteristics by the electoral margin of the corresponding mayoral candidate. The bandwidth of the bins used to estimate the local means are computed using the procedure developed by [Calonico et al. \(2015\)](#) to mimic the underlying variability of the data. The vertical line separates candidates belonging to the runner-up (left-hand side) and the winning (right-hand side) party in the mayoral race. The continuous lines represent the fourth degree polynomials that best fit the underlying data on each side of the cutoff. The sample consists of all losing candidates to the local council from municipalities for which we have personnel data for at least one year. *Source:* Data from National Electoral Council.

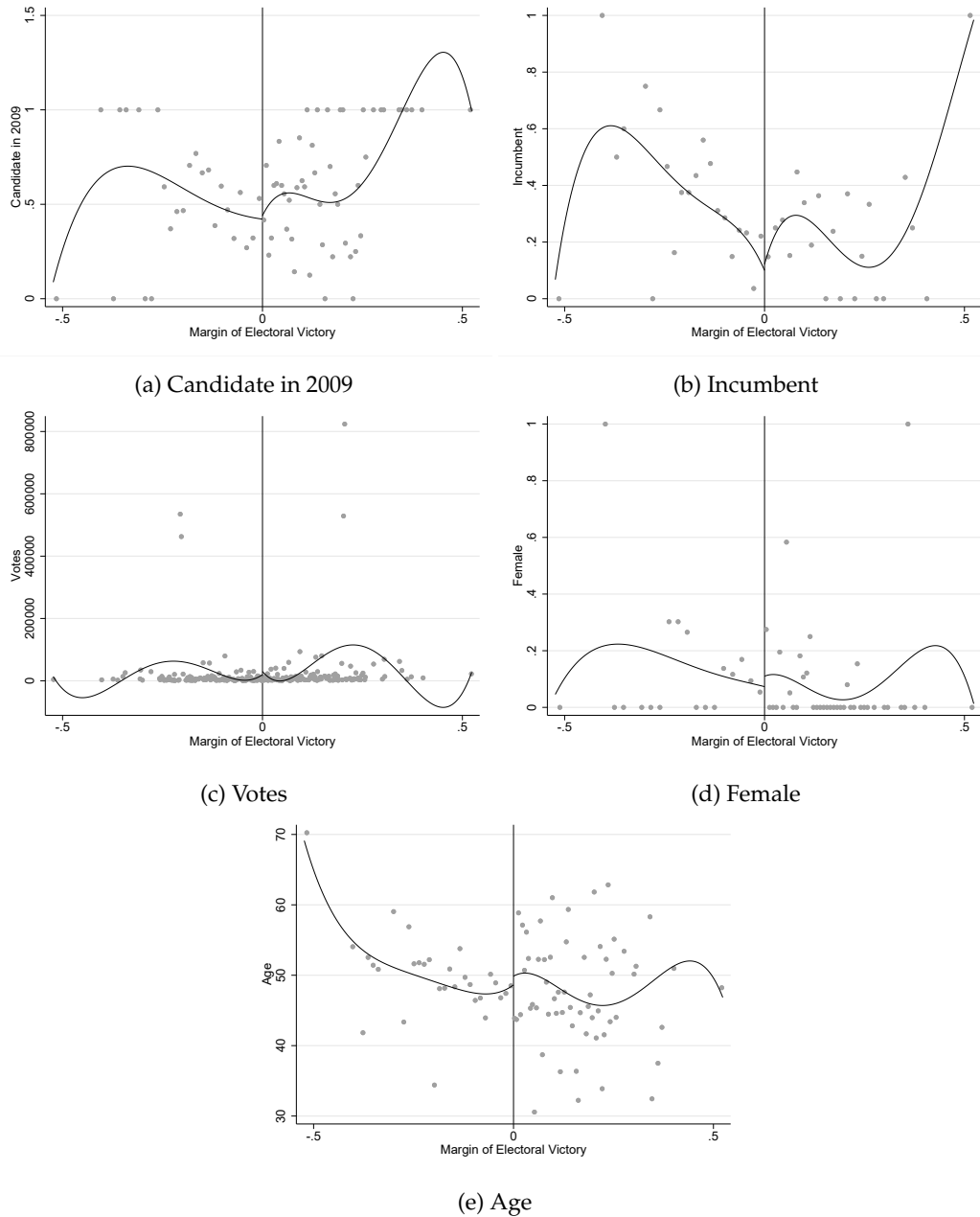


FIGURE 2 Characteristics of Mayoral Candidates. *Notes:* The figure shows the conditional means of mayoral candidates' characteristics by the electoral margin of victory. The bandwidth of the bins used to estimate the local means are computed using the procedure developed by [Calonico et al. \(2015\)](#) to mimic the underlying variability of the data. The vertical line separates candidates belonging to the runner-up (left-hand side) and the winning (right-hand side) party in the mayoral race. The continuous lines represent the fourth degree polynomials that best fit the underlying data on each side of the cutoff. The sample consists of all winning and runner-up candidates for mayor from municipalities for which we have personnel data for at least one year. *Source:* Data from National Electoral Council.

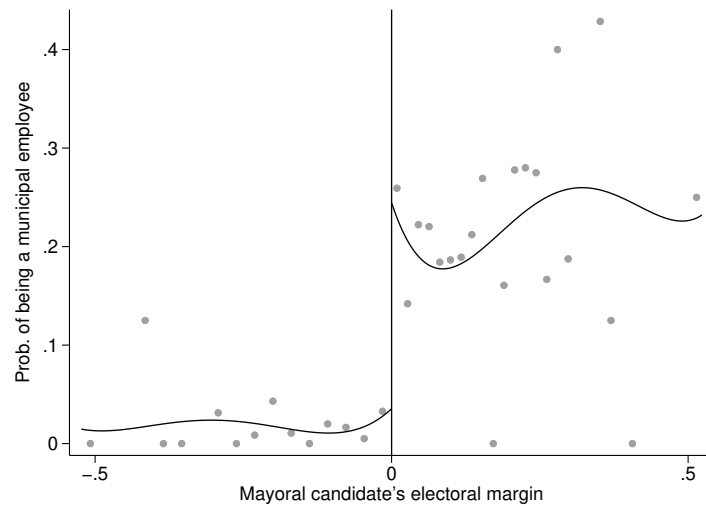


FIGURE 3 Candidates' Employment in Municipal Government. *Notes:* The figure shows the fraction of council candidates employed in the municipality as a function of the electoral margin of the corresponding mayoral candidate. Individual observations are grouped in bins based on Calonico et al. (2017). The vertical line separates candidates belonging to the runner-up (left-hand side) and the winning (right-hand side) party in the mayoral race. The continuous lines represent the fourth degree polynomials that best fit the underlying data on each side of the cutoff. The sample consists of all losing candidates to the local council from municipalities for which we have personnel data for at least one year. *Source:* Data from National Electoral Council and municipalities' official personnel lists.

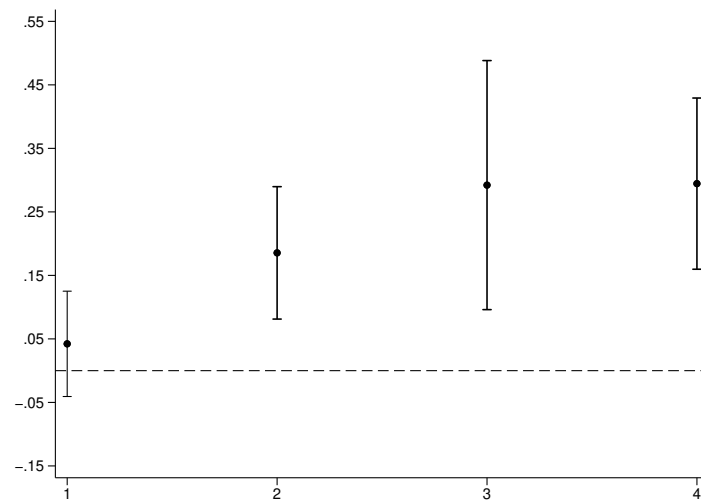


FIGURE 4 Effect by Poverty Rate in Municipality. *Notes:* The figure shows the heterogeneity of the main effect by municipality income levels. The sample of candidates to the local council is split into quartiles of the municipality poverty rate to run separate regressions. The figure plots the corresponding point estimates and 95 percent confidence intervals. In the underlying equations, the outcome is an indicator for being in the personnel of the municipality in any of the observed years. All estimates correspond to local linear regressions using the optimal bandwidth based on Calonico et al. (2017). *Source:* Data from National Electoral Council and municipalities' official personnel lists.

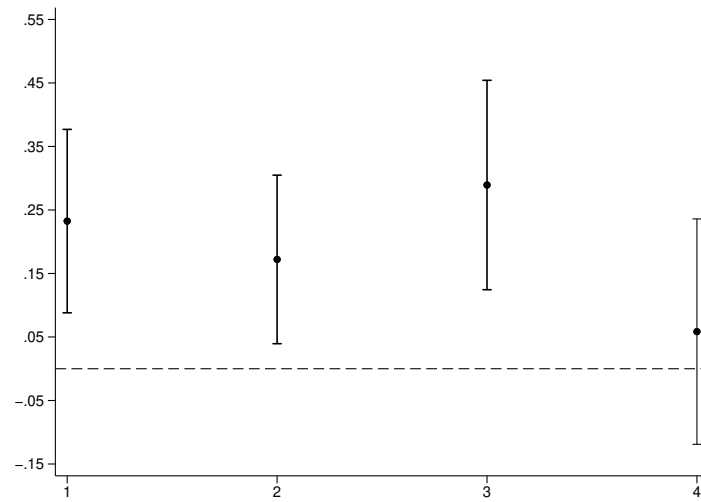


FIGURE 5 Effect on Having a Bureaucratic Position, by Age of Mayoral Candidate. *Notes:* The figure shows the heterogeneity of the main effect by the age of the mayor. The sample of candidates to the local council is split into quartiles of the age of their mayoral candidate to run separate regressions. The figure plots the corresponding point estimates and 95 percent confidence intervals. In the underlying equations, the outcome is an indicator for being in the personnel list of the municipality in any of the observed years. All estimates correspond to local linear regressions using the optimal bandwidth based on [Calonico et al. \(2017\)](#). *Source:* Data from National Electoral Council and municipalities' official personnel lists.

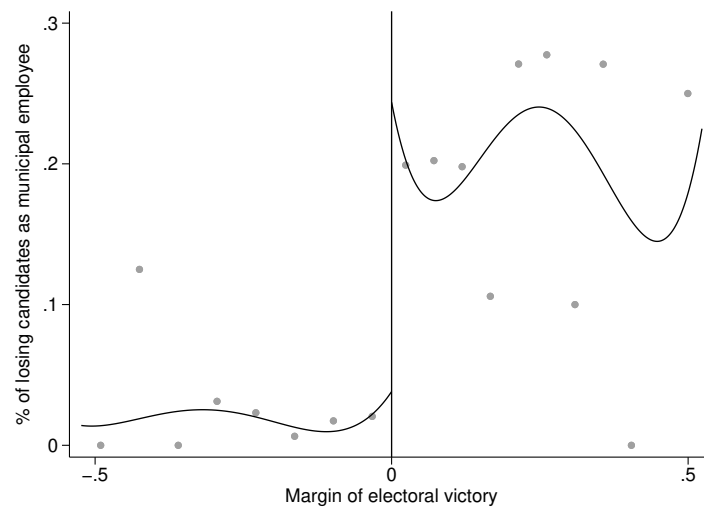


FIGURE 6 Results at the Party Level. *Notes:* The figure shows the fraction of council candidates employed in the municipality as a function of the electoral margin of the corresponding mayoral candidate. Individual observations are collapsed at the party-municipality level and grouped in bins based on [Calonico et al. \(2017\)](#). The vertical line separates party lists from the runner-up (left-hand side) and the winning (right-hand side) candidate for mayor. The sample includes party lists from all municipalities for which we have personnel data for at least one year. The continuous lines represent the fourth degree polynomials that best fit the underlying data on each side of the cutoff. *Source:* Data from National Electoral Council and municipalities' official personnel lists.

TABLES

TABLE 1 Summary Statistics: Candidates from Winning and Runner-up Parties in the 2014 Municipal Elections

	(1)	(2)
	All	CCFT bw.
Panel A. Candidates to the Municipal Council		
Non-elected candidates (N)	2,642	1,388
In winner party (%)	45.5	48.4
Candidate in 2009 election (%)	7.8	7.9
Incumbent (%)	2.9	2.7
List order (#)	2.8	2.8
Votes (#)	7,683.2	3,821.1
Municipal employee post 2014 election (%)	10.3	10.7
Females (%)	49.9	50.0
Age (years)	40.4	40.3
Has university degree (%)	39.4	34.4
Panel B. Candidates for Mayor		
Winner and runner-up candidates (N)	368	192
Candidates in 2009 election (%)	54.3	50.5
Incumbents (%)	26.6	24.0
Votes (#)	17,650.9	9,031.9
Female (%)	9.5	11.5
Age (years)	48.1	48.2
Panel C. Municipalities		
Number of municipalities (N)	184	96
Population size	71,675.5	43,871.6
Female population (%)	49.8	49.6
Average years of education	7.8	7.7
Population below poverty line (%)	76.1	77.1

Notes: The table presents means of characteristics of candidates to the municipal council (Panel A), candidates for mayor (Panel B), and Municipalities (Panel C). Column (1) reports statistics for the full sample and Column (2) reports observations within the optimal bandwidth proposed in [Calonico et al. \(2017\)](#). All samples are restricted to municipalities for which we have personnel data in at least one year. *Source:* Data from the National Electoral Council, the municipalities' official personnel lists, the National Register of Higher Education Degrees, and 2010 Population Census.

TABLE 2 RD Estimates: Balance of Candidate Characteristics

	(1) CCFT bw.	(2) 5 p.p.	(3) 2.5 p.p.
Panel A. Candidates to the Municipal Council			
Candidate in 2009	-0.010 (0.030)	0.001 (0.017)	0.048 (0.073)
Incumbent	0.005 (0.022)	0.007 (0.012)	0.015 (0.052)
List order	-0.055 (0.198)	0.077 (0.149)	0.123 (0.267)
Votes	-556.703 (931.804)	-740.624 (2249.419)	281.455 (1054.380)
Female	-0.006 (0.007)	-0.004 (0.003)	-0.026 (0.022)
Age	-1.024 (1.605)	0.699 (0.826)	-1.836 (2.495)
Panel B. Candidates for Mayor			
Candidate in 2009	-0.084 (0.154)	0.055 (0.087)	-0.124 (0.275)
Incumbent	-0.003 (0.120)	0.093 (0.072)	-0.296 (0.210)
Votes	-16.680 (2081.781)	-1955.711 (4819.135)	-39.400 (2093.329)
Female	0.074 (0.085)	0.026 (0.052)	0.149 (0.241)
Age	-1.335 (2.930)	1.255 (1.763)	-6.102 (5.056)

Notes: The table presents the regression discontinuity estimates of the relationship between party connection to the mayor and candidate characteristics. The sample in Panel A consists of all losing candidates to the local council from municipalities for which we have personnel data in at least one year, and in Panel B presents winning and runner-up candidates in the same municipalities. Column (1) estimates a local linear regression using the optimal bandwidth based on [Calonico et al. \(2017\)](#), while Columns (2) and (3) used bandwidth of 5 and 2.5 percentage points, respectively. Standard errors are clustered at the municipality level. ***p<0.01, **p<0.05, *p<0.1. *Source:* Data from the National Electoral Council.

TABLE 3 Effect of Sharing Party with Mayor on Having a Job in the Municipality

	(1)	(2)	(3)
	Bureaucrat any year		
Connected	0.193*** (0.037)	0.234*** (0.051)	0.280*** (0.069)
Observations	2,642	2,642	2,642
Bandwidth	CCFT	5 p.p.	2.5 p.p.
Effective obs. below	716	418	228
Effective obs. above	672	404	224
Mean D.V.	0.0182	0.0239	0.0351

Notes: The table presents the regression discontinuity estimates of the effect of party connection to the mayor on employment in the municipality. The dependent variable is an indicator for being in the municipality personnel list in any of the years in the sample (2015, 2016, or 2017). The sample consists of all losing candidates to the local council from municipalities for which we have personnel data in at least one year. Column (1) estimates a local linear regression using the optimal bandwidth based on [Calonico et al. \(2017\)](#), while Columns (2) and (3) use bandwidth of 5 and 2.5 percentage points (p.p.) respectively. Mean D.V. shows the mean of the dependent variable among candidates from the party of the runner-up in the mayoral race. Standard errors are clustered at the municipality level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. *Source:* Data from the National Electoral Council and municipalities' official personnel lists.

TABLE 4 Effect of Sharing Party with Mayor on Having a Job in the Municipality, Year-Specific Regressions

	(1)	(2)	(3)
	Bureaucrat in 2015	Bureaucrat in 2016	Bureaucrat in 2017
Connected	0.166*** (0.035)	0.157*** (0.036)	0.137*** (0.037)
Observations	1,826	2,192	2,268
Effective obs. below	588	628	606
Effective obs. above	538	602	576
Mean D.V.	0.0204	0.0159	0.0116

Notes: The table presents the regression discontinuity estimates of the effect of party connection to the mayor on employment in the municipality, by year. The dependent variable is an indicator for being in the municipality personnel list in 2015, 2016, and 2017, respectively. In each case, the sample consists of all losing candidates for the local council from municipalities for which we have personnel data for the respective year. All estimates correspond to local linear regressions using the optimal bandwidth based on [Calonico et al. \(2017\)](#). Mean D.V. shows the mean of the dependent variable among candidates from the party of the runner-up in the mayoral race. Standard errors are clustered at the municipality level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. *Source:* Data from the National Electoral Council and municipalities' official personnel lists.

TABLE 5 Effect of Sharing Party with the Mayor by Type of Candidate

	(1)	(2)
	Bureaucrat any year	
Connected	0.278*** (0.053)	0.106*** (0.039)
Observations	1,321	1,321
Type of candidate	Main	Substitute
Effective obs. below	366	464
Effective obs. above	345	423
Mean D.V.	0.0164	0.0194

Notes: The table presents the regression discontinuity estimates of the effect of party connection to the mayor on employment in the municipality. The dependent variable is an indicator for being in the municipality personnel list in any of the years in the sample (2015, 2016, or 2017). In Column (1), the sample is restricted to main (losing) candidates to the council, while Column (2) is restricted to substitute (losing) candidates. All estimates correspond to local linear regressions using the optimal bandwidth based on [Calonico et al. \(2017\)](#). Mean D.V. shows the mean of the dependent variable among candidates from the party of the runner-up in the mayoral race. Standard errors are clustered at the municipality level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. *Source:* Data from the National Electoral Council and municipalities' official personnel lists.

TABLE 6 Effect of Sharing Party with the Mayor on High- and Low-Ranking Municipal Bureaucratic Positions

	(1)	(2)	(3)	(4)	(5)	(6)
	High-ranking occupation			Low-ranking occupation		
Connected	0.020 (0.025)	-0.010 (0.007)	0.120 (0.079)	0.169*** (0.038)	0.284*** (0.074)	0.150*** (0.055)
Observations	2,642	801	520	2,642	801	520
Candidates	All	Main without university degree	Main with university degree	All	Main without university degree	Main with university degree
Effective obs. below	548	132	119	600	182	173
Effective obs. above	528	127	114	572	174	160
Mean D.V.	0.00182	0	0.00840	0.0133	0.0165	0.00578

Notes: The table presents the regression discontinuity estimates of the effect of party connection to the mayor on employment in the municipality, by occupation. In columns (1)–(3), the dependent variable is an indicator for having a high-ranking position in the municipality in any of the years in the sample, while in columns (4)–(6), the dependent variable is an indicator for having a low-ranking position in the municipality in any of the years in the sample. In Columns (1) and (4), the sample consists of all (losing) candidates to the local council. Columns (2) and (5) restrict the sample to main candidates without a university degree, and Columns (3) and (6) restrict it to main with a university degree. All estimates correspond to local linear regressions using the optimal bandwidth based on [Calonico et al. \(2017\)](#). Mean D.V. shows the mean of the dependent variable among candidates from the party of the runner-up in the mayoral race. Standard errors are clustered at the municipality level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. *Source:* Data from the National Electoral Council, municipalities' official personnel lists and the National Register of Higher Education Degrees.

TABLE 7 Municipalities with Information for All Years (2015–2017)

	(1)	(2)	(3)	(4)
	Bureaucrat			
	any year	in 2015	in 2016	in 2017
Connected	0.229*** (0.047)	0.175*** (0.034)	0.162*** (0.039)	0.157*** (0.047)
Observations	1,540	1,540	1,540	1,540
Effective obs. below	428	558	436	412
Effective obs. above	412	502	418	396
Mean D.V.	0.0140	0.0161	0.00917	0.0121

Notes: The table presents the regression discontinuity estimates of the effect of party connection to the mayor on employment in the municipality. In columns (1)-(4), the dependent variable is an indicator for being in the municipality personnel list in any of the years, in 2015, in 2016, and in 2017, respectively. The sample consists of all losing candidates to the local council from municipalities for which we have personnel data for all years. All estimates correspond to local linear regressions using the optimal bandwidth based on Calonico et al. (2017). Mean D.V. shows the mean of the dependent variable among candidates from the party of the runner-up in the mayoral race. Standard errors are clustered at the municipality level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. *Source:* Data from the National Electoral Council, municipalities' official personnel lists and the 2010 population census.

TABLE 8 Effect at Municipality-Party Level

	(1)	(2)	(3)
	Bureaucrat any year		
Connected	0.237*** (0.045)	0.248*** (0.055)	0.278*** (0.077)
Observations	214	214	214
Bandwidth	CCT	5 p.p.	2.5 p.p.
Effective obs below	49	37	18
Effective obs above	49	37	18
Mean D.V.	0.0187	0.0158	0.0255

Notes: The table presents the regression discontinuity estimates of the effect of party connection to the mayor on employment in the municipality. The dependent variable is the proportion of losing candidates to the local council from the party list that are in the municipality personnel list in any of the years of the sample. The sample is composed of party lists to the local council from the winning and runner-up parties in the mayoral election and is restricted to municipalities for which we have personnel data for all years. Column (1) estimates a local linear regression using the optimal bandwidth based on [Calonico et al. \(2017\)](#), while Columns (2) and (3) used bandwidth of 5 and 2.5 percentage points, respectively. p.p. = percentage points. Mean D.V. shows the mean of the dependent variable among lists from the party of the runner-up in the mayoral race. Heteroskedasticity-robust standard errors. ***p<0.01, **p<0.05, *p<0.1. *Source:* Data from the National Electoral Council and municipalities' official personnel lists.

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A | APPENDIX. ADDITIONAL FIGURES AND TABLES

TABLE A.1 Classification of Occupations

Rank	Category	Examples (job titles)	Avg. monthly income (USD)	N (2015)	N (2016)	N (2017)
	Laborer	Chauffeur, security guard, street cleaner	547	24	28	20
Low-ranking	Assistant	Secretary, administrative assistant	575	55	64	54
	Low-skilled analyst	Technical assistant in procurement, accounting assistant	898	33	37	40
High ranking	Highly skilled analyst	Coordinator of cultural promotion, coordinator of planning	1,448	32	31	34
	Director	Director of public works, director of human resources	2,297	16	18	23
Unclassified	-	-	-	6	8	2

Notes: The first and second columns indicate how we categorized low- and high-ranking municipal employment, while the third column shows examples of the job titles listed in the personnel reports associated to each occupation category. The fourth column has average monthly wage in each occupation category, while columns fifth to seventh show the number of non-elected candidates to the municipal council employed in each category in 2015, 2016 and 2017, respectively.

Source: Data come the National Electoral Council and municipalities' official personnel lists.

TABLE A.2 Summary Statistics: Candidates from Winning and Runner-up Parties in the 2014 Municipal Elections, in Alternative Bandwidths

	(1)	(2)	(3)
	10 p.p.	5 p.p.	2.5 p.p.
Panel A. Candidates to the Municipal Council			
Non-elected candidates (N)	1,388	822	452
In winner party (%)	48.4	49.1	49.6
Candidate in 2009 election (%)	7.9	8.3	8.2
Incumbent (%)	2.7	2.7	2.9
List order (#)	2.8	2.9	2.8
Votes (#)	3,821.1	3,216.6	3,207.2
Municipal employee post 2014 election (%)	10.7	11.3	12.6
Females (%)	50.0	49.9	49.8
Age (years)	40.3	40.4	39.7
Has university degree (%)	34.4	32.8	33.6
Panel B. Candidates for Mayor			
Winner and runner-up candidates (N)	192	114	64
Candidates in 2009 election (%)	50.5	48.2	50.0
Incumbents (%)	24.0	19.3	20.3
Votes (#)	9,031.9	6,721.7	6,768.0
Female (%)	11.5	7.9	7.8
Age (years)	48.2	48.6	48.2
Panel C. Municipalities			
Number of municipalities (N)	96	57	32
Population size	43,871.6	36,252.5	36,783.4
Female population (%)	49.6	49.5	49.8
Average years of education	7.7	7.8	7.7
Population Below poverty line (%)	77.1	76.0	75.1

Notes: The table present the means of characteristics of candidates to the municipal council (Panel A), candidates for mayor (Panel B) and Municipalities (Panel C). Column (1) reports statistics for the sample of elections decided within a margin of victory of 10 percentage points (p.p.), Column (2) of 5 p.p. and Column (3) of 2.5 p.p. All samples are restricted to municipalities for which we have personnel data in at least one year. *Source:* Data from the National Electoral Council, municipalities' official personnel lists, the National Register of Higher Education Degrees and the 2010 Population Census.