My Guys: The Impact of Political Turnover on Municipal Public Procurement

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Abstract

This paper examines the impact of a new political party's arrival in local power on public procurement and municipal performance in Colombia. Using a regression discontinuity design based on close elections from 2011 to 2019, I find an increase in the hiring rates of new discretionary public personnel through temporary contracts. The magnitude of this effect varies according to the level of poverty. Additionally, contractor wages face an adverse effect, particularly for those employed within the previous government. These findings highlight the excessive use of discretionary contracting practices and their effect on the quality of jobs. However, there are no effects on the short-term's municipal performance.

1 Introduction

When a political party is elected, it hires officials to perform specific tasks. They are responsible for shaping the structure of the public sector; therefore, they play a crucial role in government performance. Hence, it is essential to understand the selection process of public personnel (Finan et al. 2015). Some literature emphasizes two approaches to personal selection: competitive and discretionary. Both coexist, but the extent of each differs between countries (Evans and Rauch 1999). For instance, in the United Kingdom, the minister or Secretary of State personally selects a limited number of political appointments within each ministry, and the interaction between political leaders and administrators primarily takes place between the minister and a single career civil servant. In contrast, in many Latin American countries, the hiring system is decentralized, with local governments assuming the role of selecting civil servants at their discretion. Although discretionary hiring has advantages, such as selecting motivated and trusted employees for politicians, it also leads to clientelism and political patronage, creating a relationship between politics and bureaucracy.

Considering the situation when a new political party assumes *de jure* power (political turnover), it is common to have politically motivated replacements, particularly in a government with significant influence over the bureaucracy. Hence, personnel recruitment mechanisms are crucial to determine the profile of individuals joining the public sector and the possible implications for the provision of public services.

In this paper, I examine the impact of political turnover (measured as a new political party in the mayor's office) on public personnel procurement and its subsequent effects on municipal performance in Colombia. Local governments represent an interesting study case, as they are responsible for managing and providing their public resources (including personnel hiring). Furthermore, implementing public procurement regulations in 2007 led to discretionary and temporary contracts becoming the primary method for conducting hiring processes. This approach is cost-effective compared to establishing full-time positions and facilitates their inappropriate use without government control.

To study the causal effect, I employ a Regression Discontinuity Design (RDD) that leverages close elections as an exogenous source of variation in the rotation of political parties for the mayoral position. Using data sets on public sector contracts and electoral data from 2011 to 2019 for Colombian municipalities, I find that a narrow victory of a new political party leads to a 64% increase in new discretionary personnel appointments compared to municipalities where the incumbent party remained in power. The personnel movements occur during the first year after the new mayor takes office and reflect the net growth of municipal personnel. New hires are robust and similar in magnitude around contract terms; it suggests excessive use of temporary contracts for permanent positions among new individuals with discretionary contracts exceeding one year.

To better understand public procurement, I explore two heterogeneous scenarios. Firstly, I categorize the sample into quartiles according to the municipal nbi (unmet needs index) as a measure of municipal poverty. I find a significantly higher level of discretion in poorer municipalities relative to wealthier ones. I interpret this disparity as a result of a trade-off between discretionary contracting and the legal and social costs involved. Secondly, I test the case when the winning political party or a party from the winning coalition aligns with the president's, I do not find a significant differential effect, which implies that discretionary appointments are driven by local interests.

Moreover, using contract-level data sets, I demonstrate that a new political party in the mayoral position leads to a 22% reduction in personnel wages within the municipality. This adverse effect is more pronounced among longstanding employees as opposed to newcomers. Finally, I employ health and educational indicators as measures of municipal performance. My findings do not indicate significant differences. I attribute this to the widespread prevalence of temporary contracts.

This paper is related to literature that studies the role of the State in its internal operations (Ashraf and Bandiera 2018). I focus on the selection process in the public sector

(Lewis 2011; Xu 2018; Marx et al. 2022), at the municipal level (Folke et al. 2011), in developing countries (Iyer and Mani 2012; Colonnelli et al. 2020) denoted by a weak institutional structure that motivates corrupt practices (Olken and Pande 2012). I contribute by showing in a casual analysis that weakness in public procurement regulations can create situations where personnel entry at all levels of the public sector occurs through non-competitive processes and temporary contracts. It distorts the size of the workforce and job monitoring, as it is challenging for regulators to determine effectively whether somebody on a temporary contract is performing permanent tasks and at what hierarchical level they are. My results reveal the incentive to create poorly paid positions essential for the proper functioning of the municipality. Moreover, they encourage the study of patronage practices in Colombia to show the extent of the relationship between political connections and public job assignment. This paper is also related to literature that analyzes the efficiency of bureaucracy (Rauch and Evans 2000; Dal Bó et al. 2013; Bhavnani and Lee 2017) and how it affects the provision of public services (Finan et al. 2017), such as education (Akhtari et al. 2022; Fagernäs and Pelkonen 2020) and healthcare (Barbosa and Ferreira 2019; Forquesato 2022). I contribute by using the transmission channel that arises between hiring personnel and their job quality to provide additional evidence of how discretionary selection can influence governmental performance.

The rest of the paper is structured as follows: Section 2 provides information on institutional hiring and the Colombian electoral context. Section 3 describes the data, the sample selection, and the main variables summary. Section 4 outlines the empirical strategy and identification assumptions. Section 5 provides the main findings. Section 6 explores the causal effect considering the hiring structure in Colombia. Section 7 analyses the municipal performance. Section 8 concludes.

2 Context

For a more comprehensive grasp of the Colombian context, this section describes relevant characteristics of local elections and the political party landscape. It also narrates the evolution of personnel hiring by public entities.

2.1 Local elections and political parties

In Colombia, the mayors of a municipality are elected by popular elections every four years in October. The winner starts his term on January 1st of the following year and cannot run for re-election during the next electoral cycle. In recent years, the number of mayoral candidates supported by coalitions of political parties has increased. In 2012, only 3% of municipalities had a coalition mayor, but by the 2019 elections, this percentage had increased to 46% [1]. Consequently, it shows that Citizens do not feel that political parties represent them and instead consider other factors, like the candidate's qualities when deciding. This fragility highlights the need to study contracts when there is a political turnover to assess the potential partisan influence in this context.

2.2 Public sector recruitment

Individuals can join the public sector as a public employees, defined as a type of civil servant the State and its decentralized entities hire. An objective selection process determines their appointment and permanence, involving recruiting candidates with the qualifications to perform the available position based on their merits. However, it is also possible to have a relationship with the State through a service contract (*Opción o contrato por prestación de servicios - ops*) to perform activities related to the entity's operation. According to *Departamento de función pública*[2] given that this type of contract is temporary, it must be considered exceptional and must not be used for the permanent performance of public functions to avoid the distortion of the state procurement.

[1] own calculations from election results provided by CEDE

[2] Is the national entity in charge of managing the public servants in Colombia

The Colombian Congress passed Law 1150 of 2007 to improve the efficiency of public contract execution. This law allowed discretionary ops contracts, eliminating applicants' requirement to participate in tenders, public calls, or merit-based competitions. Implementing this law led to an increase in procurement through this modality. Figure 1 plots the evolution of signed ops contracts since 2007 from the Colombian electronic system of public procurement (SECOP). This type of contract has become relevant over the years, especially with discretionary contracts: over 80% of ops contracts in 2022 were assigned directly. The fact that any public entity contract can be carried out through an exceptional modality (discretionary appointment) is attributable to the individuals who perform the majority of activities resulting from contracts. Therefore, this mechanism could be used to perform all of them.

An incentive for municipalities to benefit from ops contracts arises from Law 617 of 2000, which establishes that unrestricted current income (ICLD) must finance the operating expenses of territorial entities. Furthermore, the growth of these expenses must not exceed 90% of the inflation rate in 2005, and they must not increase in real terms. Consequently, this law places a constraint on the hiring of personnel. However, Law 1150 of 2007 allows municipalities to circumvent the restrictions on operating expenses, enabling them to overcome the limitations on personnel hiring. Instead of relying solely on funds from the ICLD, municipalities can utilize other sources such as investments or their resources for an ops contract (Bernal et al. 2017).

Given that an ops contract is temporary, it is subject to specific regulations, including the full payment of retirement contributions (full-time officials only pay 75%), leading to more cost-effective hiring without limits and control from regulatory agencies. Therefore, it facilitates discretionary hiring of temporary personnel who perform tasks equivalent to permanent positions in the entity, and the continuity of their employment depends on constant renewals (Zuleta and Caro 2020).

3 Data

3.1 Public Contracts

The information on public procurement comes from the Electronic System for Public Procurement (SECOP), which stores transactions from public entities. The data is collected daily, facilitating the extraction of contract durations. Although SECOP was under the Law 1150 of 2007, since 2011, the platform has experienced significant activity. For this analysis, I consider for intertemporal tracking, individuals who have signed a service contract with a municipal entity (centralized or decentralized) and have a registered national identification number (cédula de ciudadanía)[3]. Based on these conditions, there are a total of 839,135 individuals[4] who have signed at least one contract until 2022.

According to Zuleta and Caro (2020), an individual can sign an ops contract for the same entity more than once. Therefore, it is possible the case of an employee who has worked for the public entity for more than a year but constantly signs a new contract each time it expires. To track a worker's real-time office, I merge the contracts signed by an individual for a specific municipal entity; if the difference between the end date of the contract and the signing of the next one is less or equal to one year, I group these contracts into one "real" contract, see appendix Figure A,1.

Finally, I create a municipality-electoral level database containing contractual information. The main dependent variables of the identification strategy are the number of new personnel and those who do not renew their contracts in the first year after the elections. The same variables are also available for subsequent government periods and an overall count for robustness. Since a municipality has the authority to hire or dismiss zero individuals, and due to heterogeneity in the degree of contracting across municipalities, I apply the Inverse Hyperbolic Sine Transformation ($asinh$) for a more comprehensive interpretation. I also include the total amounts spent on new personnel per municipality and the share of new

[3]Contracts without identification represent less than 1% of the sample.
[4]including electronic contracts recorded in SECOP II

discretionary personnel relative to the new hires

In addition, I use another data set at contract level, which contains the salary in real prices[5] of each signed contract in Colombian pesos. This data allows me to test the effect of political turnover on payments of new and current municipal staff appointed by discretionary ops contracts. As each municipal entity is responsible for filling out the information of their respective contracts in the SECOP platform, it is subject to human error, then accounts for contracts with a zero value, which are subsequently removed[6]. Amounts are in logarithm transformation.

3.2 Electoral Data

Center for Economic Development Studies (CEDE) provides electoral results for mayoral elections in the years 2011, 2015, and 2019[7] and is available for 1102 municipalities. With this information, it is possible to determine the party (or coalition) the candidate represents, vote shares, and the municipalities where the incumbent political party had a candidate during the elections. These variables are vital to constructing the running variable and treatment group.

3.3 Municipal performance

In order to examine the economic impact, it becomes necessary to consider a variable that directly reflects the work of the municipality and the provision of public goods. Public service areas such as health and education depend on territorial public resource investment (Alesina et al. 2005), so changes in the public personnel could influence the provision of public goods. Thus, I use the share of individuals between 5 and 16 years old attending the education system[8] from the Ministry of Education and the health coverage rate from the Ministry of Health, it is calculated as the share of individuals enrolled in contributory and subsidized healthcare schemes. I included those variables on the municipality-electoral level database.

[5] at 2018 prices
[6] As in the case of contracts without contractor id, it represents less than 1% of the sample.
[7] Information is available from 1998, but SECOP has data starting from 2011
[8] This age range represents the average years a person spends in basic or secondary education.

3.4 Sample election

For this paper, the incumbent party of the municipality must participate in subsequent elections. Table A,1 of the appendix shows the number of municipalities for each electoral period where the incumbent party wins or gets second place. I do not consider the case where the incumbent party runs and wins the elections in coalition with another political party. More supporters for the incumbent imply new political connections, which could influence the real impact of a true challenger. The sample has 406 municipalities for the 2011 elections, 407 in 2015, and 237 in 2019. The number of municipalities where the incumbent party either won or was the runner-up at any time during the sample period are 682, which represents 62% of all Colombian municipalities. Although this scenario is relatively standard, it has decreased with the arrival of coalitions and candidates by signatures[9]. Of the whole sample, 39% of municipalities often experience close elections in the subsequent election cycle. This scenario may be due to the influence of the traditional parties in some municipalities. Still, since the proportion is not high enough, there is no need to concern these results to a time-invariant characteristic.

Table 1 presents descriptive statistics of the main variables. On average, the number of leaving ops personnel is higher than new discretionary personnel. This feature is common because I do not consider the new non-discretionary ops personnel and is ordinary to be a substantial rotation of personnel due to elections. The average of the Share new discretionary personnel indicates that a significant part of the newly hired personnel by ops is discretionary (0.713), representing a substantial amount of the Municipality's total expenditure (0.077). On average, municipalities have high Health and Education coverage rates; values exceed one due to migratory flows. Finally, the Discretionary amounts exhibit considerable variability, highlighting the use of ops contracts for a wide range of municipal tasks.

[9]candidates by signatures are defined as Grupos Significativos de Ciudadanos(GSC)

4 Empirical strategy

In order to estimate the effect of a change in the political party in power on public procurement and municipal performance, I use Regression Discontinuity Design (RDD). This section outlines the identification strategy to be employed and the conditions that support its use.

4.1 Identification strategy

Given that I want to observe the causal effect of political rotation, I only consider municipalities whose incumbent party wins or comes second by a small margin, commonly referred to in the literature as *close elections*. This selection criterion ensures that party turnover is as good as random. To deal with the trade-off between efficiency and bias, I calculate the optimal bandwidth for the regression discontinuity design according to Calonico et al. (2019) methodology. The following equation represents the empirical strategy to be employed:

$$Y_{m(t+1)} = \alpha + \beta_1(MVI_{mt} < 0) + \beta_2(MVI_{mt}) + \beta_3(MVI_{mt} < 0) \times (MVI_{mt}) + X_{mt}\Lambda + e_{mt} \quad (1)$$

Where $Y_{m(t+1)}$ represents the outcome variable in municipality m during year t (which corresponds to the election year 2011, 2015, or 2019). The running variable, MVI_{mt}, is defined as the incumbent vote party margin in the upcoming elections; it is measured as the difference between the vote share by the incumbent party and the vote share by the strongest challenger party. The treatment variable takes a value of one when the challenger wins the elections against the incumbent party ($MVI_{mt} < 0$), which means a political turnover in the municipality. X_{mt} is a covariates vector that controls municipal characteristics and includes electoral fixed effects. To estimate heterogeneous treatment effects, I employ the following OLS specification[10]:

[10]The sample for this regression is defined by the optimal bandwidth.

$$Y_{m(t+1)} = \alpha + \beta_1(MVI_{mt} < 0) + \beta_2(Heterog_{mt}) + \beta_3(MVI_{mt} < 0) \times (Heterog_{mt}) + X_{mt}\Lambda + e_{mt} \quad (2)$$

4.2 Identification assumptions

The empirical strategy relies on several assumptions for its proper implementation. Firstly, to establish that the change in public procurement is solely attributed to the rotation of political parties, it is compulsory to demonstrate that other covariates, besides the treatment, vary smoothly around the threshold. Table 2 presents each municipal characteristic used as the dependent variable in Equation 1, and Column 4 indicates the estimated coefficient of $(MVI_{mt} < 0)$. No significant differences exist for any covariates between the control and treatment municipalities.

Moreover, another crucial assumption is the absence of manipulation of electoral outcomes around the threshold. Figure 2 displays the distribution of the incumbent party's margin of victory (running variable). There is no pronounced discontinuity around the cutoff point. A formal test, following Cattaneo et al. (2018), confirms that the distribution around the cutoff is continuous and the null hypothesis cannot be rejected

Given the high temporary and discretionary hiring of public personnel under a political turnover, I hypothesize that ops contracts are employed to bring in new staff. In other words, the municipality faces additional discretion, which can harm its performance.

5 Main Results

5.1 Baseline results

Table 3 reports the effect of political turnover on municipal personnel turnover. Panel A shows the number of discretionary new personnel; Panel B exhibits the number of personnel

who left the municipality. Both variables are measured for the year following the elections and present the inverse hyperbolic transformation. Columns 1 and 3 include no controls; Columns 2 and 4 include municipal controls and electoral fixed effects; Columns 1 and 2 use linear polynomial specification; Columns 3 and 4 use quadratic polynomial specification. All estimates use the optimal bandwidth following Calonico et al. (2019). In both panels, no control cases report a vastly significant effect. With the inclusion of covariates and election fixed effects, the coefficients remain positive although the effect decreases in magnitude. Panel A estimations with covariates remains statistically significant on linear specification. Quadratic case tends to be slightly noisy (the p-value in Column 4 is 12%). Whereas in Panel B, the effect is positive, it is not statistically significant for any of the specifications.

The election of a new political party leads to an increase in the number of new discretionary public personnel from 61% to 68 % of the control group mean the year following the elections. The effect on personnel who did not renew their contract is not statistically different from zero; this indicates a net increase of personnel with ops contracts hired by discretionary methods. Figure 3 illustrates these findings based on lineal polynomial case with controls. There exists a significant difference in the variable of new contractors. I perform the remaining analyses using the smallest optimal bandwidth obtained (0.14) to ensure comparability and maintain the same municipality sample in the analysis.

The results may be due to the sample section, figure 4 panel A, shows the coefficient β_1 of equation 1 including controls and linear polynomial stats, with 90% confidence interval using different bandwidths. The new personnel impact is still positive and significant in highly contested elections (bandwidth of 0.07) and those not as competitive (0.19).

Moreover, it is essential to rule out whether trends in public personnel hiring processes in previous years correlate with political turnover. Figure 4 panel B plots for several bandwidths (0,07 to 0.19) the effect of the challenger party's victory on new discretionary municipal personnel in the year of elections. All estimates are statistically insignificant.

Table 3 is weighted by the local population, aiming to consider the size of municipalities related to the size of the public sector and, thus, the degree of staff turnover at election times. For robustness of the results, appendix Table A,2 uses an alternative hiring measure; it suggests that a political turnover leads to an additional 211 to 216 new discretionary ops personnel per 100,000 inhabitants in the first year of government. These magnitudes are equivalent to 37% and 38% of the outcomes mean and standard deviation of municipalities where the incumbent party continues in power. Personnel who left remains insignificant.

5.2 Period of government

So far, I demonstrated an increase in new discretionary ops personnel in the new government's first year. However, it is necessary to analyze the hiring dynamics of the remaining years of government. Table 4 indicates the effect of political turnover from the second year (column 1) until the year of the next elections[11] (column 3). Although none of the magnitudes are significant, the number of new hires (panel A) exhibits a downward trend when a new political party is in power. During the second year, the effect decreases substantially until it becomes negative for the next election. For the case of outgoing workers (Panel B), estimates point to similar behaviors. Ultimately, using the total period of governance (Table 5), it is possible to observe positive but non-significant effects for both variables, considering all controls with linear and quadratic polynomial models. Based on the results explained throughout this section, this outcome is expected and reinforces the notion that new hires tend to occur during the first year.

6 OPS contracts: A public employment alternative

This section explores the causal effect by considering the structure of the ops contracts in a discretionary context. First, I examine split results by contract terms. Then, I explore

[11]This work was carried out with information up to December 2022, and then there is no information on hiring for the year 2023. Therefore, I analyzed the last year of government for the mayors elected in 2011 and 2015

potential situations where discretion may be more prevalent, to understand better how this type of contracting operates and the reasons behind it. Finally, I analyze the contract wage amounts to identify any relationships with political turnover.

Table 6 reports the effect of political turnover on personnel turnover by contract terms. All estimates are positive for new discretionary ops municipal personnel (Panel A). Column 1 represents three-month contracts (64%), column 2 contracts from 3 to 9 months (68%), column 3 contracts from 9 to 12 months (22%), and column 4 contracts longer than one year (57%). The coefficient's magnitude is similar between groups, except for column 2, which is the only non-significant effect. No effect is relevant for the outgoing personnel (Panel B), giving robustness of no additional effect in the number of leaving personnel when political turnover occurs.

The election of these term groups is not arbitrary, Zuleta and Caro (2020) argues that ops contract terms could depend on the employee's role/responsibilities. In particular, contracts up to 3 months correspond to temporary work contracts or political favors, given that the municipality does not expect compensation from the contractor. However, with the information provided thus far, ensuring that the additional effect is attributable to political connections becomes difficult. The reason for creating Discretionary ops hiring is to simplify and expedite the contracting process (Pabón et al. 2021). Appendix table A,3 shows the additional effect on the number of contracts besides ops (construction and supply represent more than 50% of the sample), revealing an additional increase of 42% to 49% on signed contracts. It is common for the execution of this type of contract to require the hiring of temporary personnel. Therefore, the discretionary use of ops contracts lesser than three months to carry out all other contracts is feasible.

Contracts between 6 to 9 and 9 to 12 months belong to the public entity's operating contracts. Finally, contracts exceeding 12 months are generally used on individuals to perform permanent work within the municipal entity. An additional positive effect on the discretionary appointment of this type of contract implies that the new government hires new

permanent employees through discretionary and temporary methods; for new discretionary individuals in the treatment group who worked more than one year in the municipality, the number of contracts used exceeds the total number of employees by 80%. Contract renewal is the mechanism for public servant permanence. This phenomenon leads to avoiding contracts that provide the new contractor with health and welfare programs, thus concealing the existence of an employment relationship. Figure 5 illustrates the effect using a linear polynomial. Figure 6 shows the main findings on discretionary appointments for more than one year (from now, referred to as *ops permanent appointments*). For a 95% confidence interval, point estimates remain significant with different samples (Panel A), and there is no relation with the election year preexisting trends (Panel B).

Furthermore, Analyzing how the increase in new discretionary staff alters ops contract dynamics is essential. Table 7 indicates the share of new discretionary ops contracts of total new ops contracts. A positive but statistically insignificant effect exists for the contract groups and the overall measurement. Additionally, the control group's shares are overall high (0.55 to 0.80), and for the case of permanent ops appointments, the effect tends to be negative and small (-0.008), which validates the assertions of section 2; all territorial entities have exploited Law 1150 of 2007 to engage in discretionary temporary contracts, particularly during periods of political turnover, as evidenced in this paper.

6.1 Heterogeneous effects

Some literature shows that income could influence discretionary hiring behavior (Bursztyn 2016; Akhtari et al. 2022). In order to test this in the context of political turnover in close elections, I use the index of unsatisfied basic needs (NBI) provided by DANE's 2005 census. This index measures the proportion of the municipality that does not reach the minimum satisfaction threshold of certain basic needs: access to housing, access to sanitation services, access to education, and economic capacity. As I intend to compare the heterogeneous effects between a poor municipality and a wealthy one, I divide the sample (bandwidth of 0.14) in

quartiles[12], the first quartile refers to the municipalities with lower basic needs (less poor), in contrast, the last one represents the poorest municipalities. In order to draw a correct group comparison around the causal effect, I use equation 2 while considering the dummies and interactions of the variable in quartiles (the first quartile is the reference group). I use the number of new ops permanent appointments group as the dependent variable since it comes the one that better exposes the excessive and incorrect use of this type of contract.

Table 8 shows no treatment effect on less poor municipalities. Nevertheless, the estimated interaction coefficient is positive and significant. In addition, I reject the null hypothesis that the effect of political turnover in poorer municipalities is zero (p-value of 0.000 and 0.010), which suggests that the population's quality of life plays a crucial role in determining discretion levels. In Colombia, politicians face a trade-off when they discreetly hire someone through ops: They achieve political utility with lower costs for the municipality but risk being vulnerable to legal actions and contractual liabilities. Municipal regulatory bodies explain the cost of doing it; if an individual with a temporary contract is doing permanent staff duties, he may invoke a legal concept known as *contrato realidad*, which involves declaring the existence of an employment contract between the public entity and the individual. Consequently, this leads to the payment of social benefits and other administrative consequences that directly impact the municipality's fiscal performance and public perception. Hence, a poor individual may be more inclined to accept a contract regardless of its conditions and less willing to go to the authorities for irregularities in the contract. One possible explanation lies in the adversity to retaliation by the public entity, given the economic fragility of the worker coupled with the ineffectiveness of the regulatory agencies.

Appendix table A,4 employs equation 2 incorporating the case where the winning political party or a party from the winning coalition aligns with the president (same party). Remarkably, the treatment's estimated point exhibits minimal deviations. The dummy variable denoting the shared party affiliation between the local and national levels, alongside its

[12]The entire sample was not used because figures 4 and 6 demonstrated that the results are hale considering more competitive elections, which provides external validity.

corresponding interaction coefficient, has a discernible positive effect. This finding implies that municipalities capitalize on the association between the national and territorial spheres regardless of political turnover. Partisan pressures or political cohesion could explain this; however, it is crucial to acknowledge that this effect lacks robustness. Upon delving further into the implications for municipalities characterized by such power dynamics, the persistent disparity caused by political turnover remains statistically significant. Notably, by employing a linear polynomial, the additional effect corresponds to a substantial 67% (p-value of 0.04). Consequently, these findings suggest that local interests effectively drive the discretionary hiring practices concerning new ops permanent personnel.

6.2 Contract amounts

When an individual enters the public sector through an ops contract, the municipality bears the financial burden. Now, given the alterations in the hiring landscape in the light of a new political party coming to power, and the flexible room for maneuver in determining the remuneration terms of a new contract, it becomes of particular interest to examine the possible modifications that may arise, along with the consequent implications they may engender.

Table 9 shows the effect of political turnover on municipal expenditure on discretionary appointments by contract groups and overall measurement[13]. As reported, there is no statistical effect on the point estimates. However, these results are not consistent with the main findings of this paper, as an increase in public personnel, ceteris paribus, would imply an increase in municipal expenditure. The coefficient for longer-term groups is negative (-0.016 and -0.05). For enhanced comprehension of this phenomenon, I perform a contract-election level analysis for all individuals under a discretionary ops permanent contract in the year following the elections. Table 10 presents the results of equation 1 using the new database[14]. Column 1 indicates that when a new political party assumes the mayor's office, it harms workers' salaries, meaning that contract amounts are 22% lower. It can be attributed to

[13]Both contract amounts and municipal expenses are deflated to 2018 prices.

[14]As an individual can sign more than one contract in a year, standard errors are clustered by individual

the causal effect, as there was no such difference in the election year (column 2). These findings suggest that with an increase in temporary workers performing permanent duties, salaries experience a detrimental effect (for fiscal efficiency), which is consistent with public entities' preference for using ops contracts. Since these individuals are not considered public officials, they are not subject to fixed salary regimes, so the entity has the absolute authority to determine the contract wage amount.

Since the analysis considers new and old contractors (those present for previous years and remain in the municipality), it is essential to differentiate the effect on them. The point estimates of Table 11 show the additional effect of being a new discretionary ops contractor, using a linear and quadratic polynomial. There is an additional negative effect in the group of long-standing active employees, but the interaction coefficient is positive (31% to 32%) and highly significant. This indicates that political turnover harms wages but to a lesser extent on incoming workers (significant effect from -18% to -26%). One explanation consists of higher amounts for new workers. However, the salaries of those already employed remain intact, and the difference from Table 11 is structurally consistent over time due to sample-related issues. Figure A,2 from the appendix shows the effect in the election year, considering only discretionary ops permanent workers were active in the election year and the following year. Using different bandwidths at a 95% confidence interval, I show no statistically significant difference between treated and control groups. Hence political turnover causes a decrease in salaries for workers employed since the previous government.

In consequence, evidence suggests that when there is a large influx of new discretionary personnel, the biggest loser is the personnel of the previous government who are still in the municipality; this supplies evidence of the advantages of the ops contract on municipal finances, enhancing the previously stated hypothesis. However, it is compulsory to take these results with caution; a person who enters the public sector through a service contract does not enter a public position. Hence, for this analysis, there is salary heterogeneity; It is impossible to split across hierarchical work levels since I take the entire pool of workers.

7 Municipal performance

In order to explore the consequences of political turnover on the provision of public services, Table 12 and Table 13 show the effect on the share of individuals between 5 and 16 years old and health coverage rate, respectively, for the first year after the elections (column 1) to the last governmental year which coincides with a new election process (column 4). Results show a small and non-significant effect on the estimates. Overall, as the discretionary contracts of ops have become a structural feature, they have been observed as a widespread practice across all municipalities, making it the typical way for a person to enter the public sector, regardless of their preparation or whether they enter for patronage reasons.

8 Conclusion

In this paper, I study the impact of political turnover on Colombian municipal bureaucracy. Using a data set on public sector contracts over the elections 2011 - 2019, I notice a net increase of discretionary personnel through ops contracts (*Orden o contrato de Prestación de Servicios*) when the mayor's political party changes. This phenomenon occurs in both temporary and permanent positions. I demonstrate that the magnitude of this effect depends on the income factors of the municipality. While there is no additional discretionary hiring in wealthier municipalities, the effect is distinctly outstanding in poorer ones.

I also exhibit that political turnover deteriorates public personnel's salaries, especially in on-duty individuals hired by the previous government, suggesting a supporters runner-up "punishment" (Fafchamps and Labonne 2017). Finally, despite the impacts on public hiring, there are no changes in the provision of municipal public services (education and healthcare) in any of the years of government under the new political party.

Political turnover can be attributed to unrestrained new appointments, as evidenced by this study, in contrast to cases where the ruling political party remains in power. These findings have two key implications: First, it highlights the increased public employment distortion through government policies promoting discretionary hiring, which has transitioned

from an exceptional practice to a well-known norm. Such practices involve contracts that benefit public entities but adversely affect the workers' well-being regarding labor welfare. Second, it increases the likelihood of favoritism in allocating public positions and raises concerns about the effective allocation of resources.

Consequently, it is necessary to assess the effects and mechanisms of discretionary hiring on the quality of the workers and, more comprehensively, on the quality of public services. Furthermore, these analyses are conducted in the short term, so evaluating the long-term effects of the ops contract is pertinent.

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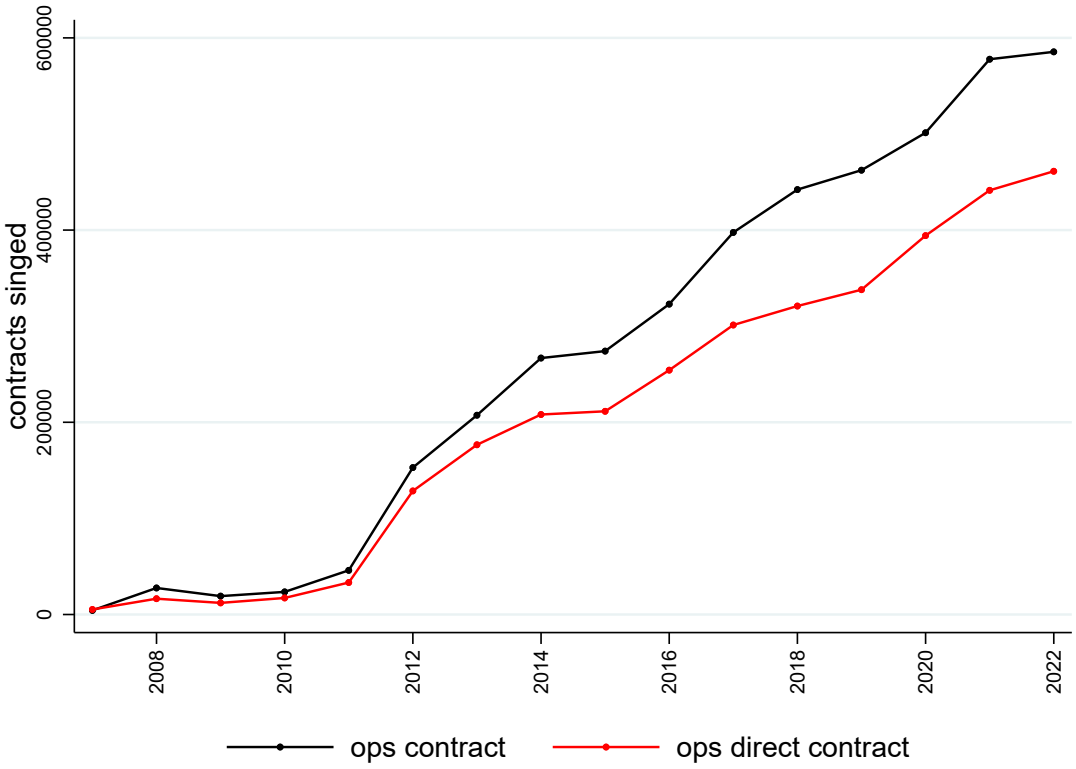
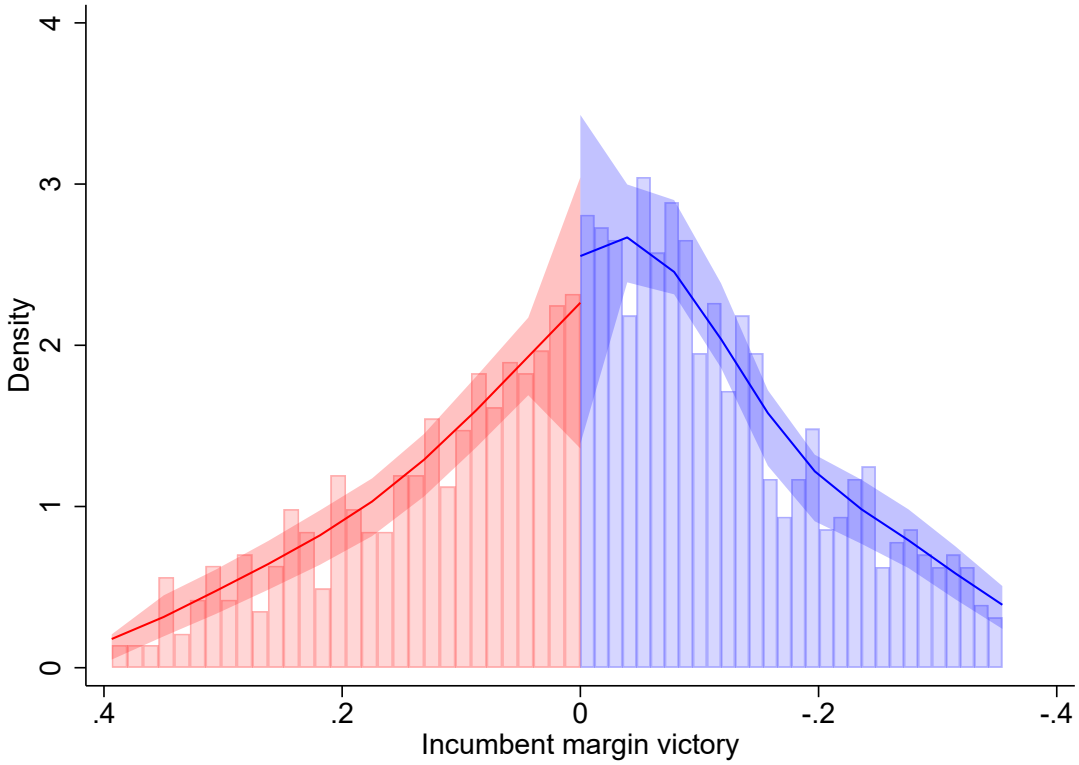
Figure 1: **Evolution of temporary contracts**



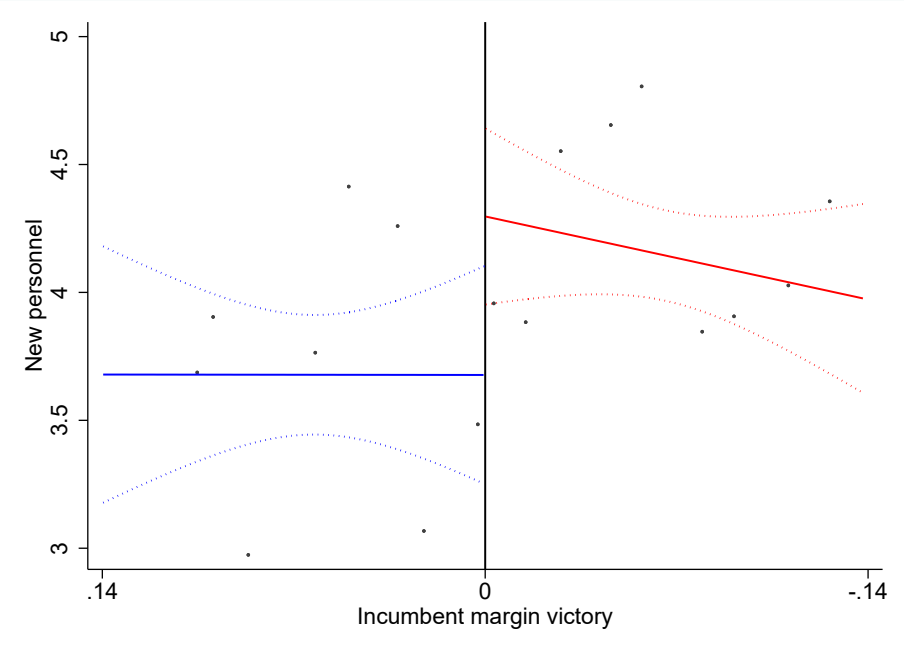
Notes: The figure shows the number of service contracts (Orden de Prestación de Servicios - ops) signed from 2007 to 2020. Own elaboration with data from Colombia Compra Eficiente.

Figure 2: **Manipulation test**



Notes: According to the Cattaneo et al. (2018) test, with a p-value of 0.76 for the null hypothesis of continuity in the distribution around the cutoff.

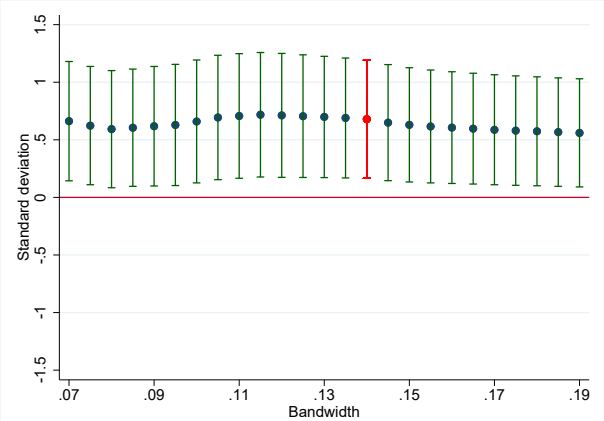
Figure 3: **Political turnover and new discretionary personnel**



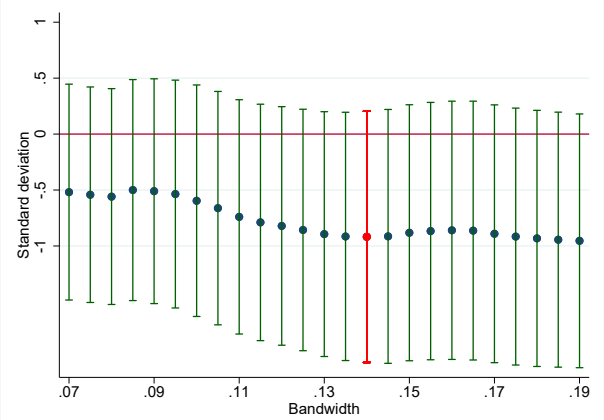
Notes: Robust estimates, election fixed effects, controls and linear polynomial case. Calonico et al. (2019) optimal bandwidth (0.14)

Figure 4: **Political turnover and new discretionary personnel: Analysis across bandwidths**

((a)) first office year

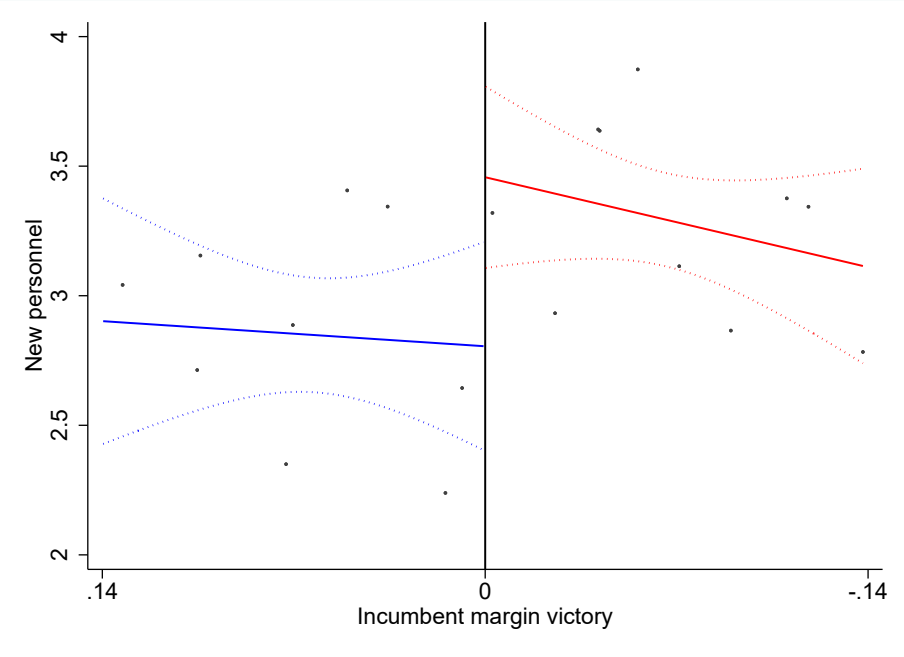


((b)) elections year



Notes: Vertical lines represent confidence interval of point estimates. Robust estimates, election fixed effects, controls and linear polynomial case. Solid vertical Red line indicates. Confidence intervals at 90%. Calonico et al. (2019) optimal bandwidth (0.14).

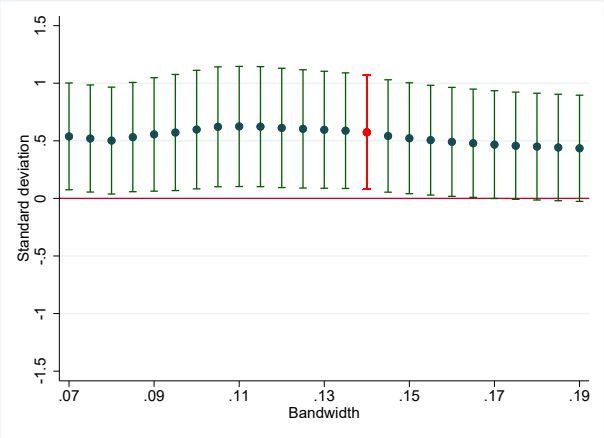
Figure 5: **Political turnover and ops permanent appointments**



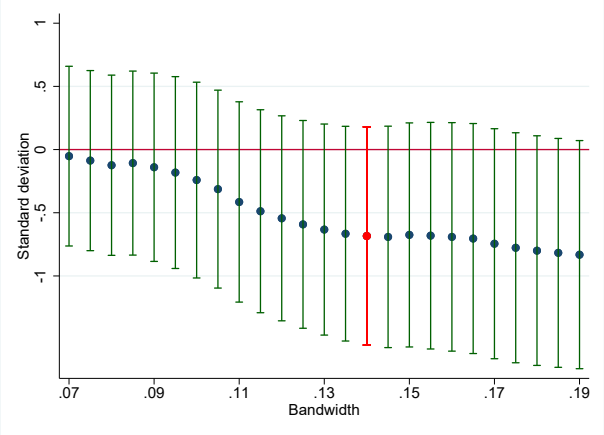
Notes: Robust estimates, election fixed effects, controls and linear polynomial case. Calonico et al. (2019) optimal bandwidth (0.14)

Figure 6: **Political turnover and ops permanent appointments: Analysis across bandwidths**

((a)) first office year



((b)) elections year



Notes: Vertical lines represent confidence interval of point estimates. Robust estimates, election fixed effects, controls and linear polynomial case. Solid vertical Red line indicates. Confidence intervals at 90%.

Table 1: **Descriptive Statistics of main variables**

Variable	Mean	Standard Deviation	Obs	Minimum	Maximum
New discretionary ops personnel	70.553	134.669	1050	0.000	2209.000
Ops personnel who left	108.844	246.334	1050	0.000	4480.000
Share new discretionary personnel	0.713	0.325	1050	0.000	1.000
Share discretionary contracts amount	0.077	0.072	1050	0.000	0.608
Health coverage rate	0.831	0.153	1050	0.263	1.710
Net enrollment rate	0.841	0.186	1050	0.207	2.665
Discretionary contract amount	12,000	19,000	182,673	580	210,000

Notes: Main variables summary statistics of sample selection of the first year of the new municipal government. All outcomes are in levels. New discretionary ops personnel counts the number of discretionary new personnel appointed by *contrato por prestación de servicios*; Ops who left counts the number of personnel assigned by *contrato por prestación de servicios* until the year of elections who doesn't continue in the municipality; Share new direct personnel is the proportion of discretionary new personnel of all new hires by *contrato por prestación de servicios*; Share direct contracts amount is the municipal expenditure on discretionary appointments; Health coverage rate measures the share of individuals enrolled in contributory and subsidized healthcare schemes; Net enrollment rate measures the share of individuals between 5 and 16 years old attending the education system; Discretionary contracts amount is the amount paid by the municipality for the services of the contracted individual, this variable is shown in thousand of Colombian pesos and 2018 real prices.

Table 2: **Effect of political turnover on municipal characteristics**

Dependent Variable	Mean	Standard Deviation	Political Turnover	Std. Error.	Obs	Bandwidth
Population (log)	9.439	0.977	-0.071	0.194	581	0.124
Rural index	0.587	0.232	0.039	0.048	525	0.109
Number of candidates	4.230	1.701	0.213	0.311	721	0.170
Altitude (log), mt	6.214	1.808	0.451	0.407	641	0.140
Distance to the capital(log), km	4.170	0.683	0.028	0.126	558	0.119
Number of Warlike actions	0.339	1.532	0.162	0.167	608	0.130
Fiscal revenue (log)	20.998	1.396	0.179	0.266	641	0.141

Notes: Columns 1 and 2 report basic descriptive statistics for each variable. Column 3 shows the estimates of the effect of political turnover on each of the variables. Robust standard errors are shown in Column 4. Calonico et al. (2019) optimal bandwidth (Column 6). Variable Population counts the municipal population; Rural index is the share of the municipal population who lives in dispersed rural areas; Number of candidates counts the total mayoral candidates for the municipality in the year of elections; Altitude measures the distance in meters of the municipality to sea level; Distance to the capital measures the distance in kilometers from the municipality to the capital of the department; Number of Warlike actions counts the number of acts of war between two opposing parties the year of elections. Fiscal revenue counts the amount collected by the State to finance the activities of the public sector, such as taxes, fees, levies, and revenues, it is measured in Colombian pesos and 2018 real prices.

Table 3: **Effect of political turnover on municipal personnel**

Panel A: New discretionary municipal personnel

	(1)	(2)	(3)	(4)
turnover	2.631***	0.679**	2.696***	0.613
	(0.824)	(0.311)	(0.984)	(0.378)
Mean Control	19.59	19.77	19.96	20.21
Observations	603	612	772	741
bandwidth	0.135	0.140	0.202	0.192
Controls	No	Yes	No	Yes
Polynomial	1	1	2	2

Panel B: Municipal personnel who left

	(1)	(2)	(3)	(4)
turnover	2.004**	0.162	2.074**	0.181
	(0.874)	(0.222)	(0.936)	(0.252)
Mean Control	47.08	48.64	46.04	46.70
Observations	572	504	774	729
bandwidth	0.127	0.109	0.203	0.188
Controls	No	Yes	No	Yes
Polynomial	1	1	2	2

Notes: asinh transformation applied in dependent variables. Regressions weighted by 2005 local population. Elections fixed effects included on controls case. Mean control group is shown in levels. ** is significant at 5% and *** at 1%. Robust standard errors are shown in parentheses and clustered at the municipality level. Optimal bandwidth according to Calonico et al. (2019) used in all regressions.

Table 4: **Effect of political turnover on municipal personnel: years of governance**

Panel A: New discretionary municipal personnel

	(year 2)	(year 3)	(year 4)
Turnover	0.0518	-0.0513	-0.330
	(0.245)	(0.242)	(0.329)
Mean control	19.12	20.56	17.08
Observations	612	612	459
Bandwidth	0.140	0.140	0.140
Controls	Yes	Yes	Yes
Polynomial	1	1	1

Panel B: Municipal personnel who left

	(year 2)	(year 3)	(year 4)
Turnover	0.297	0.167	-0.056
	(0.181)	(0.178)	(0.191)
Mean control	49.77	64.48	82.48
Observations	612	612	459
Bandwidth	0.140	0.140	0.140
Controls	Yes	Yes	Yes
Polynomial	1	1	1

Notes: asinh transformation applied in dependent variables. Regressions weighted by 2005 local population. Elections fixed effects included on controls case. Mean control group is shown in levels. ** is significant at 5% and *** at 1%. Robust standard errors are shown in parentheses and clustered at the municipality level.

Table 5: **Effect of political turnover on municipal personnel: total period of governance**

Total government term				
	New discretionary personnel		Personnel who left	
Turnover	0.0587	0.0576	0.0803	0.124
	(0.191)	(0.231)	(0.115)	(0.129)
Control mean	96.33	96.33	262.7	262.7
Observations	612	612	612	612
Bandwidth	0.140	0.140	0.140	0.140
Controls	Yes	Yes	Yes	Yes
Polynomial	1	2	1	2

Notes: Dependent variables calculated as the total of contracts around the 4 years of local government. asinh transformation applied in dependent variables. Regressions weighted by 2005 local population. Elections fixed effects included on controls case. Mean control group is shown in levels. ** is significant at 5% and *** at 1%. Robust standard errors are shown in parentheses and clustered at the municipality level.

Table 6: **Effect of political turnover on municipal personnel: contract term groups**

Panel A: New discretionary municipal personnel

	(< 3 months)	(3 - 9 months)	(9 - 12 months)	(> 12 months)
Turnover	0.636**	0.682***	0.220	0.574*
	(0.247)	(0.241)	(0.206)	(0.301)
Mean control	4.382	5.975	2.619	8.600
Observations	612	612	612	612
Bandwidth	0.140	0.140	0.140	0.140
Controls	Yes	Yes	Yes	Yes
Polynomial	1	1	1	1

Panel B: Municipal personnel who left

	(< 3 months)	(3 - 9 months)	(9 - 12 months)	(> 12 months)
Turnover	0.0522	0.265	-0.0952	-0.359
	(0.198)	(0.196)	(0.225)	(0.378)
Mean control	16.65	12.40	4.238	5.407
Observations	612	612	612	612
Bandwidth	0.140	0.140	0.140	0.140
Controls	Yes	Yes	Yes	Yes
Polynomial	1	1	1	1

Notes: asinh transformation applied in dependent variables. Regressions weighted by 2005 local population. Elections fixed effects included on controls case. The mean control group is shown in levels. ** is significant at 5% and *** at 1%. Robust standard errors are shown in parentheses and clustered at the municipality level.

Table 7: **Effect of political turnover on municipal personnel: discretionary contract dynamics**

Share new discretionary municipal personnel					
	(< 3 months)	(3 - 9 months)	(9 - 12 months)	(> 12 months)	(all)
Turnover	0.0723	0.0678	0.0296	-0.00750	0.0348
	(0.0562)	(0.0554)	(0.0637)	(0.0553)	(0.0499)
Mean control	0.547	0.752	0.791	0.787	0.683
Observations	612	612	612	612	612
Bandwidth	0.140	0.140	0.140	0.140	0.140
Controls	Yes	Yes	Yes	Yes	Yes
Polynomial	1	1	1	1	1

Notes: Dependent variable created as $(\frac{\text{new discretionary ops personnel}}{\text{new ops personnel}})$. Elections fixed effects included on controls case. Mean control group is shown in levels. ** is significant at 5% and *** at 1%. Robust standard errors are shown in parentheses and clustered at the municipality level.

Table 8: **Heterogeneous Effects: NBI by quartiles**

Discretionary new ops permanent appointments		
	(1)	(2)
A - Turnover	0.119	-0.261
	(0.409)	(0.402)
NBI_2	-0.365	-0.341
	(0.570)	(0.567)
NBI_3	-0.310	-0.290
	(0.416)	(0.411)
NBI_4	-0.539	-0.498
	(0.508)	(0.500)
Turnover×NBI_2	0.300	0.249
	(0.712)	(0.708)
Turnover×NBI_3	0.796	0.765
	(0.487)	(0.482)
B - Turnover×NBI_4	0.995**	0.980**
	(0.476)	(0.471)
Observations	596	596
R-squared	0.654	0.658
Bandwidth	0.140	0.140
A + B	1.114	0.719
Ho: $A + B = 0$		
F-statistic	8.500	2.670
P-value	0.000	0.100
Polynomial order	1	2
Controls	Yes	Yes

Notes: index of unsatisfied basic needs (NBI) divided by quartiles. NBI_4 takes the value of one if the municipality is in the fourth quartile. Other dummies and interactions were not included in the table. asinh transformation applied in the dependent variable. Regressions weighted by 2005 local population. Elections fixed effects included on controls case. Mean control group is shown in levels. ** is significant at 5% and *** at 1%. Robust standard errors are shown in parentheses and clustered at the municipality level.

Table 9: **Effect of political turnover on discretionary temporal contracts expenditure: municipal analysis**

Share discretionary contracts amount over total expenditure					
	(< 3 months)	(3 - 9 months)	(9 - 12 months)	(> 12 months)	(all)
Turnover	0.0118	0.00822	-0.0155	-0.0500	-0.0454
	(0.0125)	(0.00558)	(0.0193)	(0.0768)	(0.0977)
Mean control	0.0170	0.0160	0.0100	0.0570	0.0990
Observations	612	612	612	612	612
Bandwidth	0.140	0.140	0.140	0.140	0.140
Controls	Yes	Yes	Yes	Yes	Yes
Polynomial	1	1	1	1	1

Notes: Dependent variable created as $(\frac{\text{municipality new discretionary personnel amount}}{\text{municipality total expenditure}})$. Elections fixed effects included on controls case. Mean control group is shown in levels. ** is significant at 5% and *** at 1%. Robust standard errors are shown in parentheses and clustered at the municipality level.

Table 10: **Effect of political turnover on discretionary temporal contracts expenditure: contract analysis**

Contract amounts		
	(1 Year after elections)	(Year of elections)
Turnover	-0.219***	-0.195
	(0.0685)	(0.202)
Mean control	7,900,000	8,400,000
Observations	66,966	50,218
Bandwidth	0.140	0.140
Controls	Yes	Yes
Polynomial	1	1

Notes: Dependent variables in Colombian pesos. Log transformation applied. Regressions weighted by 2005 local population. Elections fixed effects included on controls case. Mean control group is shown in levels. ** is significant at 5% and *** at 1%. Robust standard errors are shown in parentheses and clustered at individual level.

Table 11: **Heterogeneous Effects: Discretionary new ops permanent appointments**

Contract amounts		
	(1)	(2)
A - Turnover	-0.560***	-0.492***
	(0.0366)	(0.0385)
NewWorker	-0.145***	-0.148***
	(0.0231)	(0.0231)
B - Turnover×NewWorker	0.316***	0.313***
	(0.0308)	(0.0307)
Observations	66,966	66,966
R-squared	0.181	0.181
Bandwidth	0.140	0.140
A + B	-0.244	-0.180
Ho: $A + B = 0$		
F-statistic	3.250	2.810
P-value	0.070	0.090
Polynomial order	1	2
Controls	Yes	Yes

Notes: Variable *NewWorker* takes the value of one if the new ops permanent worker entered the first year after elections. Dependent variables in Colombian pesos. Log transformation applied. Regressions weighted by 2005 local population. Elections fixed effects included on controls case. Mean control group is shown in levels. ** is significant at 5% and *** at 1%. Robust standard errors are shown in parentheses and clustered at individual level.

Table 12: **Effect of political turnover on Net enrollment rate**

	(year 1)	(year 2)	(year 3)	(year 4)
Turnover	0.0165	0.0143	-0.00281	-0.0183
	(0.0381)	(0.0391)	(0.0457)	(0.0384)
Observations	609	609	491	491
Controls	Si	Si	Si	Si
Mean control	0.836	0.838	0.825	0.843
Bandwidth	0.140	0.140	0.140	0.140
Polynomial	1	1	1	1

Notes: Dependent variable created as the share of individuals between 5 and 16 years old attending the education system. Elections fixed effects included on controls case. Mean control group is shown in levels. ** is significant at 5% and *** at 1%. Robust standard errors are shown in parentheses and clustered at the municipality level.

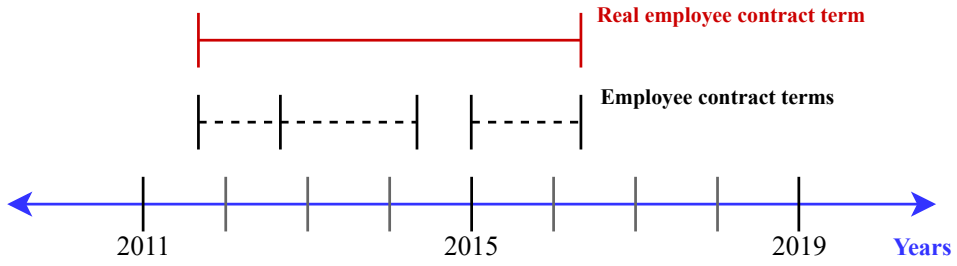
Table 13: **Effect of political turnover on Health coverage rate**

	(year 1)	(year 2)	(year 3)	(year 4)
Turnover	0.0270	0.0270	0.0276	0.0323
	(0.0316)	(0.0316)	(0.0369)	(0.0366)
Observations	612	612	494	494
Controls	Yes	Yes	Yes	Yes
Mean control	0.818	0.819	0.808	0.811
Bandwidth	0.140	0.140	0.140	0.140
Polynomial	1	1	1	1

Notes: Dependent variable created as the share of individuals enrolled in contributory and subsidized healthcare schemes. Elections fixed effects included on controls case. Mean control group is shown in levels. ** is significant at 5% and *** at 1%. Robust standard errors are shown in parentheses and clustered at the municipality level.

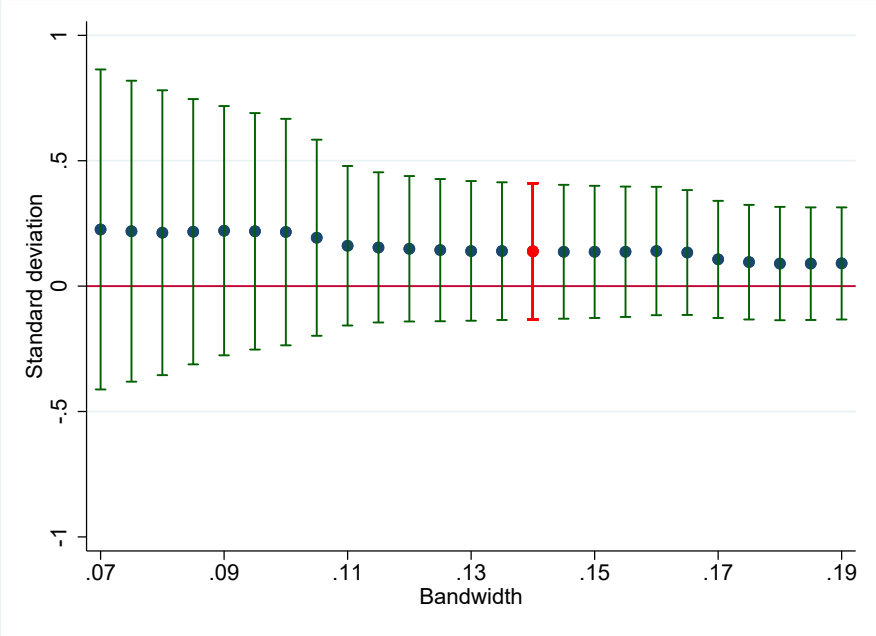
A Appendix

Figure A,1: **contracts signed by the employee**



Source: Own elaboration

Figure A,2: **Effect of political turnover on long-standing workerscontract amount (elections year)**



Notes: Vertical lines represent confidence interval of point estimates. Robust estimates, election fixed effects, controls and linear polynomial case. Solid vertical Red line indicates. Confidence intervals at 95%.

Table A,1: **Sample Selection**

Electoral cicle	**Incumbent wins (obs)**	**Challenger wins (obs)**
2011	178	228
2015	173	234
2019	95	142

Notes: The table presents the number of municipalities by electoral period divided if the municipality was a political turnover or not. Own elaboration with information on electoral results from Centro de Estudios sobre Desarrollo Económico(CEDE).

Table A,2: **Effect of political turnover on municipal personnel: Alternative measures**

Personnel per 100.000 inhabitants				
	New discretionary personnel		Personnel who left	
Turnover	211.0*	216.9*	206.7	199.7
	(112.0)	(117.0)	(139.0)	(172.7)
Mean control	564.3	564.3	700.3	700.3
Observations	612	612	612	612
Bandwidth	0.140	0.140	0.140	0.140
Controls	Yes	Yes	Yes	Yes
Polynomial	1	2	1	2

Notes: Elections fixed effects included on controls case. The mean control group is shown in levels. ** is significant at 5% and *** at 1%. Robust standard errors are shown in parentheses and clustered at the municipality level.

Table A,3: **Effect of political turnover on other public contracts**

New singed contracts		
	(1)	(2)
Turnover	0.428**	0.494*
	(0.210)	(0.256)
Mean control	19.77	19.77
Observations	612	612
Bandwidth	0.140	0.140
Controls	Yes	Yes
Polynomial	1	2

Notes: asinh transformation applied in dependent variables. Elections fixed effects included on controls case. Mean control group is shown in levels. ** is significant at 5% and *** at 1%. Robust standard errors are shown in parentheses and clustered at the municipality level.

Table A,4: **Heterogeneous Effects: Same Political Party as the President of the country**

Discretionary new ops permanent appointments		
	(1)	(2)
A - Turnover	0.570**	0.289
	(0.253)	(0.262)
SamePresident	0.057	0.057
	(0.208)	(0.208)
B - Turnover×SamePresident	0.095	0.063
	(0.319)	(0.319)
Observations	612	612
R-squared	0.686	0.689
Bandwidth	0.140	0.140
A + B	0.665	0.353
Ho: $A + B = 0$		
F-statistic	4.380	1.050
P-value	0.040	0.310
Polynomial order	1	2
Controls	Yes	Yes

Notes: Variable *SamePresisent* takes the value of one if the new political party is the same as the president's party (Also if any political party in the new coalition is the same as that of the president). asinh transformation applied in the dependent variable. Regressions weighted by 2005 local population. Elections fixed effects included on controls case. Mean control group is shown in levels. ** is significant at 5% and *** at 1%. Robust standard errors are shown in parentheses and clustered at the municipality level.