

# The electoral returns to vote buying: Evidence from Brazil\*

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## Abstract

Vote buying is widespread, yet we lack systematic evidence about its returns at the candidate-level. We construct a novel database, drawing from more than 30,000 voter tips about candidate malfeasance, to measure the prevalence and efficacy of a range of vote buying modalities across two election cycles in Rio de Janeiro, Brazil. We leverage exogenous variation in voters' likelihood to file a tip to estimate the effect of vote buying on winning. Our results suggest that buying votes increase a candidate's probability of victory by 4.49 percentage points, and that the most effective sub-type of vote-buying is the promise of patronage, followed by the distribution of gifts and the use of brokers. While prior work about the persistence of clientelism has focused on citizen demand for benefits, this paper directly connects buying votes to winning through the supply side, underscoring the importance of candidate incentives in explaining why vote buying persists today.

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# 1 Introduction

Vote buying is a major obstacle to democratic accountability and the quality of democracy. Across the Global South, vote buying is widespread (Coppedge et al. 2026), yet takes a range of different forms. Path-breaking works have documented how it works and the varieties of vote-buying strategies (Holland and Palmer-Rubin 2015; Kitschelt and Wilkinson 2007; Levitsky 2003; Stokes 2005; Stokes et al. 2013), which have inspired a rich literature on the topic, summarized in Hicken and Nathan (2020), Hicken (2011), Kitschelt (2020), Mares and Young (2016), and Stokes (2009). However, observing vote buying is notoriously difficult for a range of reasons related to secrecy and social stigma.

The literature suggests three main reasons why vote buying might translate into electoral victory. First, vote buying may be effective when it is deployed in contexts of widespread poverty and inadequate public provision, where a clientelistic handout may represent a material improvement in quality of life for a voter (Diaz-Cayeros et al. 2016; Dixit and Londregan 1996; Stokes 2005; Kitschelt 2000; Ravanilla and Hicken 2023; Murillo et al. 2021). Second, vote buying may be a successful electoral strategy when it invokes norms of reciprocity. Even in the absence of monitoring, it can be a winning strategy when vote-buyers can generate feelings of obligation, indebtedness, gratitude, or even pleasure from the voter (Finan and Schechter 2012; Lawson and Greene 2011, 2014; Kamei 2021; Ravanilla et al. 2022; Schaffer 2007). Third, vote buying may help candidates win if voters view it as a credible signal of future responsiveness and benefit delivery. Rather than selling their votes in a one-time exchange, voters may strategically support candidates when they perceive willingness to distribute benefits as a signal of future benefits, once elected (Diaz-Cayeros et al. 2016; Kramon 2016; Nichter 2018).

An opposing literature also shows how vote buying can adversely affect the chance of victory. Vote buying violates democratic norms, which could lead to backlash among voters—

especially the middle class—if they perceive vote-buying candidates as corrupt, less qualified, or less capable at governing (Carlin and M. Moseley 2015; Carlin and M. W. Moseley 2022; Weitz-Shapiro 2012; Weitz-Shapiro 2014; Justesen et al. 2025). Additionally, absent the norm of reciprocity or a strategy to monitor and enforce the clientelistic bargain, recipients may simply renege on their promises, a concern noted by candidates or brokers in Hicken and Nathan (2020), Ravanilla et al. (2022), Rueda (2017), and Stokes (2005).

Together, these two strands of the literature suggest that the efficacy of vote buying is an open question. Ethnographic studies have documented the logic underpinning clientelism’s efficacy (Auyero 2001; Gay 1993), but large-N studies on the same topic (e.g., Brusco et al. 2004; Guardado and Wantchékon 2018) typically rely on public opinion surveys, which have a range of known measurement obstacles related to social desirability bias (Gonzalez-Ocantos et al. 2012; Lupu and Michelitch 2018).

Few studies use observational evidence to show that vote buying directly affects electoral outcomes. Cantú (2019) and Kaba (2022) document the returns to vote buying, focusing on clientelistic transfers in the form of gift or local food vouchers. They leverage the quasi-random distance between voting precincts and grocery stores, arguing that individuals living closer to the redemption locations will perceive the vote-buying offer as more valuable, likely because of its convenience. These studies provide causal evidence on the *demand* side of vote buying, but they do not shed light on the *supply* side. This study aims to fill this gap. By focusing on the candidate-level, our study focuses on a different counterfactual: if a candidate *did not* use clientelistic strategies, how would this affect their chance of victory?

We document the prevalence and efficacy of vote buying in the Rio de Janeiro federal, state, and local elections in 2018 and 2020. On average, our findings suggest that candidates who buy votes are 4.49 percentage points more likely to win than those who do not. We further show that patronage promises of public sector employment appear to be the most effective sub-type of vote-buying, followed by the distribution of gifts and the use of brokers.

Our secondary findings suggest that these results also hold on the intensive margin—or that engaging in *more* vote buying increases one’s chances of victory.

To estimate the relationship between vote-buying and electoral victory, we construct a novel dataset, drawing from the text of anonymous tips submitted by voters to the State Electoral Authority. We link this dataset to official electoral returns, candidate and municipality characteristics, and create a classification algorithm to categorize complaints by type of vote buying. We then use political party as a crosswalk to merge our data with expert surveys about partisanship and party-level predictors of vote buying. To derive the causal effect between being elected and vote buying, we leverage exogenous variation in being named in a complaint about vote buying, which is a quasi-random combination of (i) the unobserved vote-buying incidence and (ii) voters’ capabilities and aspirations to file a tip, drawing from the claim-making literature (**etc**; Bloemraad 2018; Gallagher et al. 2024; Kruks-Wisner 2018).

These findings matter for understanding why clientelism persists. On the demand side, clientelism persists because certain voters want the goods and services exchanged for their vote (Bobonis et al. 2022; Cammett et al. 2025; Corstange 2016; Nichter 2008). On the supply side, this paper’s findings suggest that buying votes may be a best response for candidates operating in settings where clientelism is widespread. Our evidence suggests that approximately one in every ten candidates uses some type of vote-buying strategy. This ratio swells to one in every two when only considering election winners. In such settings, the opportunity cost of *not* buying votes may exceed the cost of vote-buying itself.

## 2 Vote buying in Rio de Janeiro

Decades of research have documented the prevalence of clientelism in Rio de Janeiro. Classic accounts of political machines show how local political bosses mobilize voters in both the capital and the state’s interior (Ames 2009; Diniz 1982; Hagopian 1996; Leeds and Leeds 1978). Ethnographic studies in Brazil’s new democracy (post-1985) provide evidence of the detailed brokerage networks in Rio de Janeiro’s urban slums (*favelas*) and marginalized communities (Leeds 1996; Perlman 2010).

Many candidates and parties rely on brokers who leverage personal relationships with voters to identify likely supporters, distribute benefits, or mobilize recipients. These intermediaries range from partisan operatives embedded in electoral machines to, more recently, independent brokers (Holland and Palmer-Rubin 2015) who derive influence from their existing role in the community, including neighborhood association leaders (Gay 1993, 1999), criminal group members (Albarracín 2018; Arias 2006, 2017; Trudeau 2024), and members of the church (Gay 1993; Tuñón 2026). A voter complained to the Electoral Authority about one such religious broker’s improper use of his influence during the 2020 municipal elections:

Pastor [REDACTED], father of the candidate for president of the [REDACTED], responsible for all [REDACTED] in [REDACTED] in the [REDACTED], used the pulpit to ask for votes for his son, a pre-candidate for city council in [REDACTED], obviously using his position of authority to coerce the faithful. In the link, you can see the request starting at 22:40, and more precisely at 24:45, he mentions his son.<sup>1</sup>

Candidates distribute a wide range of benefits during clientelistic transactions, from cash payments on election day to food baskets, medical services (e.g., cataract surgery, preferential access to vaccines or drugs), and patronage promises of public-sector employment. The types

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1. Electoral complaint, dd/mm/yyyy. This data source is described in greater detail in Section 3.2

of goods and services that are traded and the means of distribution has evolved over time as candidates try to one-up each other in a competitive electoral environment. In an interview with a candidate running on an anti-corruption platform, she said:

It is not just about vote buying... [Voters] want to choose someone, but the tactics keep evolving. One candidate might organize a huge barbecue; another might put on a huge event. So, depending on the tactic, it is not just a matter of saying, “Here, take this money.”<sup>2</sup>

Candidates think that not buying votes puts them at a disadvantage. In an interview after his unsuccessful campaign for city council in the 2024 local elections, a candidate suggested that he lacked adequate funding to run a winning campaign. He said, “when politicians come [to marginalized communities], they come with lots of money. If you don’t have the money, you will not get elected.”<sup>3</sup> A different candidate who won but ran a focused and well-funded grassroots campaign said, “Well, it [vote-buying] puts everyone at a disadvantage, right? Anyone who is not going to buy votes will be at a disadvantage, and it is quite decisive.”<sup>4</sup>

## 3 Data and empirical strategy

### 3.1 Outcome: Electoral victory

The main outcome is an indicator if the candidate wins the election. We obtain candidate-level electoral results from the Supreme Electoral Court (TSE, *Tribunal Supremo Eleitoral*) and construct a binary variable. We include all federal-, state-, and local-level races in our

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2. Author’s interview, 11/26/2024. Quotes translated and lightly edited for clarity.

3. Author’s interview, 11/01/2024.

4. Author’s interview, 11/26/2024.

dataset (except presidential) for the 2018 (federal and state) and 2020 election years.<sup>5</sup>

Brazil has a highly fragmented multi-party system (Zucco and Power 2021) with stiff electoral competition. In our study, the candidate pool in Rio de Janeiro includes 3,695 candidates from 35 different parties in the 2018 federal and state elections, and 26,479 candidates from 34 parties in the 2020 local elections (pooled across all municipalities in the state). All legislative elections are at-large, meaning that every legislator (deputy or councilor) represents the entire district, whether it is the state or municipality.<sup>6</sup> While executive races are first-past-the-post (with an optional second round if no candidate wins more than 50% of the vote in the first round), legislative races follow open-list proportional representation rules. Parties are allowed to nominate 1.5 times the number of available seats, and often fill their party slate. For the state assembly of Rio de Janeiro, this means most parties will put forth a slate of 105 candidates for 70 seats.

The combined party system fragmentation and the number of candidates in each race—especially legislative races—means that, for many, the difference between winning and losing is a few hundred or thousand votes. Among the races and election-years included in our study, 4.9% of candidates who run win (see Table 1 for summary statistics). This proportion varies by office, from a high of 14.2% for mayors to a low of 2.84% for state deputies.

### 3.2 Treatment: Complaints about vote-buying

This section introduces a novel dataset about candidate-level vote buying during the state and national elections in 2018 and local elections in 2020. During the campaign period, citizens can submit anonymous tips to the State Electoral Authority of Rio de Janeiro

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5. The federal-level races include candidates for senator and federal deputy; the state-level races include candidates for governor and state deputy, and the local-level races include candidates for mayor and city councilor.

6. In practice, candidates informally carve out their own communities (*redutos eleitorais*, or “electoral fortresses”) that they are more responsive to (Ames 2009).

Table 1: Summary Statistics

| Variable                     | Mean          | SD    | Min    | Max    |
|------------------------------|---------------|-------|--------|--------|
| <i>Outcome</i>               |               |       |        |        |
| Electoral victory            | 0.049         | 0.217 | 0      | 1      |
| <i>Independent variables</i> |               |       |        |        |
| Vote-buying                  | 0.108         | 0.311 | 0      | 1      |
| — Brokers                    | 0.081         | 0.273 | 0      | 1      |
| — Gifts                      | 0.073         | 0.261 | 0      | 1      |
| — Patronage                  | 0.022         | 0.148 | 0      | 1      |
| N Vote-buying complaints     | 0.561         | 4.281 | 0      | 354    |
| — N broker complaints        | 0.276         | 2.253 | 0      | 192    |
| — N gift complaints          | 0.239         | 1.819 | 0      | 135    |
| — N patronage complaints     | 0.046         | 0.474 | 0      | 28     |
| <i>Control variables</i>     |               |       |        |        |
| Clientelism (party-level)    | 0.668         | 0.112 | 0.367  | 0.869  |
| Incumbency                   | 0.027         | 0.161 | 0      | 1      |
| Ideology                     | 0.203         | 0.391 | -0.898 | 1      |
| Campaign resources (log)     | 6.098         | 3.482 | 0      | 16.059 |
| <b>Observations</b>          | <b>30,171</b> |       |        |        |

*Note:* Unit is the candidate-election-year level.

(*Tribunal Regional Eleitoral*, TRE-RJ) about candidates, parties, or anyone else they believe is breaking electoral laws.<sup>7</sup> There are two ways to file a tip: 1) complete an online form on the State of Rio de Janeiro Public Prosecutor’s (MPRJ) website, or 2) via an app, **Pardal**, created by the Federal Electoral Authority (TSE) for anonymous electoral complaints across the entire country.<sup>8</sup> Each tip in the database includes an open-entry text field about the incident, name of the offender(s), party affiliation, and the time and date of the incident.

Preparing the dataset for analysis alongside electoral returns required extensive cleaning

7. We filed an information request to obtain complaint-level data from the TRE-RJ, meaning that all mentioned candidates in the database and thus the focus of this paper is the State of Rio de Janeiro.

8. Voters can also submit written tips to state and national authorities via e-mail, a WhatsApp channel, Facebook Messenger, or a telephone hotline, however, these modes of communication do not guarantee anonymity and fewer than 2% of complaints are registered through such channels.

of the raw data. We summarize the steps here and provide further detail about all variables we created in [Appendix C](#). We took several steps to match the open-entry text field for candidate names with the legal candidate names linked to electoral returns.<sup>9</sup> We employ a multi-stage string matching protocol to link complaints to candidates that incorporates text processing techniques, Jaro-Winkler probabilistic matching (Wang et al. 2017), and hand-coding, detailed in [Appendix A.2](#). We were able to retain 96% of the complaints in the final dataset, including those that were an exact match with a candidate name or those verified through our protocol.

We used the cleaned list of candidate names as a crosswalk to link the complaints to various publicly available datasets about elections, all published by the Brazilian Supreme Electoral Tribunal (TSE, *Tribunal Supremo Eleitoral*). These include candidate-level characteristics (e.g., party, the candidate’s age, race, gender, previous employment), campaign donations, disaggregated vote totals, and election results.

We then use the open-text field to create four vote-buying indicators.<sup>10</sup> These indicators measure 1) use of *brokers* as intermediaries to access voters, 2) distribution of *gifts* to voters, and 3) the promise of *patronage* (public sector jobs). We also create a fourth general *vote-buying* indicator if either brokers, gifts, or patronage is mentioned. [Figure 1](#) shows the proportion of tips about vote buying (in general) in the corpus of complaints, as well as its three subtypes. Roughly 43% of complaints in the database are about vote buying. The most common sub-topics include the use of brokers (26.5%), followed by the distribution of gifts (23.5%) and patronage (4.5%).<sup>11</sup>

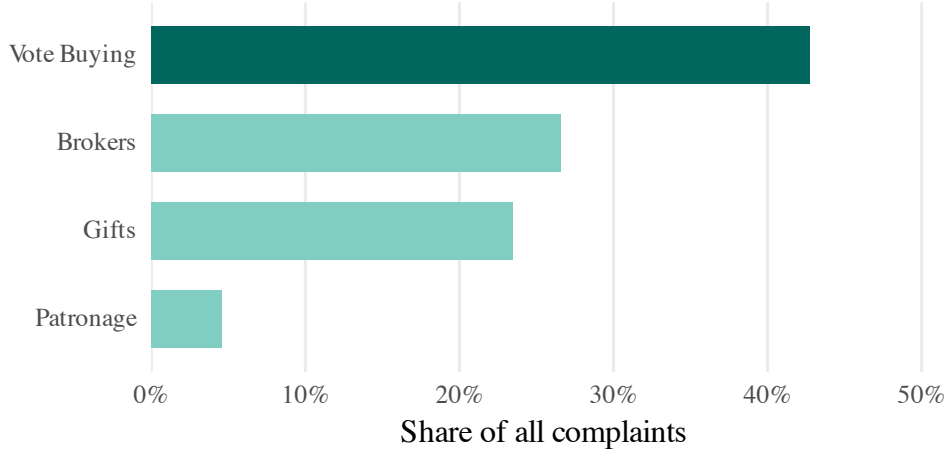
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9. Common matching errors include spelling errors and abbreviations, compound phrases (e.g., a candidate’s name plus their party), multiple candidates mentioned in one complaint, inconsistencies between a candidate’s legal name, their truncated or nickname “ballot box name,” or combinations of several errors.

10. We used an inductive process to generate the word lists for each topic, which we defined after a qualitative reading of a random sample of 1,000 complaints. The specific word lists, as well as more details about these methods, are shown in [Appendix A.3](#). This coding scheme allows for complaints to pertain to multiple categories, and many do.

11. Though it is out of the scope of this paper, our qualitative reading of the complaints suggests that most common themes of the 57% of complaints *not* about vote-buying include illicit campaign propaganda and misuse of public facilities or resources.

Figure 1: Topic Proportions



*Note:* There are  $N = 31,067$  total complaints in the corpus. Some pertain to multiple subtypes of vote-buying (e.g., both brokers and gifts). The main topic, *Vote buying*, includes any complaint categorized as *brokers*, *gifts*, and/or *patronage*.

The primary independent variable is an indicator that takes a value of 1 if a candidate is named in a tip about vote buying for a particular electoral cycle. [Table 1](#) reveals that 10.8% of all candidates running in 2018 or 2020 races were mentioned in a vote-buying tip. Complaints about candidate reliance on brokers were most frequent (8.1%), followed by distribution of gifts (7.3%) and patronage (2.2%). To measure the relationship between vote buying and winning on the intensive margin, we also calculate count variables for the vote-buying variable and its subtypes. The maximum number of vote-buying tips about a single candidate was 354; on average, each candidate was mentioned 0.561 times.

### 3.3 Treatment exogeneity

Since vote buying is often secretive, most scholars resort to party-level proxies when modeling its use or effects. Leveraging the variation in the volume of vote-buying complaints about a candidate is preferable to alternative operationalizations because (i) alternative measures are likely endogenous to other pre-election factors at the party-level, while (ii) the number of complaints about vote buying is mainly driven by voters' awareness of and motivation to

use the reporting tools, and is hence exogenous to other determinants of voting outcomes at the party level.

Expert surveys about party-level propensity to use clientelism are the dominant measures used to capture variation in likelihood to buy votes. We combine two expert surveys to create a measure of party-level likelihood of using clientelistic strategies. We merge two well-known data sources in the party politics literature: the 2018 Varieties of Party Identity and Organization (V-Party) (Lindberg et al. 2022) and the 2020 Chapel Hill Expert Survey (CHES) (Martínez Gallardo et al. 2021). We combine these datasets to create a party-level clientelism variable that is current for both election years in our dataset.<sup>12</sup> Our merged party-level clientelism variable is reported in Table 1.

While this measure is a useful benchmark, it is not sufficient for our main analyses for two reasons. First, because the treatment is administered at the party level and within-party variation is unobservable. Given the multitude of candidates in Brazilian elections, we contend that there exists substantial within-party variation in a candidate’s probability of using clientelism, even when conditioning on membership in a party with a high chance of using clientelism. This logic also suggests that some candidates who are affiliated with a party with low chance of using clientelism might indeed buy votes.

We also do not use this variable because it is demonstrably endogenous to a variety of other party-level predictors of electoral performance. In Figure 3 (explained in greater detail below), we show that existing party-level measures of clientelism are systematically correlated with a range of variables capturing corruption, populism, and accountability, all of which are also plausible predictors of electoral success. We thus view the relationship between party-level likelihood of using clientelism and electoral performance as likely confounded. We

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12. Although the elections were only two years apart, they co-occur with a major realignment in Brazilian party politics during this time period, which was focused on the ascent of Bolsonaro and the far right (Layton et al. 2021). In Appendix B, we provide further detail about how clientelism is operationalized in both datasets, as well as our approach to standardize the measure across surveys.

further engage with these party-level measures of likelihood to use clientelism throughout [Section 4](#).

In contrast to a measure at the party-level, variation in being named in a vote-buying complaint is the result of a quasi-random combination of candidate-level factors and voter-level factors: (i) a candidate’s (unobserved) usage of vote buying, and (ii) voters’ motivations to report a candidate for vote-buying to the electoral authorities. These factors make being the subject of a complaint plausibly unrelated to other determinants of political victory.

First, and crucially, we posit that being named in a complaint about vote buying is a function of attempting to buy votes. While the underlying incidence is unobserved, we expect it to be imperfectly yet positively correlated with being named in a vote buying tip. As any one candidate increases their effort to buy votes or to buy more voters, this should increase voters’ exposure to the offense. We also posit that increased exposure to vote buying will increase the probability that a tip about the candidate will be filed. One potential objection to this claim is that vote buying, if done well, won’t generate complaints, because it is delivering material goods or other benefits to voters. As demonstrated in the literature, vote buying is very unlikely to thread the needle so perfectly as to not generate any critics.

Second, on the voter level, submitting a complaint is a function of voters’ *capabilities* and *aspirations* to report a candidate to the electoral authorities. Kruks-Wisner’s (2018) theory of claim-making and citizen services in the developing world shows that demand-making is shaped by citizens’ knowledge about the state and access to channels (*capabilities*) as well as their underlying beliefs about official responsiveness and personal sense of entitlement and efficacy (*aspirations*). Related literature shows that the former factor is often related to income, education, or other status and class markers, but there is significant within-class or within-demographic group variation in *aspirations* to make claims on the state, and perceived self-efficacy in doing so (Auerbach and Kruks-Wisner 2020; Grossman and Slough

2022; Lieberman and Zhou 2022). These studies show that an individual’s self-efficacy (and thus propensity to file a subsequent claim) can increase after just one claim receives an adequate response, and supports Kruks-Wisner’s (2018, p. 133) claim that “aspirations and capabilities do not develop among individuals in isolation but are ‘formed in interaction and in the thick of social life’.”

Practically, in our study, this means that two individuals living in the same neighborhood, with similar demographic characteristics could have different probabilities of submitting an electoral complaint after witnessing a vote buying attempt, conditional on their past experiences with the state. We interpret this component of complaint incidence as an as-if random function of individual voters’ experiences and propensity to make demands on the state, rather than a function of candidate or place-based attributes.

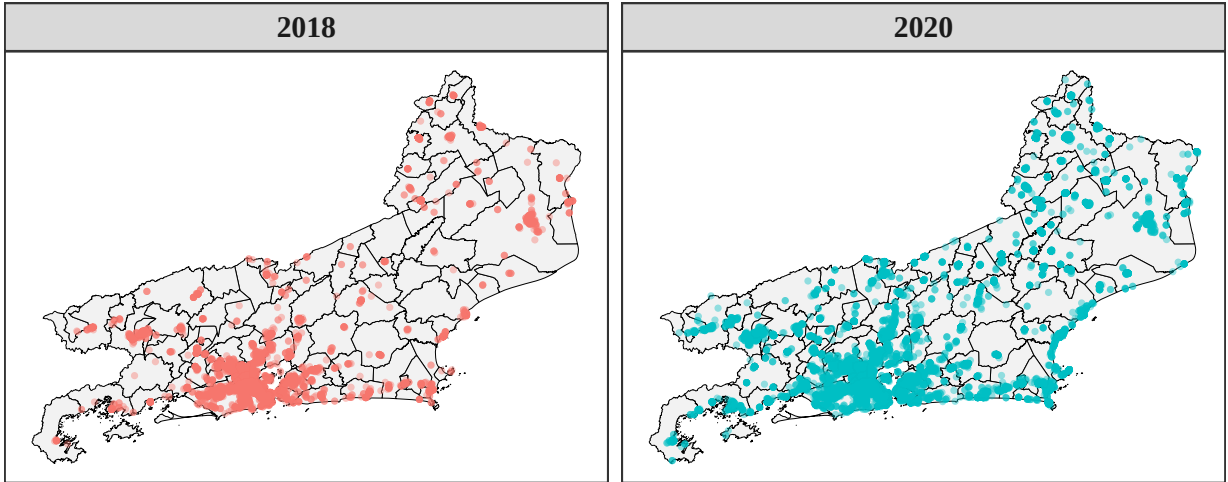
A critical component of our identification strategy is that voters are filing vote-buying complaints because individual candidates or members of their campaign teams are actually engaging in vote-buying, and not for other potential confounding reasons. The plausibly exogenous variation in being named in a tip is conditional on three variables.

The first is municipality where the complaint originated, and in the case of municipal elections, the level in which the election is held. As with many public services, it is likely easier to learn about and use the electronic tools to file a tip in wealthier or more urban areas. State capacity is unequally distributed, and is often higher in the capital city and metropolitan region vis-à-vis the surrounding countryside, yet vote buying exists in both rural and urban areas.<sup>13</sup> We geocode the complaints using location information from the open entry text field. Figure 2 shows that the majority of complaints are clustered in the larger urban municipalities in the southwest of the state, where the capital and surrounding suburbs are. We expect awareness of and access to the complaint reporting channels to depend on

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13. A large literature documents the prevalence of clientelism both in urban (Gay 1993, 1999; Perlman 2010) and rural (Hagopian 1998; Leal 1949; Nichter 2018) parts of Brazil.

Figure 2: Geographic distribution of complaints, state of Rio de Janeiro



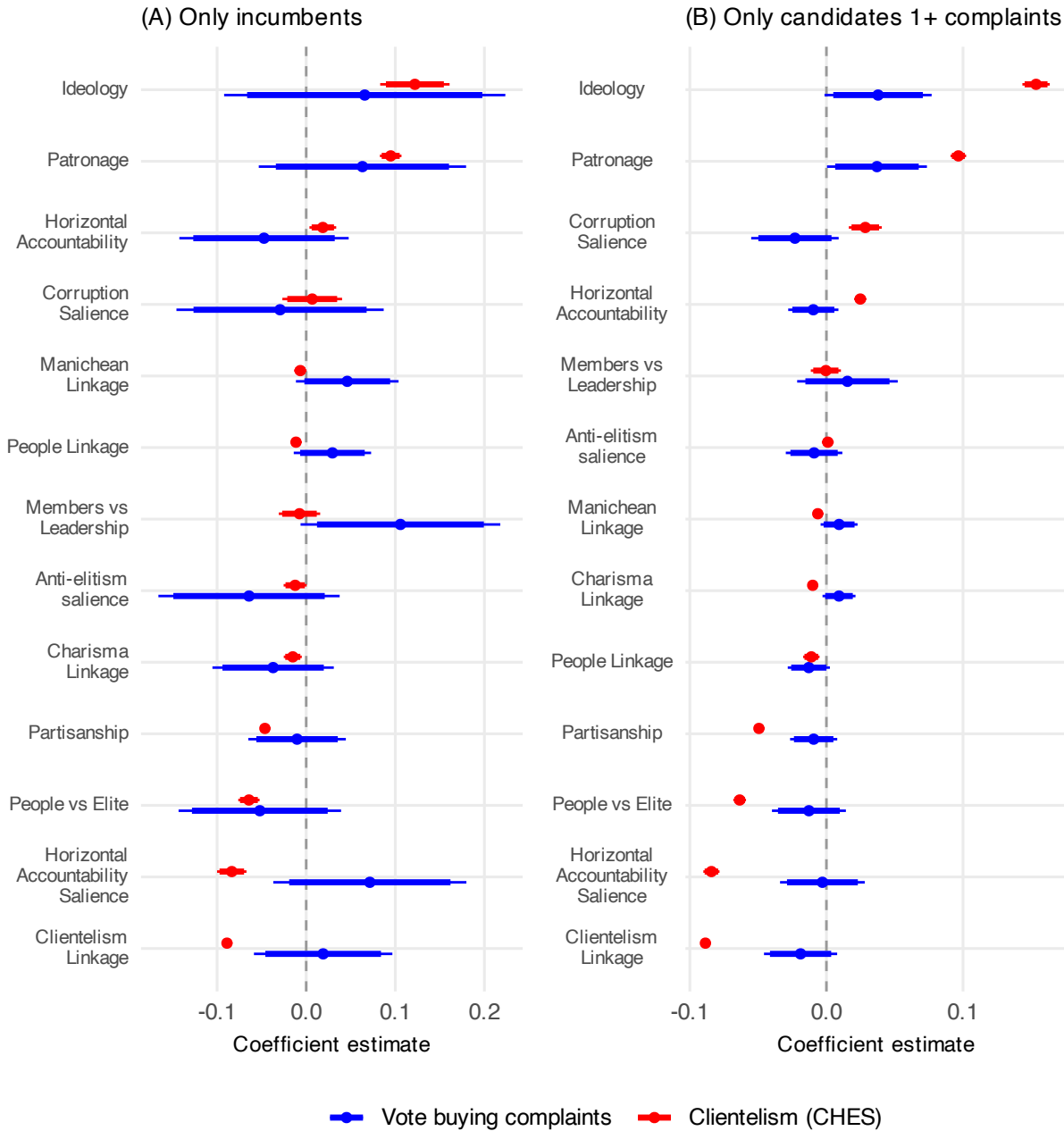
*Note:* Both maps depict the state of Rio de Janeiro and its municipal boundaries. The capital city, Rio de Janeiro, and its metropolitan area are in the southwest of the state, where most complaints are clustered and where the majority of the population resides.

municipality, and it is therefore more plausible that complaint incidence and frequency is mostly exogenous to factors *within* municipalities than between them. To account for these municipal differences, we control for municipal fixed effects in all subsequent analyses.

The second and third variables are indicators capturing likely pre-election exposure to and awareness of a candidate. In certain high-profile races, such as gubernatorial races, it is likely that voters will be exposed to all or to most candidates, but for lower-profile races, this is less likely. Given how crowded the electoral playing field is for downballot candidates (see [Section 3.1](#)), we expect voters to be exposed to a much smaller quantity of candidates in these races. To account for this, we include office-level fixed effects and control for incumbency, since voters are likely exposed to incumbents for at least four years before the campaign.

[Figure 3](#) provides supporting evidence that being named in a vote-buying complaint is an as-if random function of unobserved vote-buying and citizen claim-making, conditional on the three above factors. In Panel A, we restrict the sample to incumbents across both election years, who likely have greater name recognition for the average voter and more campaign

Figure 3: Balance (placebo) test for pre-election predictors of vote buying



*Note:* Point estimates in blue show the predicted effect of a range of party-level variables on candidates' likelihood to be named in a vote-buying complaint. Point estimates in red represent the predicted effect of the same party-level variables on party-level clientelism. Estimates include 90% and 95% confidence intervals (thick and thin errorbars, respectively). All party-level variables on the y-axis correspond to variables in the CHES 2020 expert survey, and we subset the data to focus on the 2020 election results so as not to induce post-treatment bias, since the CHES survey was conducted in 2020. Panel A conditions the sample on incumbency ( $N = 696$ ) and includes geographic- and office-level fixed effects. Panel B conditions the sample on candidates who have been mentioned in at least one complaint ( $N = 4,253$ ) and controls for incumbency with geographic- and office-level fixed effects.

resources to run their campaign. We estimate the relationship between being named in a vote-buying complaint and a range of party-level variables, conditioning on voters’ exposure to the candidate (office-level fixed effects) and voters’ exposure to the reporting channels (geographic fixed effects). Our measure of candidate-level vote-buying (shown in blue) is orthogonal to a large set of predictors measured at the party level, which are systematically correlated with extant measures of clientelism (shown in red), also assigned at the party-level. Taking into account such within-party variation is essential in a case like Brazil, where each party nominates many candidates.

One objection to our claim could be that voters are not filing complaints because they observed vote-buying, but rather, because they intend to politically sabotage a rival candidate. Vote buying is an electoral offense, punishable by a fine, expulsion from the race, or potentially jail time, and raising a false flag could seem like an effective way to throw a rival out of the race or damage their chances. While we cannot rule out the possibility that some complaints were made in bad faith or with the intent to sabotage a front-runner, we believe most of these complaints are legitimate. We conduct several robustness checks, detailed in [Section 4.1](#), to show that our main results hold when only considering candidates as “treated” who have been named in a tip over many days. These tests cast doubt on coordinated sabotage—which likely occurs in a concentrated moment in time—as the driver of our results.

Panel B of [Figure 3](#) provides supporting evidence against this objection. We demonstrate that—among candidates named in *all* complaints, not just those about vote buying—being named for vote buying is still orthogonal to a wide range of party-level predictors. We restrict the sample to only those candidates who have been named in at least one complaint (including complaints about topics unrelated to vote buying), who could all be possible targets of sabotage, if the sabotage story were true. This provides supporting evidence that sabotaging a rival and naming them for vote buying does not appear to be the tool of one

political party (see the top *Ideology* coefficient) or a coalition of parties with similar structure or values.

Taken together, we view this as strong evidence supporting the identifying assumption that variation in the number of complaints is largely driven by a quasi-random combination of *candidate*-level unobserved vote buying behavior that varies within parties and *voter*-level motivation to file a complaint, conditioned on access to the reporting platform (municipality) and knowledge about the candidate (office level and incumbency).

### 3.4 Additional control variables

We control for other variables that may be relevant predictors of winning. First, we use a widely used measure of Brazilian party ideology that places parties on a left- to right scale, primarily from Zucco and Power (2024) and supplemented by Borges (2023).<sup>14</sup> We imputed ideology values for missing party-year pairs (explained in greater detail in Appendix B). The ideology measure indicates parties’ position on a left-to-right scale, from -1 to +1. The mean ideology score corresponds to a center-right position (Table 1).

Second, we control for candidate-level predictors of electoral outcomes, obtained from the Supreme Electoral Authority (TSE). We use publicly available data about campaign resources (Table 1 shows that the mean campaign has R\$16,794.54 (USD \$3,250) when the variable is unlogged, though this varies significantly by office level), as well as a range of demographic characteristics, including candidate gender, race, age, and education level.

Finally, we control for a range of factors that may also predict municipal-level awareness or usage of the electronic platforms. These variables correspond to the municipality in

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14. Among other alternatives, Zucco and Power (2024) is widely regarded as the most comprehensive source about political party ideology in Brazil. Several studies on Brazilian politics in the literature employ this dataset. See Amorim Neto and Acácio (2025), Palanza et al. (2025), Tarouco (2024), and Paiva et al. (2026).

which the candidate’s campaign was focused.<sup>15</sup> We control for population, GDP per capita, and urbanization level, obtained from the national census and data collection agency IBGE (*Instituto Brasileiro de Geografia e Estatística*).

### 3.5 Estimation

To investigate the relationship between vote-buying and winning, we estimate a series of OLS models of the following form, indexing over candidate  $i$  and election-year  $t$ :

$$Win_{it} = \beta VoteBuying_{it} + \mathbf{X}\gamma_{it} + \alpha_g + \rho_o + \phi_t + \epsilon_{ig}$$

$Win_{it}$  is the main outcome variable, a dummy variable that takes on a value of 1 if the candidate wins in a particular race. The treatment variable  $VoteBuying_{it}$  takes a value of 1 if the candidate has been mentioned in one or more vote-buying complaints. We estimate alternative models using indicators for the sub-components of the vote-buying variable, and using count variables to measure the effects of vote-buying on the intensive margin. The coefficient of interest is  $\hat{\beta}$ , the OLS estimate for the effect of being named in a vote buying complaint (indicator variable) or the marginal effect of being named in *more* vote buying complaints (count variable) on winning.  $\mathbf{X}$  is an optional vector of covariates, listed in the previous section. We include fixed effects for each geographic unit<sup>16</sup> ( $\alpha_g$ ), office level ( $\rho_o$ ), and election-year ( $\phi_t$ ), and report heteroskedasticity-robust standard errors clustered at the geographic level.

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15. For the 2020 elections at the municipal level, the municipality in which the campaign is focused is the one in which the candidate runs. For the 2018 state-level races, we use the municipality in which the candidate gets the most votes as a proxy for where their campaign was focused.

16. E.g.,  $g$  corresponds to the specific municipality in which candidates run in the 2020 local elections, but to the entire state in 2018, since statewide elections are single district.

Table 2: Effect of Vote-Buying on Winning

|                   | (1)                 | (2)                 | (3)                 | (4)                 | (5)                 | (6)                 | (7)                 | (8)                 | (9)                 | (10)                |
|-------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Vote Buying       | 0.216***<br>(0.010) | 0.218***<br>(0.010) | 0.216***<br>(0.010) | 0.219***<br>(0.010) | 0.208***<br>(0.009) | 0.209***<br>(0.009) | 0.160***<br>(0.010) | 0.163***<br>(0.009) | 0.147***<br>(0.009) | 0.161***<br>(0.011) |
| Incumbency        |                     |                     |                     |                     |                     |                     | 0.408***<br>(0.019) | 0.405***<br>(0.018) | 0.382***<br>(0.019) | 0.363***<br>(0.022) |
| Ideology          |                     |                     |                     |                     |                     |                     |                     | 0.007<br>(0.004)    | 0.008<br>(0.005)    | 0.010<br>(0.014)    |
| Campaign Funds    |                     |                     |                     |                     |                     |                     |                     |                     | 0.009***<br>(0.001) | 0.012***<br>(0.001) |
| Party Clientelism |                     |                     |                     |                     |                     |                     |                     |                     |                     | -0.016<br>(0.044)   |
| Num.Obs.          | 27 180              | 27 180              | 27 180              | 27 180              | 26 629              | 26 626              | 26 626              | 26 064              | 24 536              | 9174                |
| R2                | 0.095               | 0.097               | 0.097               | 0.114               | 0.128               | 0.128               | 0.217               | 0.217               | 0.233               | 0.250               |
| DV Mean           | 0.051               | 0.051               | 0.051               | 0.051               | 0.051               | 0.051               | 0.051               | 0.052               | 0.053               | 0.066               |
| Year FE           |                     | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Office FE         |                     |                     | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Geo FE            |                     |                     |                     | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| <i>Controls</i>   |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |
| Demographic       |                     |                     |                     |                     | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Municipality      |                     |                     |                     |                     |                     | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |

*Note:* Vote buying is an indicator variable. + p < 0.1, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

## 4 Results

We present the main results in [Table 2](#). Model 1 shows the simple bivariate correlation between winning and being named in a vote-buying complaint. Models 2-4 add fixed effects for election year, office level, and territorial unit of the election to account for temporal and spatial heterogeneity, as well as variation in usage of vote buying at the office level. Models 5 and 6 add candidate demographic and municipality controls, respectively, and Models 7, 8, and 9 control for incumbency, ideology, and campaign resources. Model 10 controls for predicted clientelism at the party-level, which shrinks the sample size by more than half.<sup>17</sup>

Model 9 (our preferred specification) shows that buying votes leads a large, positive,

17. This is largely because expert surveys on ideology often focus on parties active at the national level and omit local and regional parties.

and statistically significant increase in the chance of winning. Holding all else constant, a one-standard-deviation increase in the residualized *Vote Buying* variable leads to a 4.49 percentage point increase in the probability of victory.<sup>18</sup> A more conservative, correlational interpretation of the findings suggests that buying votes is strongly associated with an increased chance of victory, which is robust to the inclusion of incumbency status, partisan ideology, campaign resources, and party-level tendency to use clientelism. The fixed effects control for unobserved factors that could also affect the probability of winning by election year, for any particular office level, or within any geographic jurisdiction. Across all models, we find a positive, large, and statistically significant relationship between being mentioned in a vote-buying complaint and winning the election.<sup>19</sup>

Table 3 examines the relationship between winning and the different modalities of vote-buying. All three subtypes of vote-buying are also associated with large, statistically significant increases in the probability of victory, even when controlling for party-level clientelism in a reduced sample. When considering each modality alone, patronage has the largest effect on winning, although it is the least common of the subtypes. A one-standard-deviation increase in the residualized patronage indicator leads to a 2.86 percentage point increase in the probability of winning (Model 5). whereas the same increase in the gifts and brokers indicators leads to a 2.48 (Model 1) and 2.22 (Model 3) percentage point increase, respectively. It is easy to see why patronage is influential for so many. One voter writes,

The mayor of [REDACTED] is offering jobs in exchange for votes for his reelection. On the [REDACTED] website, he is appointing several people every day who cannot be appointed, and he appoints a relative to receive the position. It's all in exchange for votes for reelection. He offered me a position, but I didn't want it.

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18. Following best practices documented in Mummolo and Peterson (2018), we residualize the treatment variable with respect to the year, office-level, and geographic fixed effects.

19. Table D3 and Table D4 re-estimate the main models with two-way clustered standard errors at the geographic-office level, and the results are unchanged.

Table 3: Effect of Types of Vote-Buying on Winning, by subtype

|                   | (1)                 | (2)                 | (3)                 | (4)                 | (5)                 | (6)                 | (7)                 | (8)                 |
|-------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Gifts             | 0.170***<br>(0.012) | 0.183***<br>(0.014) |                     |                     |                     |                     | 0.109***<br>(0.016) | 0.104***<br>(0.018) |
| Brokers           |                     |                     | 0.152***<br>(0.008) | 0.175***<br>(0.013) |                     |                     | 0.082***<br>(0.010) | 0.100***<br>(0.015) |
| Patronage         |                     |                     |                     |                     | 0.196***<br>(0.016) | 0.243***<br>(0.026) | 0.079***<br>(0.020) | 0.121***<br>(0.030) |
| Party Clientelism |                     | -0.015<br>(0.045)   |                     | -0.011<br>(0.045)   |                     | -0.006<br>(0.052)   |                     | -0.019<br>(0.045)   |
| Incumbency        | 0.383***<br>(0.019) | 0.364***<br>(0.022) | 0.386***<br>(0.018) | 0.364***<br>(0.023) | 0.408***<br>(0.018) | 0.390***<br>(0.022) | 0.366***<br>(0.018) | 0.342***<br>(0.022) |
| Ideology          | 0.009+<br>(0.005)   | 0.010<br>(0.015)    | 0.009+<br>(0.005)   | 0.009<br>(0.014)    | 0.011*<br>(0.005)   | 0.010<br>(0.015)    | 0.008<br>(0.005)    | 0.009<br>(0.014)    |
| Campaign Funds    | 0.010***<br>(0.001) | 0.012***<br>(0.001) | 0.010***<br>(0.001) | 0.012***<br>(0.001) | 0.011***<br>(0.001) | 0.014***<br>(0.001) | 0.009***<br>(0.001) | 0.011***<br>(0.001) |
| Num.Obs.          | 24 536              | 9174                | 24 536              | 9174                | 24 536              | 9174                | 24 536              | 9174                |
| R2                | 0.232               | 0.249               | 0.227               | 0.247               | 0.213               | 0.234               | 0.242               | 0.265               |
| DV Mean           | 0.053               | 0.066               | 0.053               | 0.066               | 0.053               | 0.066               | 0.053               | 0.066               |
| Year FE           | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Office FE         | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Geo FE            | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| <i>Controls</i>   |                     |                     |                     |                     |                     |                     |                     |                     |
| Demographic       | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Municipality      | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |

Note: Gifts, Brokers, and Patronage are indicator variables. + p < 0.1, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

When including an intercept for each subtype, all three remain positive and statistically significant predictors of winning, but the magnitude is reordered: gifts has a the largest effect on winning when controlling for the other modalities, followed by brokers, and then by patronage. The tips related to gifts make clear that garden-variety vote-buying is occurring. One voter wrote, “This candidate is buying votes through food baskets, which are being distributed by her campaign manager [REDACTED].” A one-standard-deviation increase in the residualized gifts, brokers, and patronage treatments in the saturated model (Model 7) corresponds to a 1.59, 1.20, and 1.15 percentage point increase in the probability of winning, respectively.

Our results suggest that candidates who engage in *more* vote-buying are more likely to win, even when controlling for their incumbency, ideology, available campaign resources, and party-level clientelism. [Table 4](#) uses the logged count of tips as the main independent variable, for both the general vote-buying variable and its subtypes. While we assert that the number of tips about vote buying roughly corresponds to the level of vote buying, we expect there to be more noise than in the binary treatment because we cannot observe how much more vote-buying needs to occur to prompt a voter to file an additional complaint. For the reason, we prefer a more conservative correlational interpretation of the findings in [Table 4](#).

Model 1 reveals that a one-standard-deviation increase in the residualized vote buying variable (an additional 1.61 vote-buying complaints filed about the candidate) is associated with a 5.46 percentage point increase in the probability of winning. Within the subtypes, *more* gifts also appear to be the most strongly associated with winning—an increase of the same magnitude corresponds to a 4.95 percentage point increase in the chance of victory—followed by brokers and patronage at 4.80 and 2.86 percentage points, respectively.

Across all models in [Tables 2-4](#), incumbency remains positive, large, and statistically significant predictors of victory as well. This is of little surprise, given that there are no term

Table 4: Effect of Vote-Buying on Winning, intensive margin

|                   | (1)                 | (2)                 | (3)                 | (4)                 | (5)                 | (6)                 | (7)                 | (8)                 |
|-------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Vote Buying       | 0.115***<br>(0.006) | 0.124***<br>(0.009) |                     |                     |                     |                     |                     |                     |
| Gifts             |                     |                     | 0.147***<br>(0.009) | 0.157***<br>(0.012) |                     |                     |                     |                     |
| Brokers           |                     |                     |                     |                     | 0.137***<br>(0.007) | 0.146***<br>(0.011) |                     |                     |
| Patronage         |                     |                     |                     |                     |                     |                     | 0.185***<br>(0.020) | 0.212***<br>(0.027) |
| Party Clientelism |                     | -0.019<br>(0.043)   |                     | -0.018<br>(0.044)   |                     | -0.012<br>(0.045)   |                     | -0.004<br>(0.051)   |
| Incumbency        | 0.356***<br>(0.017) | 0.333***<br>(0.022) | 0.367***<br>(0.017) | 0.345***<br>(0.022) | 0.369***<br>(0.017) | 0.348***<br>(0.023) | 0.406***<br>(0.017) | 0.391***<br>(0.022) |
| Ideology          | 0.007<br>(0.005)    | 0.008<br>(0.014)    | 0.008<br>(0.005)    | 0.009<br>(0.014)    | 0.008<br>(0.005)    | 0.007<br>(0.014)    | 0.011*<br>(0.004)   | 0.010<br>(0.015)    |
| Campaign Funds    | 0.009***<br>(0.001) | 0.011***<br>(0.001) | 0.010***<br>(0.001) | 0.012***<br>(0.001) | 0.010***<br>(0.001) | 0.012***<br>(0.001) | 0.011***<br>(0.001) | 0.014***<br>(0.001) |
| Num.Obs.          | 24 536              | 9174                | 24 536              | 9174                | 24 536              | 9174                | 24 536              | 9174                |
| R2                | 0.249               | 0.271               | 0.241               | 0.262               | 0.238               | 0.261               | 0.212               | 0.233               |
| DV Mean           | 0.053               | 0.066               | 0.053               | 0.066               | 0.053               | 0.066               | 0.053               | 0.066               |
| Year FE           | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Office FE         | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Geo FE            | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| <i>Controls</i>   |                     |                     |                     |                     |                     |                     |                     |                     |
| Demographic       | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Municipality      | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |

*Note:* Vote Buying, Gifts, Brokers, and Patronage are logged counts of complaints. + p < 0.1, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

limits for legislative offices and most of the offices included in this study (senator, federal deputy, state deputy, and city councilor) are legislative. While the office-level fixed effects ensure that the models are only comparing gubernatorial campaigns with each other, or state deputy campaigns with each other, the amount of campaign funds also remains an important predictor of success. Neither ideology nor party-level clientelism are influential predictors of victory when accounting for vote buying, incumbency, and campaign funds, which is somewhat surprising given the rise of the far right in Brazilian politics that occurred during the study period (2018-2020) or the scholarly emphasis on the political power of clientelistic machine parties like the PMDB, the *Partido do Movimento Democrático Brasileiro* (Hagopian 2014; Layton et al. 2021; Mainwaring et al. 2018).

For whom, and where are these vote-buying strategies more likely to be successful? We interact candidate- and municipality-level variables to probe the heterogeneous effects. First, we interact the vote buying indicator with candidate-level campaign variables in Table 5. Model 1 shows there may be a marginal added benefit for incumbents who use vote buying vis-à-vis challengers, but the effect size is small and only statistically distinguishable from zero at the  $p < 0.1$  level. Vote buying and incumbency remain large, positive, and statistically significant, suggesting that they both have a positive effect on the chance of winning, but that these channels largely operate independently of each other. The second finding (Models 3-4) suggests that vote-buying has no differential impact on the probability of success for candidates on the left versus those on the right. Third, Models 5-6 reveal that more campaign funds amplify the effect of vote buying (Model 5), which could simply mean that candidates with larger purses are able to buy *more* votes, and thus increase their chance of winning. However, the negative and significant coefficient on the count variable in Model 6 suggests that there are perhaps decreasing returns to vote buying for the most well-resourced candidates.

Table 5: Effect of vote-buying on winning, heterogeneous effects

|                              | Model 1             | Model 2             | Model 3             | Model 4             | Model 5             | Model 6             |
|------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Vote buying x Incumbency     | 0.068+<br>(0.039)   | −0.012<br>(0.016)   |                     |                     |                     |                     |
| Vote buying x Ideology       |                     |                     | 0.045<br>(0.028)    | 0.019<br>(0.020)    |                     |                     |
| Vote buying x Campaign Funds |                     |                     |                     |                     | 0.025***<br>(0.003) | −0.001**<br>(0.000) |
| Vote buying                  | 0.142***<br>(0.009) | 0.117***<br>(0.006) | 0.137***<br>(0.011) | 0.110***<br>(0.009) | −0.057**<br>(0.018) | 0.022***<br>(0.005) |
| Incumbency                   | 0.348***<br>(0.029) | 0.366***<br>(0.024) | 0.382***<br>(0.019) | 0.356***<br>(0.017) | 0.362***<br>(0.018) | 0.405***<br>(0.018) |
| Ideology                     | 0.008+<br>(0.005)   | 0.007<br>(0.005)    | 0.003<br>(0.003)    | 0.004<br>(0.003)    | 0.008<br>(0.005)    | 0.009*<br>(0.004)   |
| Campaign Funds               | 0.009***<br>(0.001) | 0.009***<br>(0.001) | 0.009***<br>(0.001) | 0.009***<br>(0.001) | 0.007***<br>(0.001) | 0.011***<br>(0.001) |
| Vote buying IV               | dummy               | count               | dummy               | count               | dummy               | count               |
| Num.Obs.                     | 24 536              | 24 536              | 24 536              | 24 536              | 24 536              | 24 536              |
| R2                           | 0.234               | 0.249               | 0.234               | 0.249               | 0.245               | 0.215               |
| Year FE                      | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Office FE                    | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Geo FE                       | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| <i>Controls</i>              |                     |                     |                     |                     |                     |                     |
| Demographic                  | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Municipality                 | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |

Note: + p &lt; 0.1, \* p &lt; 0.05, \*\* p &lt; 0.01, \*\*\* p &lt; 0.001

## 4.1 Robustness

We conduct a range of robustness and sensitivity checks, beginning with a range of alternative model specifications. We estimate a logit model (Table D5), given our focus on a binary outcome. To account for the overdispersed count independent variables, we estimate negative binomial (Table D6) and poisson quasi-maximum likelihood (Table D7) specifications. All findings mirror the main results for the general vote-buying variable and its sub-components. To support our claims that the main findings have a causal interpretation, we use matching estimators (Iacus et al. 2019) to prune dissimilar candidates from the candidate pool, and compare vote-buyers with non-vote-buyers (Table D8).<sup>20</sup> Though the sample is reduced by approximately 40%, the point estimates are nearly identical in magnitude and significance to the main findings.

Next, we address concerns about strategic sabotage. If individuals are filing vote-buying complaints about rival candidates who are *not* vote-buying—either to damage their reputation with the public or to get them thrown out of the race—this could increase measurement error in our independent variable. We posit that, if strategic sabotage is occurring, we are more likely to observe it on concentrated days (e.g., if campaign staffers receive a missive to file a tip about a rival, they might file the tip shortly after receiving the missive within hours or minutes of each other). In contrast, if a candidate is mentioned in voter tips throughout the campaign period, they or their team are more likely to be engaging in vote-buying behaviors.

Building on this logic, we reconstruct the independent variable to test against the possibility of strategic sabotage. We assign a value of 1 to candidates who were mentioned in vote-buying complaints on 5 or more different days, and 0 otherwise. Table D9 shows that the results for the general vote-buying indicator and its sub-components hold, and are

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20. We use coarsened exact matching to pair candidates who have at least one vote-buying complaint with those who have none, matching on ideology, incumbency, race, gender, age, and education level.

slightly larger in magnitude than the main findings. We interpret these findings not only as a sensitivity test of the independent variable. They also suggest that candidates who use vote-buying extensively (throughout the campaign period) experience greater returns to vote-buying and are more likely to win. That these point estimates are larger than those in the main findings speaks to open questions about why clientelism is so persistent.

Another possible critique, drawing from a vast literature in Brazilian politics, is that the ideology term is not properly specified, and a linear representation of ideology is a poor predictor of clientelism. Theories about Brazil’s powerful political *centrão* (in English, the “Big Center”) describe these ideologically centrist parties as pragmatic and clientelistic, rather than programmatic (Mainwaring et al. 2018). [Table D10](#) and [Table D11](#) re-estimate the main findings controlling for ideology as a squared term to capture this non-linearity. All results support the main findings, showing that there is even *within-centrão* variation in the likelihood of using vote-buying strategies, and that this variation maps onto electoral success.

We condition the sample in two additional ways to further examine the relationship between vote buying and winning within groups of similar candidates. First, we focus only on city council candidates in the 2020 election and omit the office-level fixed effect. The database contains the most complaints about city council candidates, so there is ample sample size to conduct the analysis within this group, but more importantly, we consider local candidates as more likely to use vote-buying strategies because of their proximity to the voter. This assertion is supported by existing studies of local electoral politics in Rio de Janeiro (Arias 2017; Gay 1993, 1999; Trudeau 2024). [Table D12](#) and [Table D13](#) dovetail with the main findings.

Second, we limit the sample to only incumbents, who have a major advantage vis-à-vis challengers in offices of every level. They have access to the political machine, higher name recognition, and perhaps better access to public sector brokers or benefits than their

competitors. Even when limiting the sample to incumbents ( $N = 734$  across both election-years), we find that vote-buying is a significant predictor of electoral success, as well as for the brokers and the gifts sub-types (Table D14 and Table D15). Though the point estimate for the patronage subtype is similar to the main findings, it is imprecisely estimated.

## 5 Conclusion and Implications

We care about the relationship between vote buying and winning not only because vote buying is illegal or gives certain candidates an unfair advantage, but also because it is known to reduce the quality of democracy and accountability (Magaloni 2006; Stokes 2005) and impede economic development and social welfare (Bates and Bates 1981; Diaz-Cayeros et al. 2016). Existing explanations for clientelism’s persistence often focus on voter incentives (Cantú 2019; Kaba 2022; Nichter 2008, 2018), especially why poor voters accept private benefits in exchange for political support. Yet this mounting evidence on the demand-side only tells only part of the story. Equal evidence is needed to demonstrate whether, and by how much, clientelism helps candidates win. This paper provides supply-side evidence to explain why clientelism remains such a resilient electoral strategy.

The quantitative analyses in this paper show that, in a setting where vote buying is widespread, its use pays off at the ballot box. This payoff is not confined to one variety of clientelism: promises of patronage, the distribution of gifts, and broker-mediated strategies that leverage influence through social or communal networks are all associated with electoral success. We find that candidates who seemingly use *more* clientelism are also more likely to win. These relationships hold when accounting for a wide range of known predictors of victory, including incumbency, campaign funds, ideology, and candidate demographics, and across several alternative specifications and samples of candidates. Candidates who either resolve not to buy votes or cannot afford to do so—like the two candidates interviewed in

[Section 2](#)—face an uphill battle when their competitors use clientelistic strategies.

These findings point to two unresolved questions. First, future work should examine the microfoundations of the decision to use or reject clientelism, in the vein of Weitz-Shapiro (2014). Financial constraints may prevent some candidates from buying votes, but others may opt out because they fear detection or legal sanctions, anticipate reputational costs, or object to the practice itself. When the returns to clientelism are so high, what determines when and why some candidates buy votes? Second, more research is needed to understand how and why candidates choose among different clientelistic strategies. The qualitative evidence presented in this paper suggests that the repertoire of vote-buying strategies is evolving rapidly as candidates adapt their offerings and attempt to outbid their competitors.

This paper has important implications for electoral integrity and accountability during campaigns. If vote buying increases the probability of victory, effectively deterring it requires changing the incentives candidates face. Electoral authorities can raise the expected cost of vote buying through more credible monitoring, timely investigations, or more consequential sanctions. Accessible channels for citizen complaints, such as the one used in this paper, are an important component of this effort, but bottom-up efforts may be inadequate in settings such as Rio de Janeiro where vote buying is already widespread. A public servant in Rio de Janeiro interviewed for this study emphasized the need for better policies to shape candidates' incentives:

“The fact is that the electoral authorities’ capacity to monitor and intervene in elections has also declined considerably as the influence of money has grown. When the electoral authorities conducted strong oversight and took forceful action, they were able to curb these practices to some extent. Now, vote buying occurs completely openly—people are out on the street with cash in hand. There are reports of this happening blatantly during elections. So this also concerns the

public authorities' capacity to curb these practices and maintain a presence.”<sup>21</sup>

Vote buying persists not only because voters accept benefits, but because candidates benefit electorally from offering them. Until the incentives change at the candidate-level, clientelism will remain a winning strategy.

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21. Author's interview, 12/06/2024.

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# A Electoral Complaints Dataset

## A.1 Raw data

The underlying database contains incident-level complaints about electoral activity in Rio de Janeiro, Brazil. It spans the 2018 federal and state elections, and the 2020 local elections, and contains metadata about the date and location of the complaint, as well as the candidate’s name, political party, and user-generated text describing the electoral misconduct.

During campaign periods, individuals can submit complaints about candidates, parties, or other electoral actors to the state through four main channels: (1) an anonymous online form to The State Public Prosecutor’s office (MPRJ), (2) an anonymous form in the Pardal app to The Federal Electoral Authority (TSE), (3) written communication to the TRE-RJ by e-mail, a WhatsApp, or Facebook Messenger, and (4) calling the TRE-RJ via a telephone hotline. 98 percent of user-generated electoral complaints are submitted through anonymous channels: the MPRJ’s online form (Figure A1) and TSE’s Pardal app (Figure A2).

The image shows a screenshot of the MPRJ (Ministério Público do Estado do Rio de Janeiro) online complaint form. The header includes the MPRJ logo and the text "MINISTÉRIO PÚBLICO DO ESTADO DO RIO DE JANEIRO". Navigation links include "Conheça o MPRJ", "Serviços", and "Transparência". The breadcrumb trail is "Comunicação > Ouvidoria > Formulário". The form is titled "FORMULÁRIO" and shows a progress bar with four steps: 1. Identificação, 2. Relato (current step), 3. Revisão, and 4. Conclusão. The "Onde aconteceu?" section is highlighted and contains the following fields: "CEP (autopreenchimento)" with a red location pin icon and a "Consultar" button; "Estado (UF)\*" and "Cidade\*" as dropdown menus; "Bairro\*" as a dropdown menu; and "Logradouro\*" as a text input field. Below these are "Nº" and "Complemento" text input fields. The "O que aconteceu?" section is partially visible at the bottom, with the instruction "Relate aqui o fato que você deseja narrar" and a large text area.

Figure A1: MPRJ’s electoral complaint intake form

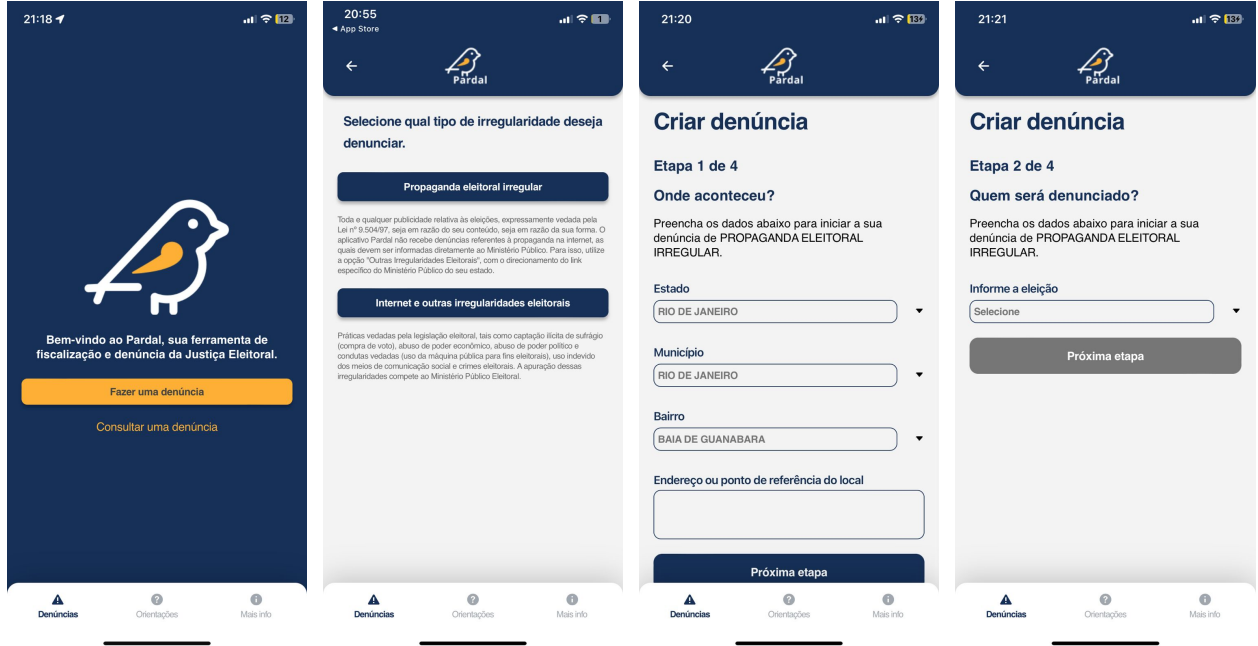


Figure A2: Electoral complaint intake form of TSE’s Pardal

## A.2 Dataset Construction

We take the following steps to construct the dataset used for analysis in this paper. First, we develop a string matching protocol to link the candidates’ names in the complaint database (which were manually entered by citizen users) to the candidates’ full legal names in the TSE (Supreme Electoral Tribunal, *Tribunal Supremo Eleitoral*) database. This is a challenging task because some users incorrectly reported the candidate’s name in the complaints (i) by making spelling errors in writing the name, (ii) by using compound phrases (e.g., a candidate’s name plus their party), (iii) by using candidate’s “ballot box name,” a nickname or a shorthand devised for the elections instead of their legal name, or (iv) by choosing only part of the legal name and/or combination of legal name with the ballot box name. To overcome these challenges, we use the following five-step protocol:

- We first clean user-entered names to remove punctuation and stop words, including party and coalition names.
- We match these user-entered names to the list of candidate names on official electoral records. We find that **xx%** are an exact string match to the candidate legal name or candidate ballot box name. We verify these results by confirming that the party and municipality are a match.
- For the remaining user-entered names in the database with no exact match, we calculate the Jaro-Winkler distance to determine the best possible match. The Jaro-Winkler distance is a multidimensional measurement of the similarity of two strings (Wang

et al. 2017). We pair the name in the official record database with the highest match score to the user-entered name.

- Fourth, we hand-coded the results of the Jaro-Winkler matches to confirm correct matches and, if necessary, replace the incorrect matches. We hand-coded 5,427 cases, taking the following steps:
- We identified incorrect matches and replaced them with the correct formal name through a close read of the complaint text. We denoted the new match by verifying the candidate in the TSE official database. In challenging cases, where the user reported candidate’s name by choosing only part of the legal name and/or combination of legal name with the ballot box name, we took the municipality from which the complaint made into consideration.
- Several matching errors occurred when candidates had the same formal name. In these cases, when the same candidate ran in both elections or different people share the same name, we resolved cases by considering the details in the complaint text and searching TSE database.
- In some cases, the complaint is about many candidates. In these cases, we created duplicate entries with the same complaint metadata for each candidate name mentioned.
- There are complaints that only mention the name of a coalition or the party rather than a specific candidate. In cases where we cannot identify a specific candidate after reading the text of the complaint, we remove these cases from the dataset (**only xx% of the corpus**). Even fewer complaints only mention unidentifiable expressions as the subject of electoral misconduct, such as *vereadors* (councilor) or *eles* (them). After confirming that the complaint text does not specify any name, we removed these cases. All these cases only comprised **1.3% (N)** of the total corpus of complaints.
- A small number of complaints (**xx%**) do not mention candidates, coalition, or parties, but non-candidates including candidates who ran election in previous periods, pre-candidates, important political figures and non-political figures such as journalists and even singers. We removed these cases.
- Fifth, once our hand-coding process was complete, we reconciled our hand-coded matches to ensure inter-coder reliability. Upon completion, 96% of complaints in the entire corpus were either exactly matched to a candidate name or verified through the Jaro-Winkler and hand-coding process.

To finalize the database, we then join the complaints with electoral data, using the formal names as a crosswalk. We join our database with various TSE official datasets containing: (1) electoral returns and outcomes, (2) candidate demographics and characteristics, (3) candidate campaign funds. Lastly, we geocode the complaints. We clean and text process the user-entered location information, and then use Google Maps and ArcGIS Pro to geolocate each complaint. For complaints without a specific address, we located them either a) in the geometric centroid of the neighborhood or b) in the geometric centroid of the municipality mentioned.

### A.3 Complaint Topics

We classified complaints by categories, leveraging text processing tools and by generating original dictionaries of major complaint topics. The initial list of complaint categories was informed by a qualitative reading of a random sample of 1,000 complaints. We list the topics, their broad category, and all the keywords used in dictionary construction in English and Portuguese in [Table A1](#). We also randomly selected a complaint text for each subtopic category and demonstrate them in [Table A2](#).

Table A1: Topic Keywords

| Topics             | Keywords                                                                                                                                                                                                                                                                                                                                                                                                        | Keywords(pt)                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Vote Buying</b> |                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Gifts              | T-shirt, key chains, cap, pen, gift, basic food basket, raffle, gift, brochure, sticker, purchase, money, offer, exchange, cookie, basket, donation, glasses, barbecue, paying, distributing, school kit, bed, patient, toy, drink, food, dinner, concrete, carnival, hospital, cataract, surgery, exam, eye, vision, reais, <b>r\$</b> , issuing, prescription, medicine, therapy, physical therapy, procedure | camiseta, chaveiros, bone, caneta, brinde, cesta basica, sorteio, brinde, folheto, adesivo, compra, dinheiro, oferta, troca, cambio, biscoito, cesta, doac, oculo, churrasco, pagando, distribui, kit escolar, cama, paciente, brinquedo, bebida, comida, jantar, concret, carnaval, hospital, catarata, cirurgia, exame, olho, visao, reais, <b>r\$</b> , emissao, emitindo, prescricao, medicina, terapeutica, fisioterapia, procedimento |
| Patronage          | vacancy, job, offer, promise, civil servant, contract, male public servant, female public servant                                                                                                                                                                                                                                                                                                               | vaga, emprego, oferta, promessa, servidor publico, contrat, funcionario publico, funcionaria publica                                                                                                                                                                                                                                                                                                                                        |
| Brokers            | pastor, residents' association, a.m., union, campaign worker, trusted person                                                                                                                                                                                                                                                                                                                                    | pastor, associacao de morador, a.m., sindicato, cabo eleitoral, pessoa de confianca                                                                                                                                                                                                                                                                                                                                                         |

Table A2: Complaint text by Topics

| Topics    | Original Text                                                                                                                                                                                                                                                                                                                                                                                                   | Translation                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Gifts     | Essa candidata esta comprando votos atraves de cestas basicas, que estao sendo distribuidas Pela sua cabo eleitoral [REDACTED].                                                                                                                                                                                                                                                                                 | This candidate is buying votes through food baskets, which are being distributed by her campaign manager [REDACTED].                                                                                                                                                                                                                                                                                                  |
| Patronage | prefeito de [REDACTED] esta dando emprego troca de votos para sua reeleicao, no site da [REDACTED] ele esta nomeando varias pessoas todos os dias quem nao pode ser nomeado, ele nomeia um parente para receber. Tudo troco de voto para reeleicao, me ofereceu eu nao quis.                                                                                                                                    | The mayor of [REDACTED] is offering jobs in exchange for votes for his reelection. On the [REDACTED] website, he is appointing several people every day who cannot be appointed, and he appoints a relative to receive the position. It's all in exchange for votes for reelection. He offered me a position, but I didn't want it.                                                                                   |
| Brokers   | Pastor [REDACTED], pai do candidato pastor presidente da [REDACTED], [REDACTED] responsavel por todas as [REDACTED] de [REDACTED] da [REDACTED], usou pulpitito para pedir votos para seu filho, pre candidato vereador em [REDACTED], se utilizando obviamente, da sua posicao de autoridade para coagir os fieis. No link possivel ver pedido partir de 22:40, mais precisamente em 24:45 ele menciona filho. | Pastor [REDACTED], father of the candidate for president of the [REDACTED], responsible for all [REDACTED] in [REDACTED] in the [REDACTED], used the pulpit to ask for votes for his son, a pre-candidate for city council in [REDACTED], obviously using his position of authority to coerce the faithful. In the link, you can see the request starting at 22:40, and more precisely at 24:45, he mentions his son. |

Note:DeepL Pro is used in translations of texts.

## B Candidate- and Party-level Variables

We link the electoral complaints data to other candidate- and party-level variables. Using the candidate’s party ID, we link our data to (1) 2018 Varieties of Party Identity and Organization(V-Party) (Lindberg et al. 2022), (2) 2020 Chapel Hill Expert Survey Latin America (CHES) (Martínez Gallardo et al. 2021), (3) Zucco and Power 2024 and (4) Borges 2023 datasets for party-year characteristics, including their propensity to use clientelism and patronage and their left-right ideology score.

- **Party-level Clientelism variable:** We merged our dataset with two expert surveys, namely V-party and CHES, to mainly acquire party-level clientelism variable. We use two different datasets because V-Party provides data for 2018 and CHES for only 2020. V-party measures clientelism with the following question:

*”To what extent do the party and its candidates provide targeted and excludable (clientelistic) goods and benefits - such as consumer goods, cash or preferential access to government services - in an effort to keep and gain votes?”*

Similarly, CHES measures it with the following:

*”Sometimes, candidates and parties PROMISE OR GIVE voters some of the following things in exchange for their support:*

- *Consumer goods.*
- *Preferential access to public social policy schemes.*
- *Access to employment in the public sector or in the publicly regulated private sector.*
- *Preferential access to government contracts or procurement opportunities.*
- *Influence or promise to influence the application of regulatory rules issues by government agencies.*

*HOW MUCH EFFORT do candidates and parties expend to attract voters by providing these goods and services?”*

We rescale these measures so that they both range from 0 to 1 and create *Clientelism (party-level)* variable by combining the two.

- **Ideology variable:** The ideology measure in our dataset scales from -1 (most left) to +1 (most right) consistent with the data sources we use. The data for party left-right ideology scores mainly comes from Zucco and Power (2024). Their data reports party ideologies in two relevant years for our study, namely 2017 and 2021. We use their 2017 data as a proxy of our observations in 2018 and their 2021 data as a proxy of our observations from 2020. We use Borges (2023)’ ideology data to cover four party-year pairs for which Zucco and Power (2024) is missing. At the end of this process,

we cover 76 percent of our candidate-level observations. After ensuring CHES and V-party datasets do not provide desired data, we start to impute party ideology values to replace missing scores for 25 party-year pair. We impute missing ideology value of a particular party by calculating the weighted average of other parties' ideology which are in coalition with that particular party. The first round of imputation manage to cover 97.3 percent of our dataset. We then repeat the process for the second layer of imputation, and we end up covering 97.8 percent of our dataset after this step. To identify the source of the ideology value, we create the `id_source` variable which takes the value of 1 if it is from Zucco and Power(2024) , 2 if it is from Borges(2023) and 3 if it is imputed by our calculations.

## C Control Variables

Our models include some important control variables, listed below. In all regression tables, we specify when these variables are included.

- **Candidate demographics:** Demographic variables we employ are age, race, gender and education level. The reference category for race is "white" and for gender is male. Both age and education levels are numeric variables. The source of these variables is TSE.
- **Incumbent:** We create a dummy incumbency variable based on candidates' occupation and the offices they run for. We code mayors, councilors, governors, senators and deputies who are running for the same office in the relevant elections as incumbents. The source of data is TSE.
- **Campaign funds** We use donations to candidates as a proxy of campaign funding. The source of donations data is TSE.

## D Appendix Tables

Table D3: Effect of Vote-Buying on Winning, Two-Way SEs

|                   | Model 1             | Model 2             | Model 3             | Model 4             | Model 5             | Model 6             | Model 7             | Model 8             | Model 9             | Model 10            |
|-------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Vote Buying       | 0.216***<br>(0.010) | 0.218***<br>(0.008) | 0.216***<br>(0.008) | 0.219***<br>(0.009) | 0.208***<br>(0.008) | 0.209***<br>(0.007) | 0.160***<br>(0.009) | 0.163***<br>(0.007) | 0.147***<br>(0.006) | 0.161***<br>(0.006) |
| Incumbent         |                     |                     |                     |                     |                     |                     | 0.408***<br>(0.014) | 0.405***<br>(0.011) | 0.382***<br>(0.013) | 0.363***<br>(0.016) |
| ideology          |                     |                     |                     |                     |                     |                     |                     | 0.007<br>(0.006)    | 0.008<br>(0.006)    | 0.010<br>(0.021)    |
| Campaign Spending |                     |                     |                     |                     |                     |                     |                     |                     | 0.009***<br>(0.000) | 0.012***<br>(0.000) |
| Party Clientelism |                     |                     |                     |                     |                     |                     |                     |                     |                     | -0.016<br>(0.058)   |
| Main IV           | dummy               | dummy               | dummy               | dummy               | dummy               | dummy               | dummy               | dummy               | dummy               | dummy               |
| Num.Obs.          | 27 180              | 27 180              | 27 180              | 27 180              | 26 629              | 26 626              | 26 626              | 26 064              | 24 536              | 9174                |
| R2                | 0.095               | 0.097               | 0.097               | 0.114               | 0.128               | 0.128               | 0.217               | 0.217               | 0.233               | 0.250               |
| DV Means          | 0.051               | 0.051               | 0.051               | 0.051               | 0.051               | 0.051               | 0.051               | 0.052               | 0.053               | 0.066               |
| Year FE           |                     | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Office FE         |                     |                     | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Geo FE            |                     |                     |                     | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| <i>Controls</i>   |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |
| Demographic       |                     |                     |                     |                     | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Municipality      |                     |                     |                     |                     |                     | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |

*Note:* Vote buying is an indicator variable. Standard errors are clustered at the geographic-office-level. + p < 0.1, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

Table D4: Effect of Vote-Buying on Winning, intensive margin, Two-Way SEs

|                   | Model 1             | Model 2             | Model 3             | Model 4             | Model 5             | Model 6             | Model 7             | Model 8             |
|-------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Vote Buying       | 0.115***<br>(0.012) | 0.124***<br>(0.013) |                     |                     |                     |                     |                     |                     |
| Gifts             |                     |                     | 0.147***<br>(0.018) | 0.157***<br>(0.019) |                     |                     |                     |                     |
| Brokers           |                     |                     |                     |                     | 0.137***<br>(0.018) | 0.146***<br>(0.018) |                     |                     |
| Patronage         |                     |                     |                     |                     |                     |                     | 0.185**<br>(0.037)  | 0.212**<br>(0.039)  |
| Incumbent         | 0.356***<br>(0.003) | 0.333***<br>(0.007) | 0.367***<br>(0.003) | 0.345***<br>(0.005) | 0.369***<br>(0.003) | 0.348***<br>(0.009) | 0.406***<br>(0.005) | 0.391***<br>(0.008) |
| Ideology          | 0.007<br>(0.006)    | 0.008<br>(0.020)    | 0.008<br>(0.006)    | 0.009<br>(0.021)    | 0.008<br>(0.005)    | 0.007<br>(0.020)    | 0.011<br>(0.005)    | 0.010<br>(0.022)    |
| Campaign Spending | 0.009***<br>(0.001) | 0.011***<br>(0.001) | 0.010***<br>(0.001) | 0.012***<br>(0.000) | 0.010***<br>(0.001) | 0.012***<br>(0.001) | 0.011***<br>(0.000) | 0.014***<br>(0.000) |
| Party Clientelism |                     | -0.019<br>(0.056)   |                     | -0.018<br>(0.058)   |                     | -0.012<br>(0.059)   |                     | -0.004<br>(0.067)   |
| Main IV           | count               | count               | count               | count               | count               | count               | count               | count               |
| Num.Obs.          | 24 536              | 9174                | 24 536              | 9174                | 24 536              | 9174                | 24 536              | 9174                |
| R2                | 0.249               | 0.271               | 0.241               | 0.262               | 0.238               | 0.261               | 0.212               | 0.233               |
| DV Means          | 0.053               | 0.066               | 0.053               | 0.066               | 0.053               | 0.066               | 0.053               | 0.066               |
| Year FE           | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Office FE         | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Geo FE            | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Demographic       | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Municipality      | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |

*Note:* Standard errors are clustered at the geographic-office-level. + p < 0.1, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

Table D5: Logit Model:Effect of Vote-Buying on Winning

|                     | Model 1             | Model 2             | Model 3             | Model 4             | Model 5             | Model 6             | Model 7             | Model 8             |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Vote Buying         | 1.478***<br>(0.088) | 1.589***<br>(0.124) |                     |                     |                     |                     |                     |                     |
| Gifts               |                     |                     | 1.361***<br>(0.097) | 1.402***<br>(0.119) |                     |                     |                     |                     |
| Brokers             |                     |                     |                     |                     | 1.329***<br>(0.096) | 1.508***<br>(0.129) |                     |                     |
| Patronage           |                     |                     |                     |                     |                     |                     | 1.102***<br>(0.128) | 1.323***<br>(0.193) |
| Incumbent           | 1.593***<br>(0.111) | 1.576***<br>(0.177) | 1.643***<br>(0.111) | 1.631***<br>(0.186) | 1.619***<br>(0.110) | 1.599***<br>(0.186) | 1.741***<br>(0.109) | 1.756***<br>(0.190) |
| Ideology            | 0.146<br>(0.156)    | 0.287<br>(0.493)    | 0.154<br>(0.152)    | 0.267<br>(0.494)    | 0.163<br>(0.155)    | 0.270<br>(0.498)    | 0.169<br>(0.144)    | 0.258<br>(0.509)    |
| Campaign Funds      | 0.859***<br>(0.074) | 0.832***<br>(0.088) | 0.883***<br>(0.074) | 0.857***<br>(0.087) | 0.886***<br>(0.075) | 0.848***<br>(0.088) | 0.950***<br>(0.074) | 0.917***<br>(0.084) |
| Clientelism (party) |                     | -1.357<br>(1.365)   |                     | -1.352<br>(1.361)   |                     | -1.126<br>(1.424)   |                     | -1.227<br>(1.592)   |
| Num.Obs.            | 24 536              | 9170                | 24 536              | 9170                | 24 536              | 9170                | 24 536              | 9170                |
| R2                  | 0.421               | 0.422               | 0.414               | 0.412               | 0.412               | 0.414               | 0.397               | 0.398               |
| DV Means            | 0.053               | 0.066               | 0.053               | 0.066               | 0.053               | 0.066               | 0.053               | 0.066               |
| Year FE             | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Office FE           | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Geo FE              | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| <i>Controls</i>     |                     |                     |                     |                     |                     |                     |                     |                     |
| Demographic         | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Municipality        | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |

Note: + p &lt; 0.1, \* p &lt; 0.05, \*\* p &lt; 0.01, \*\*\* p &lt; 0.001

Table D6: Negative Binomial:Effect of Vote-Buying on Winning, 2018-2020 Elections

|                     | Model 1             | Model 2             | Model 3             | Model 4             | Model 5             | Model 6             | Model 7             | Model 8             |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Vote Buying         | 0.446***<br>(0.036) | 0.475***<br>(0.041) |                     |                     |                     |                     |                     |                     |
| Gifts               |                     |                     | 0.436***<br>(0.043) | 0.470***<br>(0.050) |                     |                     |                     |                     |
| Brokers             |                     |                     |                     |                     | 0.464***<br>(0.041) | 0.480***<br>(0.048) |                     |                     |
| Patronage           |                     |                     |                     |                     |                     |                     | 0.341***<br>(0.075) | 0.435***<br>(0.083) |
| Incumbent           | 0.804***<br>(0.075) | 0.777***<br>(0.127) | 0.858***<br>(0.075) | 0.827***<br>(0.128) | 0.849***<br>(0.076) | 0.832***<br>(0.130) | 0.951***<br>(0.072) | 0.933***<br>(0.123) |
| Ideology            | 0.077<br>(0.100)    | 0.162<br>(0.323)    | 0.079<br>(0.102)    | 0.166<br>(0.337)    | 0.071<br>(0.099)    | 0.155<br>(0.323)    | 0.093<br>(0.093)    | 0.152<br>(0.327)    |
| Campaign Funds      | 0.675***<br>(0.050) | 0.637***<br>(0.057) | 0.708***<br>(0.050) | 0.673***<br>(0.055) | 0.703***<br>(0.050) | 0.665***<br>(0.057) | 0.759***<br>(0.049) | 0.726***<br>(0.053) |
| Clientelism (party) |                     | -1.074<br>(0.877)   |                     | -1.100<br>(0.896)   |                     | -0.987<br>(0.928)   |                     | -0.877<br>(1.001)   |
| Main IV             | count               | count               | count               | count               | count               | count               | count               | count               |
| Num.Obs.            | 24 536              | 9170                | 24 536              | 9170                | 24 536              | 9170                | 24 536              | 9170                |
| R2                  | 0.345               | 0.337               | 0.339               | 0.330               | 0.340               | 0.330               | 0.331               | 0.321               |
| DV Means            | 0.053               | 0.066               | 0.053               | 0.066               | 0.053               | 0.066               | 0.053               | 0.066               |
| Year FE             | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Office FE           | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Geo FE              | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Demographic         | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Municipality        | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |

Note: Count IVs are logged. + p &lt;0.1, \* p &lt;0.05, \*\* p &lt;0.01, \*\*\* p &lt;0.001

Table D7: Poisson QMLE: Effect of Vote-Buying on Winning, 2018-2020 Elections

|                 | Model 1             | Model 2             | Model 3             | Model 4             | Model 5             | Model 6             | Model 7             | Model 8             |
|-----------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Vote Buying     | 0.446***<br>(0.036) | 0.475***<br>(0.041) |                     |                     |                     |                     |                     |                     |
| Gifts           |                     |                     | 0.436***<br>(0.043) | 0.470***<br>(0.050) |                     |                     |                     |                     |
| Brokers         |                     |                     |                     |                     | 0.464***<br>(0.041) | 0.480***<br>(0.048) |                     |                     |
| Patronage       |                     |                     |                     |                     |                     |                     | 0.341***<br>(0.075) | 0.435***<br>(0.083) |
| Incumbent       | 0.804***<br>(0.075) | 0.777***<br>(0.127) | 0.858***<br>(0.075) | 0.827***<br>(0.128) | 0.848***<br>(0.076) | 0.832***<br>(0.130) | 0.951***<br>(0.072) | 0.933***<br>(0.123) |
| Ideology        | 0.077<br>(0.100)    | 0.162<br>(0.323)    | 0.079<br>(0.102)    | 0.166<br>(0.337)    | 0.071<br>(0.099)    | 0.155<br>(0.323)    | 0.093<br>(0.093)    | 0.152<br>(0.327)    |
| Campaign Funds  | 0.675***<br>(0.050) | 0.637***<br>(0.057) | 0.708***<br>(0.050) | 0.673***<br>(0.055) | 0.703***<br>(0.050) | 0.665***<br>(0.057) | 0.759***<br>(0.049) | 0.726***<br>(0.053) |
| Clientelism     |                     | -1.074<br>(0.877)   |                     | -1.100<br>(0.896)   |                     | -0.987<br>(0.928)   |                     | -0.877<br>(1.001)   |
| Main IV         | count               | count               | count               | count               | count               | count               | count               | count               |
| Num.Obs.        | 24 536              | 9170                | 24 536              | 9170                | 24 536              | 9170                | 24 536              | 9170                |
| R2              | 0.345               | 0.337               | 0.339               | 0.330               | 0.340               | 0.330               | 0.331               | 0.321               |
| DV Means        | 0.053               | 0.066               | 0.053               | 0.066               | 0.053               | 0.066               | 0.053               | 0.066               |
| Year FE         | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Office FE       | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Geo FE          | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| <i>Controls</i> |                     |                     |                     |                     |                     |                     |                     |                     |
| Demographic     | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Municipality    | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |

Note: Count IVs are logged. + p &lt; 0.1, \* p &lt; 0.05, \*\* p &lt; 0.01, \*\*\* p &lt; 0.001

Table D8: Matching estimators

|                           | (1)                 | (2)                 |
|---------------------------|---------------------|---------------------|
| Vote Buying               | 0.141***<br>(0.010) | 0.156***<br>(0.013) |
| Incumbent                 | 0.388***<br>(0.022) | 0.347***<br>(0.026) |
| Campaign Funds            | 0.014***<br>(0.001) | 0.016***<br>(0.002) |
| Clientelism (party-level) |                     | 0.004<br>(0.029)    |
| Main IV                   | dummy               | dummy               |
| Num.Obs.                  | 15 844              | 5733                |
| R2                        | 0.236               | 0.249               |
| Year FE                   | ✓                   | ✓                   |
| Office FE                 | ✓                   | ✓                   |
| Geo FE                    | ✓                   | ✓                   |

Both models use coarsened exact matching to generate matches between candidates with at least one vote-buying complaint (“treated”) and those with no vote-buying complaints. We matched on candidate age, gender, education level, race, and party left-right ideology. +  $p < 0.1$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Table D9: Effect of Vote-Buying on Winning, Candidates mentioned on 5+ days

|                     | 1                   | 2                   | 3                   | 4                   | 5                   | 6                   | 7                   | 8                   |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Vote Buying         | 0.265***<br>(0.028) | 0.294***<br>(0.034) |                     |                     |                     |                     |                     |                     |
| Gifts               |                     |                     | 0.270***<br>(0.027) | 0.295***<br>(0.030) |                     |                     |                     |                     |
| Brokers             |                     |                     |                     |                     | 0.265***<br>(0.026) | 0.311***<br>(0.035) |                     |                     |
| Patronage           |                     |                     |                     |                     |                     |                     | 0.290***<br>(0.030) | 0.314***<br>(0.034) |
| Incumbency          | 0.387***<br>(0.017) | 0.363***<br>(0.024) | 0.389***<br>(0.017) | 0.365***<br>(0.024) | 0.387***<br>(0.017) | 0.358***<br>(0.024) | 0.406***<br>(0.017) | 0.390***<br>(0.023) |
| Campaign Funds      | 0.010***<br>(0.001) | 0.013***<br>(0.001) | 0.010***<br>(0.001) | 0.013***<br>(0.001) | 0.010***<br>(0.001) | 0.013***<br>(0.001) | 0.011***<br>(0.001) | 0.014***<br>(0.001) |
| Clientelism (party) |                     | -0.010<br>(0.044)   |                     | -0.011<br>(0.044)   |                     | -0.010<br>(0.045)   |                     | -0.007<br>(0.052)   |
| Main IV             | dummy               | dummy               | dummy               | dummy               | dummy               | dummy               | dummy               | dummy               |
| Num.Obs.            | 24 536              | 9174                | 24 536              | 9174                | 24 536              | 9174                | 24 536              | 9174                |
| R2                  | 0.229               | 0.251               | 0.227               | 0.249               | 0.227               | 0.254               | 0.215               | 0.235               |
| DV Means            | 0.053               | 0.066               | 0.053               | 0.066               | 0.053               | 0.066               | 0.053               | 0.066               |
| Year FE             | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Office FE           | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Geo FE              | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| <i>Controls</i>     |                     |                     |                     |                     |                     |                     |                     |                     |
| Demographic         | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Municipality        | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |

+ p &lt;0.1, \* p &lt;0.05, \*\* p &lt;0.01, \*\*\* p &lt;0.001

Table D10: Effect of Vote-Buying on Winning, controlling for non-linear ideology

|                  | Model 1             | Model 2             | Model 3             | Model 4             | Model 5             | Model 6             | Model 7             | Model 8             |
|------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Vote Buying      | 0.147***<br>(0.008) | 0.161***<br>(0.011) |                     |                     |                     |                     |                     |                     |
| Gifts            |                     |                     | 0.170***<br>(0.012) | 0.183***<br>(0.014) |                     |                     |                     |                     |
| Brokers          |                     |                     |                     |                     | 0.152***<br>(0.008) | 0.175***<br>(0.013) |                     |                     |
| Patronage        |                     |                     |                     |                     |                     |                     | 0.196***<br>(0.016) | 0.243***<br>(0.026) |
| Incumbency       | 0.382***<br>(0.019) | 0.363***<br>(0.022) | 0.383***<br>(0.019) | 0.364***<br>(0.022) | 0.386***<br>(0.018) | 0.364***<br>(0.023) | 0.408***<br>(0.018) | 0.390***<br>(0.022) |
| Ideology         | 0.008+<br>(0.005)   | 0.010<br>(0.010)    | 0.009+<br>(0.005)   | 0.010<br>(0.010)    | 0.009*<br>(0.005)   | 0.010<br>(0.010)    | 0.011*<br>(0.004)   | 0.011<br>(0.011)    |
| Ideology Squared | -0.001<br>(0.014)   | 0.001<br>(0.021)    | 0.000<br>(0.014)    | 0.002<br>(0.022)    | -0.002<br>(0.014)   | -0.003<br>(0.021)   | -0.002<br>(0.016)   | -0.001<br>(0.023)   |
| Campaign Funds   | 0.009***<br>(0.001) | 0.012***<br>(0.001) | 0.010***<br>(0.001) | 0.012***<br>(0.001) | 0.010***<br>(0.001) | 0.012***<br>(0.001) | 0.011***<br>(0.001) | 0.014***<br>(0.001) |
| Clientelism      |                     | -0.016<br>(0.033)   |                     | -0.013<br>(0.034)   |                     | -0.013<br>(0.034)   |                     | -0.007<br>(0.039)   |
| Main IV          | dummy               | dummy               | dummy               | dummy               | dummy               | dummy               | dummy               | dummy               |
| Num.Obs.         | 24 536              | 9174                | 24 536              | 9174                | 24 536              | 9174                | 24 536              | 9174                |
| R2               | 0.233               | 0.250               | 0.232               | 0.249               | 0.227               | 0.247               | 0.213               | 0.234               |
| DV Means         | 0.053               | 0.066               | 0.053               | 0.066               | 0.053               | 0.066               | 0.053               | 0.066               |
| Year FE          | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Office FE        | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Geo FE           | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| <i>Controls</i>  |                     |                     |                     |                     |                     |                     |                     |                     |
| Demographic      | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Municipality     | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |

Note: + p &lt; 0.1, \* p &lt; 0.05, \*\* p &lt; 0.01, \*\*\* p &lt; 0.001

Table D11: Effect of Vote-Buying on Winning, intensive margin, controlling for non-linear ideology

|                  | Model 1             | Model 2             | Model 3             | Model 4             | Model 5             | Model 6             | Model 7             | Model 8             |
|------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Vote Buying      | 0.115***<br>(0.006) | 0.124***<br>(0.009) |                     |                     |                     |                     |                     |                     |
| Gifts            |                     |                     | 0.147***<br>(0.009) | 0.157***<br>(0.012) |                     |                     |                     |                     |
| Brokers          |                     |                     |                     |                     | 0.137***<br>(0.007) | 0.146***<br>(0.011) |                     |                     |
| Patronage        |                     |                     |                     |                     |                     |                     | 0.185***<br>(0.020) | 0.212***<br>(0.027) |
| Incumbency       | 0.356***<br>(0.017) | 0.333***<br>(0.022) | 0.367***<br>(0.017) | 0.345***<br>(0.022) | 0.369***<br>(0.017) | 0.348***<br>(0.023) | 0.406***<br>(0.017) | 0.391***<br>(0.022) |
| Ideology Squared | 0.001<br>(0.013)    | -0.001<br>(0.017)   | 0.001<br>(0.014)    | 0.000<br>(0.020)    | 0.000<br>(0.014)    | -0.003<br>(0.019)   | -0.002<br>(0.016)   | -0.002<br>(0.023)   |
| Campaign Funding | 0.009***<br>(0.001) | 0.011***<br>(0.001) | 0.010***<br>(0.001) | 0.012***<br>(0.001) | 0.010***<br>(0.001) | 0.012***<br>(0.001) | 0.011***<br>(0.001) | 0.014***<br>(0.001) |
| Clientelism      |                     | -0.020<br>(0.034)   |                     | -0.018<br>(0.034)   |                     | -0.014<br>(0.035)   |                     | -0.006<br>(0.038)   |
| Main IV          | count               | count               | count               | count               | count               | count               | count               | count               |
| Num.Obs.         | 24 536              | 9174                | 24 536              | 9174                | 24 536              | 9174                | 24 536              | 9174                |
| R2               | 0.249               | 0.271               | 0.241               | 0.262               | 0.238               | 0.261               | 0.212               | 0.233               |
| DV Means         | 0.053               | 0.066               | 0.053               | 0.066               | 0.053               | 0.066               | 0.053               | 0.066               |
| Year FE          | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Office FE        | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Geo FE           | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| <i>Controls</i>  |                     |                     |                     |                     |                     |                     |                     |                     |
| Demographic      | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Municipality     | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |

Note: Count IVs are logged. + p < 0.1, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

Table D12: Effect of Vote-Buying on Winning, only city councilors

|                  | Model 1             | Model 2             | Model 3             | Model 4             | Model 5             | Model 6             | Model 7             | Model 8             |
|------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Vote Buying      | 0.151***<br>(0.009) | 0.165***<br>(0.013) |                     |                     |                     |                     |                     |                     |
| Gifts            |                     |                     | 0.178***<br>(0.013) | 0.190***<br>(0.016) |                     |                     |                     |                     |
| Brokers          |                     |                     |                     |                     | 0.153***<br>(0.010) | 0.174***<br>(0.017) |                     |                     |
| Patronage        |                     |                     |                     |                     |                     |                     | 0.198***<br>(0.021) | 0.248***<br>(0.035) |
| Incumbent        | 0.371***<br>(0.021) | 0.351***<br>(0.026) | 0.373***<br>(0.021) | 0.356***<br>(0.026) | 0.379***<br>(0.020) | 0.359***<br>(0.026) | 0.403***<br>(0.020) | 0.386***<br>(0.027) |
| Ideology         | 0.003<br>(0.004)    | -0.010<br>(0.007)   | 0.004<br>(0.004)    | -0.010<br>(0.007)   | 0.004<br>(0.004)    | -0.010<br>(0.007)   | 0.006<br>(0.004)    | -0.012<br>(0.008)   |
| Campaign Funding | 0.010***<br>(0.001) | 0.012***<br>(0.001) | 0.010***<br>(0.001) | 0.012***<br>(0.001) | 0.010***<br>(0.001) | 0.012***<br>(0.001) | 0.011***<br>(0.001) | 0.014***<br>(0.001) |
| Clientelism      |                     | 0.044<br>(0.032)    |                     | 0.048<br>(0.032)    |                     | 0.051<br>(0.032)    |                     | 0.064*<br>(0.032)   |
| Main IV          | dummy               | dummy               | dummy               | dummy               | dummy               | dummy               | dummy               | dummy               |
| Num.Obs.         | 21 522              | 7870                | 21 522              | 7870                | 21 522              | 7870                | 21 522              | 7870                |
| R2               | 0.221               | 0.238               | 0.220               | 0.236               | 0.213               | 0.232               | 0.197               | 0.218               |
| DV Means         | 0.052               | 0.062               | 0.052               | 0.062               | 0.052               | 0.062               | 0.052               | 0.062               |
| Year FE          | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Geo FE           | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| <i>Controls</i>  |                     |                     |                     |                     |                     |                     |                     |                     |
| Demographic      | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Municipality     | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |

Note: + p &lt;0.1, \* p &lt;0.05, \*\* p &lt;0.01, \*\*\* p &lt;0.001

Table D13: Effect of Vote-Buying on Winning, intensive margin, only city councilors

|                  | Model 1             | Model 2             | Model 3             | Model 4             | Model 5             | Model 6             | Model 7             | Model 8             |
|------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Vote Buying      | 0.130***<br>(0.008) | 0.141***<br>(0.011) |                     |                     |                     |                     |                     |                     |
| Gifts            |                     |                     | 0.170***<br>(0.012) | 0.182***<br>(0.014) |                     |                     |                     |                     |
| Brokers          |                     |                     |                     |                     | 0.160***<br>(0.010) | 0.173***<br>(0.015) |                     |                     |
| Patronage        |                     |                     |                     |                     |                     |                     | 0.224***<br>(0.025) | 0.261***<br>(0.035) |
| Incumbent        | 0.356***<br>(0.020) | 0.333***<br>(0.026) | 0.367***<br>(0.020) | 0.343***<br>(0.026) | 0.370***<br>(0.019) | 0.350***<br>(0.026) | 0.401***<br>(0.020) | 0.386***<br>(0.027) |
| Ideology         | 0.003<br>(0.004)    | -0.011<br>(0.007)   | 0.003<br>(0.004)    | -0.011<br>(0.007)   | 0.004<br>(0.004)    | -0.011<br>(0.007)   | 0.006<br>(0.004)    | -0.011<br>(0.008)   |
| Campaign Funding | 0.009***<br>(0.001) | 0.011***<br>(0.001) | 0.010***<br>(0.001) | 0.012***<br>(0.001) | 0.010***<br>(0.001) | 0.012***<br>(0.001) | 0.011***<br>(0.001) | 0.014***<br>(0.001) |
| Clientelism      |                     | 0.038<br>(0.031)    |                     | 0.042<br>(0.030)    |                     | 0.049<br>(0.032)    |                     | 0.064+<br>(0.032)   |
| Main IV          | count               | count               | count               | count               | count               | count               | count               | count               |
| Num.Obs.         | 21 522              | 7870                | 21 522              | 7870                | 21 522              | 7870                | 21 522              | 7870                |
| R2               | 0.235               | 0.257               | 0.229               | 0.249               | 0.224               | 0.245               | 0.198               | 0.217               |
| DV Means         | 0.052               | 0.062               | 0.052               | 0.062               | 0.052               | 0.062               | 0.052               | 0.062               |
| Year FE          | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Geo FE           | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| <i>Controls</i>  |                     |                     |                     |                     |                     |                     |                     |                     |
| Demographic      | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |
| Municipality     | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   |

Note: Count IVs are logged. + p &lt; 0.1, \* p &lt; 0.05, \*\* p &lt; 0.01, \*\*\* p &lt; 0.001

Table D14: Effect of Vote-Buying on Winning, only incumbents

|                  | Model 1             | Model 2            | Model 3             | Model 4            | Model 5            | Model 6            | Model 7            | Model 8            |
|------------------|---------------------|--------------------|---------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Vote Buying      | 0.174***<br>(0.046) | 0.203**<br>(0.069) |                     |                    |                    |                    |                    |                    |
| Gifts            |                     |                    | 0.164***<br>(0.040) | 0.158**<br>(0.053) |                    |                    |                    |                    |
| Brokers          |                     |                    |                     |                    | 0.155**<br>(0.047) | 0.224**<br>(0.072) |                    |                    |
| Patronage        |                     |                    |                     |                    |                    |                    | 0.047<br>(0.056)   | 0.134<br>(0.086)   |
| Ideology         | -0.033<br>(0.059)   | -0.038<br>(0.069)  | -0.037<br>(0.060)   | -0.058<br>(0.070)  | -0.031<br>(0.062)  | -0.040<br>(0.070)  | -0.031<br>(0.064)  | -0.045<br>(0.071)  |
| Campaign Funding | 0.059**<br>(0.018)  | 0.087**<br>(0.030) | 0.061***<br>(0.018) | 0.089**<br>(0.031) | 0.058**<br>(0.018) | 0.085**<br>(0.030) | 0.064**<br>(0.019) | 0.093**<br>(0.031) |
| Clientelism      |                     | 0.068<br>(0.458)   |                     | 0.086<br>(0.423)   |                    | 0.080<br>(0.461)   |                    | 0.076<br>(0.434)   |
| Main IV          | dummy               | dummy              | dummy               | dummy              | dummy              | dummy              | dummy              | dummy              |
| Num.Obs.         | 734                 | 337                | 734                 | 337                | 734                | 337                | 734                | 337                |
| R2               | 0.246               | 0.314              | 0.245               | 0.307              | 0.241              | 0.316              | 0.227              | 0.297              |
| DV Means         | 0.530               | 0.534              | 0.530               | 0.534              | 0.530              | 0.534              | 0.530              | 0.534              |
| Year FE          | ✓                   | ✓                  | ✓                   | ✓                  | ✓                  | ✓                  | ✓                  | ✓                  |
| Office FE        | ✓                   | ✓                  | ✓                   | ✓                  | ✓                  | ✓                  | ✓                  | ✓                  |
| Geo FE           | ✓                   | ✓                  | ✓                   | ✓                  | ✓                  | ✓                  | ✓                  | ✓                  |
| <i>Controls</i>  |                     |                    |                     |                    |                    |                    |                    |                    |
| Demographic      | ✓                   | ✓                  | ✓                   | ✓                  | ✓                  | ✓                  | ✓                  | ✓                  |
| Municipality     | ✓                   | ✓                  | ✓                   | ✓                  | ✓                  | ✓                  | ✓                  | ✓                  |

Note: + p &lt; 0.1, \* p &lt; 0.05, \*\* p &lt; 0.01, \*\*\* p &lt; 0.001

Table D15: Effect of Vote-Buying on Winning, intensive margin, only incumbents

|                  | Model 1             | Model 2             | Model 3             | Model 4             | Model 5             | Model 6             | Model 7            | Model 8            |
|------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|
| Vote Buying      | 0.093***<br>(0.019) | 0.109***<br>(0.028) |                     |                     |                     |                     |                    |                    |
| Gifts            |                     |                     | 0.100***<br>(0.022) | 0.116***<br>(0.031) |                     |                     |                    |                    |
| Brokers          |                     |                     |                     |                     | 0.106***<br>(0.023) | 0.126***<br>(0.032) |                    |                    |
| Patronage        |                     |                     |                     |                     |                     |                     | 0.013<br>(0.052)   | 0.079<br>(0.069)   |
| Ideology         | -0.043<br>(0.060)   | -0.053<br>(0.073)   | -0.041<br>(0.060)   | -0.056<br>(0.074)   | -0.046<br>(0.062)   | -0.049<br>(0.069)   | -0.032<br>(0.065)  | -0.049<br>(0.069)  |
| Campaign Funding | 0.057**<br>(0.018)  | 0.083**<br>(0.031)  | 0.061**<br>(0.018)  | 0.088**<br>(0.032)  | 0.057**<br>(0.018)  | 0.084**<br>(0.031)  | 0.065**<br>(0.019) | 0.095**<br>(0.032) |
| Clientelism      |                     | 0.012<br>(0.433)    |                     | 0.024<br>(0.422)    |                     | 0.018<br>(0.434)    |                    | 0.078<br>(0.425)   |
| Main IV          | count               | count               | count               | count               | count               | count               | count              | count              |
| Num.Obs.         | 734                 | 337                 | 734                 | 337                 | 734                 | 337                 | 734                | 337                |
| R2               | 0.246               | 0.318               | 0.243               | 0.313               | 0.241               | 0.312               | 0.226              | 0.294              |
| DV Means         | 0.530               | 0.534               | 0.530               | 0.534               | 0.530               | 0.534               | 0.530              | 0.534              |
| Year FE          | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                  | ✓                  |
| Office FE        | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                  | ✓                  |
| Geo FE           | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                  | ✓                  |
| <i>Controls</i>  |                     |                     |                     |                     |                     |                     |                    |                    |
| Demographic      | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                  | ✓                  |
| Municipality     | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                  | ✓                  |

Note: Count IVs are logged. + p &lt; 0.1, \* p &lt; 0.05, \*\* p &lt; 0.01, \*\*\* p &lt; 0.001