THE UNIVERSITY OF CHICAGO

Bullets and Ballots:
Criminal Violence and Support for
Law-and-Order Candidates in Brazil

By

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July 2025

A paper submitted in partial fulfillment of the requirements for the

Master of Arts degree in the

Master of Arts Program in the Social Sciences

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Abstract

Brazil has witnessed the rise of a new political phenomenon: there is an increasing number of candidates with a background in the security forces who leverage their professional experience to signal commitment to tackling public insecurity, often through punitive and repressive approaches. In this paper, I identify them as law-and-order and examine the effects of violence occurring shortly before elections on support for their candidacies. Drawing on the issue ownership framework, I argue that a positive relationship is expected in areas plagued by high levels of crime, as exposure to violence during the electoral window heightens the salience of tough-on-crime platforms. I provide suggestive evidence in support of this claim. Using a dataset containing the coordinates and dates of gunshot incidents in Greater Rio de Janeiro and Recife, and leveraging the as-if-random timing of violence, I implement a regression discontinuity in time design. I compare the share of votes for law-and-order candidates in polling stations that experienced a nearby gunshot incident shortly before the 2018 general election to those that had incidents shortly after. While findings point toward a potential causal link, especially in Recife Metropolitan Area, the results are sensitive to the criteria used to classify polling stations as treated and control. That is, treatment effects' significance varies depending on how spatial and temporal proximity of gunshot incidents is defined.

Key-words: criminal violence; law-and-order politics; voting behavior; regression discontinuity in time design.

1 Introduction

Amidst Brazil's persistently high crime rates, there has been an increase in the number of candidates with backgrounds in the country's security forces who have sought to capitalize on public frustration with insecurity. By highlighting their professional experience, these candidates aim to present themselves as proponents of a tough-on-crime, punitive agenda capable of addressing voters' concerns with public safety (Instituto Sou da Paz, 2024). Following Novaes (2024), I refer to such candidacies as law-and-order, and in this article, I seek to advance the literature's understanding of the issue. Although existing research has identified demographic covariates associated with support for such candidates, we still lack causal explanations for their electoral success. Most political science causal inference research related to the topic has relied on experimental settings to examine what leads individuals to favor punitive and repressive approaches to crime (García-Ponce, Young, & Zeitzoff, 2023; Carreras & Visconti, 2022; Laterzo, 2023). This paper is therefore innovative in attempting to draw causal claims from observational data, helping to address concerns about the limited external validity of findings in the existing literature.

The article investigates whether gunshot incidents occurring shortly before elections lead residents of affected areas to increase support for federal and state deputy candidates running on law-and-order-centered platforms. I argue that a positive relationship should be expected in locations with high crime rates, since such events serve as vivid reminders of victimized friends, relatives, or personal experiences with violence, thereby increasing the likelihood of voters supporting candidates who can leverage the security-force brand as a signal of their commitment to the problem of crime. Thus, in addition to contributing to the literature on how exposure to crime influences policy preferences, this article also engages with debates on issue ownership as I posit that law-and-order candidates are more likely to benefit electorally if voters have insecurity on the top of their minds. Given its spatial focus, this study also draws on the literature on violence and place-based political mobilization (Nuamah & Ogorzalek, 2021).

I identify law-and-order candidates through the use of terms related to security forces in their ballot box names, and I employ *Fogo Cruzado*'s detailed and comprehensive dataset, which compiles the dates and coordinates of gunshot incidents in the Metropolitan Areas of Rio de Janeiro and Recife. For causal identification, I leverage the as-if-random timing of criminal violence and implement a regression discontinuity in time design to compare the share of votes for law-and-order candidates between polling stations that experienced a nearby gunshot incident shortly before the 2018 election day and those where similar incidents occurred shortly after voters cast their ballots. By using areas that experienced gunfire in nearly the same time window as controls, the estimation accounts for unobserved characteristics associated with the presence of firearms during that specific period (Morris and Shoub, 2024).

This article proceeds as follows. The next section provides an overview of security forces candidacies in Brazil, outlining their recent evolution and electoral strategies. Section 3 critically reviews the relevant literature and situates the research problem within it. It also introduces the theoretical framework underpinning the hypothesis. Section 4 describes the datasets and details the methodological approach. Sections 5 and 6 present results across different specifications of treatment. Section 7 discusses how electoral coercion by criminal groups could undermine the causal identification strategy; however, I present arguments to suggest that the findings are not driven by selection into treatment. Finally, Section 8 concludes the paper, addresses caveats related to interpreting results, and suggests directions for future research.

2 The Growth of Security Forces Candidates

Between the 2010 and 2018 general elections, the number of elected federal deputies in Brasília with a background in the security forces increased more than tenfold, rising from just 4 to 42 over the span of those two elections. This trend is not restricted to the national legislature; the growing presence of candidates from the security forces, as well as their electoral success, extends to other levels of government and, in some

cases, has even reached the executive branch (Instituto Sou da Paz, 2024). In 2010, 1037 former police and military personnel ran for posts such as state governor, senator, state deputy, and federal deputy, with 27 of them being elected. By 2018, the number of such candidacies had risen to 1469, and their success rate had improved considerably, with 116 securing office. The state of Rio de Janeiro is where this phenomenon is most acute, as 244 off-duty security force agents ran for office, compared to a national state average of around 54. Pernambuco, which appears alongside Rio de Janeiro in this study, falls below the average but above the median, with 46 candidacies (de Lima, 2022).

These candidates campaign on platforms that emphasize their law enforcement background as a way to brand themselves as tough on crime. The use of security force titles in ballot box names is part of a broader Brazilian trend, in which candidates from various professions, such as teachers, doctors, and clergy, use occupational labels to signal their program priorities to voters. Yet law-and-order candidates often go further: it is common to see television ads featuring them in police uniforms, wearing badges, and even displaying handcuffs. Once elected, they frequently use social media to showcase their actions in the area of public security. Novaes (2024) finds that law-and-order candidates are 80% more likely to engage in credit claiming on the topic of security than other politicians.

In a weak party system such as Brazil's, references to security force credentials, thus, function as a signal for voters of a law-enforcement oriented and in some cases iron-fist platform.

Captain Alberto Neto from the right-wing Liberal Party (PL), while running for mayor in Manaus, the capital of the state of Amazonas, publicly stated that the municipal guard, a limited-scale civilian security force administered by local institutions, would open fire on delinquents and send them to the cemetery. Also from the Liberal Party, Katia Sastre was the seventh most voted federal deputy in Brazil's most populous state, São Paulo, in 2018, due to a video posted on her social media in which she shoots and kills a burglar in front of a school while on duty as a military police officer. Former sheriff and current representative of Pará in congress, Eder Mauro (PL), brags about

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having killed countless "bad guys".

While it may be an overstatement to claim that all candidates with security forces background adopt such extreme rhetoric, they generally share a platform centered on punitive responses to crime and, by and large, adopt adopt conservative stances. Of the 1469 candidates in 2018, 1295 ran for right-wing or center-right parties, and of the 116 elected, 103 were affiliated with such parties (de Lima, 2022).

Instituto Sou da Paz (2021) states that the recent increase in security force candidacies poses substantial risks to Brazilian democracy. It can cause the misuse of political office to advance corporatist agendas, as well as lead to the politicization of public security provision. The unregulated entry of these actors into the political system may lead to consequences such as the denial of state protection to political opponents or the use of security apparatuses to intimidate rivals and voters (Instituto Sou da Paz, 2024). In 2022, members of the Military Police publicly campaigned for the presidential candidate Jair Bolsonaro, undermining the expected impartiality of the force, while the Federal Highway Police attempted to block roads in the Northeast of the country in order to prevent his opponent's constituency from reaching the polls.

Novaes (2024) provides systematic evidence of the consequences of the politicization of security forces. Using a regression discontinuity design, he compares cities where a city councilor with a law enforcement background was elected by a narrow margin to cities where such a candidate lost by a few votes. He finds that in treated municipalities, there is a distortion in the allocation of public security resources. These politicians, often embedded within police departments, can informally influence operations and redirect resources toward their constituencies. Since wealthier areas are more likely to support these candidates, this dynamic can result in increased murder rates in violence-prone parts of the city. Novaes complements this analysis with georeferenced data on police activity, which provides evidence of negligence in areas that did not vote for such law-and-order candidates.

3 Literature Review

This research project engages with three strands of the literature in political science. The first regards discussions on issue ownership and party selection. Carreras and Visconti (2022) argue that voters are more likely to perceive right-wing parties as committed and sincere in their efforts to tackle crime, which can increase their electoral prospects when insecurity becomes a salient issue. To support this claim, they conducted a text analysis of 61 "state of the union" speeches from former presidents of both Mexico and Chile to identify the frequency of crime-related words and compared the policy priorities of legislators from both countries using survey data from the Latin American Parliamentary Elites (PELA) project. Their findings suggest that right-wing presidents are more vocal about the issue of crime, and right-wing legislators are more likely to prioritize investments in public security. Moreover, these parties tend to propose visible and immediate policies aimed at curbing crime, which strengthens their credentials among voters.

Carreras and Visconti's main empirical contribution, however, concerns how issue ownership affects electoral accountability. Using a difference-in-differences strategy and leveraging short-term municipal-level spikes in crime in Mexico and Chile, they compare reelection rates between treated municipalities and those that did not experience shocks right before elections. Contrary to partisan accountability models that predict greater sanctions for incumbents who fail to deliver on issues they "own," they find that right-wing incumbents are less likely to be punished for sudden increases in crime. They offer three potential explanations consistent with the logic of issue ownership. First, voters might attribute these shocks to external factors when a right-wing official is in office. Second, they may perceive alternative parties as less capable of addressing the problem, meaning that voters might be reluctant to abandon an incumbent during a period of crisis in a policy area he is perceived to own. Third, crime shocks may benefit right-wing candidates not because they are seen as more competent, but because such events heighten demand for punitive, iron-fist approaches, which align with the policies

these parties typically champion.

This project shares both theoretical and methodological similarities with Carreras and Visconti. The hypothesis I put forth that voting for security forces candidates should be positively associated with the salience of crime derives from the issue ownership framework. The use of security forces titles in candidates' ballot box names serves as a signal of a law-and-order-oriented platform in an electoral context marked by low information and weak political parties (Novaes, 2024). Thus, as with right-wing parties, I expect these candidacies to hold a stronger reputation among the electorate for doing something about crime.

Methodologically, both works leverage the as-if random timing of crime for causal identification purposes. However, while they restrict their analysis to shocks in order to avoid the bias induced by serial victimization — that is, people who are constantly exposed to crime might become desensitized and show no electoral response to it — I argue that areas where crime is more pervasive are likely to exhibit stronger reactions to occurrences. I extend to voting behavior, Krause's (2014) claim that people respond to victimization surveys based on information that is most salient while answering them. A gunshot incident shortly before an election reminds voters of victimized relatives, friends, and their own experiences with crime, and this can influence their choice of candidate. Therefore, using relative measures of crime would not fit this research's goals, as crime occurrences are likely to resonate more strongly among those living in areas with higher levels of victimization.

The second strand of literature to which this article contributes, and in a manner that is more intuitive and straightforward, concerns how criminal violence shapes voting behavior and citizens' policy preferences. Similar to the causal identification strategy developed in this paper, Marshall (2017) examines the effects of local homicide rates on Mexican local elections by comparing elections held in municipalities that experienced more homicides in the two months preceding the election to elections within the same municipality that experienced more homicides in the two months following it. However, he differentiates the effects of crime according to voters' information consumption through

news, which he identifies by leveraging the exogenous variation in media coverage within neighboring precincts.

His research finds that voters tend to consume more news in the lead-up to local elections and that homicides occurring shortly before elections reduce confidence in the mayor and the incumbent party's vote share. He finds little to no association between voting for incumbents and longer-term homicide rates. More importantly, his results show that the effects of homicides just before elections are largely driven by poorly informed voters, who substantially increase their news consumption as the electoral calendar advances. Therefore, in contrast to the recency bias literature, which argues that voters tend to give more weight to recent events, and to my own hypothesis that short-term events can substantially influence candidate choice by shaping what is most salient in citizens' minds at the ballot box, he offers a Bayesian interpretation of the effects of short-term crime fluctuations. Marshall attributes the identified effects to poorly informed voters updating their assessments and priorities in response to the surge in information they are exposed to during the campaign period.

Focusing not so much on the implications of crime for voting behavior but rather on its effects for policy preferences, Visconti (2020) employs panel data from two Brazilian cities, Juiz de Fora in the state of Minas Gerais and Caxias do Sul in the state of Rio Grande do Sul, and finds evidence that crime victims are more likely to support iron fist approaches to tackling crime and place less value on the rule of law and other democratic principles. Given that being a crime victim is not a random event and that his research adopts an observational design, he employs an optimal matching algorithm to construct the largest possible balanced sample. The analysis is restricted to participants who, in at least one wave, had not reported being a crime victim in order to avoid biases stemming from serial victimization and reverse causation, as individuals who already favor tougher and more punitive stances toward crime might also be more likely to report victimization. In addition, Visconti compares citizens within the same neighborhood to reduce sensitivity to hidden biases and minimize sample heterogeneity.

In the same vein, García-Ponce, Young, and Zeitzoff (2023) find a positive association

between crime exposure, which they measure by asking survey participants how likely it is that someone from their community has experienced different types of violence in the past 30 days, and support for harsh forms of punishment that undermine the rule of law for the states of Nayarit, Jalisco, Colima, and Michoacán in Western Mexico. Such a region is heavily affected by organized crime, which has led to the emergence of self-defense militias (*autodefensas*) that engage in confrontations with cartels and state security forces. According to a 2014 national poll, these groups enjoy significant public support despite being accused of numerous human rights abuses, including lynching. Echoing this figure, their results show that exposure to crime induces support for the tactics of *autodefensas.*

The researchers also rely on experimental manipulation to causally assess the relationship between crime exposure and security policy preferences and provide a more nuanced understanding of the conditions under which this effect becomes most acute. To construct the sample, they use a multistage cluster sampling design and stratify electoral precincts based on variation in the presence of *autodefensas*, crime rates, and levels of urbanization. In the experiment, participants were presented with different crime scenarios and asked how they would respond to the situation and how they would evaluate two possible punishments that differ in terms of legality and severity. The results show that exposure to more anger-inducing scenarios causes an increase in support for harsh and extralegal punitive measures.

Moreover, in one of their studies, García-Ponce, Young, and Zeitzoff randomly generated 125 anger-inducing violent vignette scenarios to differentiate the effects that the innocence of victims and the severity of violence have in driving support for iron fist approaches. They find no effect for the latter but a strong and robust effect for the former. However, due to the constraints of the information available in the dataset used in the present project, it is not within the scope of my analysis to assess the heterogeneous effects of incidents based on their specific attributes, even though doing so could be highly informative and offer a significant contribution to the literature on crime and voting behavior. For the purposes of this research, all observations will be treated

as qualitatively similar. Nonetheless, future work could benefit from incorporating distinctions based on the variables considered by García-Ponce, Young, and Zeitzoff.

Experimental evidence on how victimization and insecurity shape voting preferences is actually quite extensive. Laterzo (2023), for instance, examined how instrumental factors such as exposure to violence interact with ideology to shape voters' security policy preferences. She conducted a candidate-choice field experiment in Argentina and Brazil, in which respondents were asked to choose between hypothetical candidates whose attributes were randomized across a range of policy areas. Her focus was on assessing whether a crime-reducing punitive approach, as opposed to a preventive one, influences electoral support depending on participants' ideology, personal experiences with victimization, and perceptions of neighborhood insecurity. The results show that conservatives consistently favor punitive measures regardless of other factors, while among progressives, higher perceived insecurity increases support for candidates who endorse a punitive stance. In contrast, the findings do not reveal a clear relationship between personal victimization and support for punitive policies.

Ventura, Ley, and Cantú (2024) also conducted a candidate-choice survey experiment, this time with a focus on unpacking iron fist policy measures to assess which types of punitive policies, if any, have their support shaped by victimization and exposure to crime. Their findings show that the effect of crime exposure on support for punitive measures is not uniform across different policy types. While exposure to violence is positively associated with support for the death penalty, the same pattern does not apply to the militarization of the war on drugs. Interestingly, they also find that exposure to crime increases support for candidates with previous experience in law enforcement agencies, which reinforces this paper's claim that making allusions to security forces on ballot box names serves as a signal of credibility in the fight against crime. They interpret this pattern as evidence of the role of personal attributes and non-party heuristics, in contrast to the literature on issue ownership. However, in the case of Brazil, where security forces candidates tend to share a reasonably similar platform, I view the use of security forces titles performing a role that is traditionally performed by political party

brands.

Finally, this research project also aims to contribute to the literature on violence and place-based political mobilization. Using nationwide voter files from the United States, Morris and Shoub (2024) find that incidents of police killings have a neighborhood-level impact on voter turnout for elections in 2016 and 2020. This effect is primarily driven by Black neighborhoods and by incidents in which the victim is Black. In line with this project, the authors leverage the as-if random nature of police killings and compare neighborhoods near an incident before and after election day, applying a regression discontinuity in time design. Their approach builds on the logic of works on geographically concentrated policy change, through which they formulate that individuals living in close proximity to events or incidents are more likely to be affected by them (Nuamah & Ogorzalek, 2021). Residents of those areas are more likely to learn about what happened through community networks, local organizations, or word of mouth, which helps them better process and interpret the consequences of the event. Crucially, people are often emotionally attached to their community and place, making it more likely that they know the victim, witnessed the incident, or directly experienced its aftermath, all of which amplify their response to the event.

Deriving from this logic, I posit that the effects of gunshot occurrences have a strong spatial component, as those living in proximity to such incidents are more likely to be informed about them and to have internalized the full costs and consequences that this type of event imposes on one's daily life. As such, nearby residents will display a stronger response to incidents at the ballot box.

Adding a different perspective, Krause (2014) highlights the role of media in shaping the relationship between crime and political sentiments in Guatemala City and the surrounding metropolitan area. He conducted a survey experiment and found that crime-related news reduces citizens' trust in government institutions and increases support for authoritarian approaches to crime control. Advancing the argument that sensationalist portrayals of crime and broader public discourse are just as influential as objective crime rates, she demonstrates that exposure to crime news heightens perceptions of

victimization and boosts support for iron-fist presidential candidates.

4 Data and Methodology

In this article, I use the open-source dataset provided by *Instituto Fogo Cruzado*, which compiles gunshot incidents in the Metropolitan Region of Rio de Janeiro since June 2016 and in the Metropolitan Region of Recife since April 2018. The data are collected through the monitoring of social media, police reports, press coverage, and user submissions via the institute's app, which are verified by the organization's team. Each entry includes the precise coordinates and exact date of the incident. The dataset also indicates the reason for the shooting and whether it resulted from police intervention. For the construction of this article's treatment variable, I chose to exclude all incidents involving police activity.

Naturally, this dataset is not without limitations; for instance, it is subject to reporting biases. Areas with greater media coverage or more widespread use of the app are, all else equal, more likely to have incidents recorded. This may affect the external validity of the paper's findings, as results could be partially shaped by unobserved factors related to reporting patterns. Notably, those who are more inclined to report an incident may also be more likely to respond to it on the ballot, meaning the paper may be capturing the effects of criminal violence among areas where residents are already predisposed to react to such events. Nonetheless, this remains the most detailed and comprehensive open-source dataset on gun violence available for these regions, and despite its limitations, it offers valuable information for drawing inferences in an observational setting.

I obtain voting data at the polling station level, the unit of analysis for this study, from *Tribunal Superior Eleitoral* (TSE). The analysis is restricted to votes for federal and state deputies, as security policy in Brazil is primarily structured at the state level, and some key reforms and initiatives are debated in Brasília. Thus, including local elections would not be suited for the focus of this study. I also exclude elections for
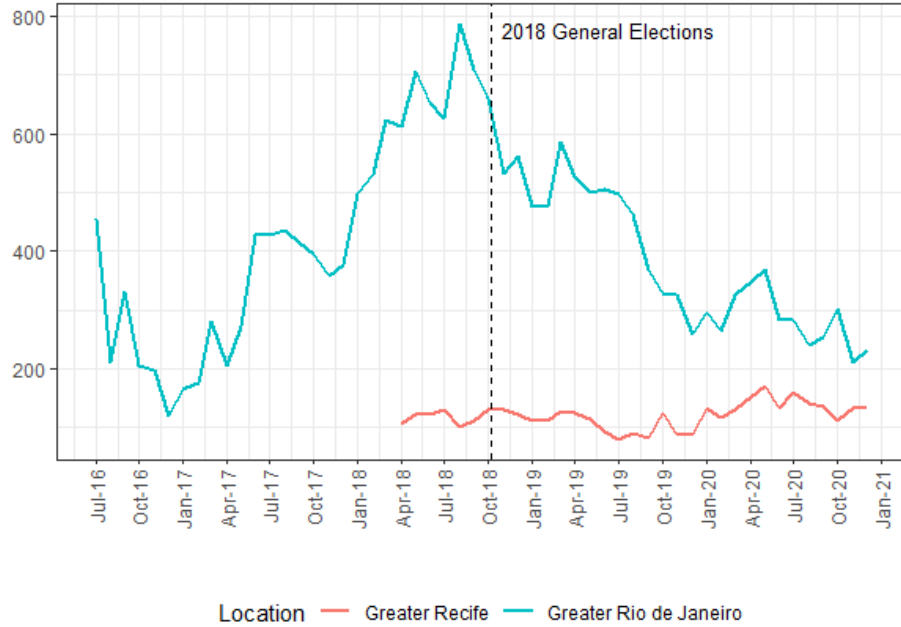
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Figure 1: Monthly Gunshot Occurrences

executive positions and the Senate, given the limited number of candidates in those races, which reduces the likelihood of having contenders with the specific traits this research aims to investigate. Brazil's political system offers a significant advantage for inference in this context, as states are the electoral districts. This means that deputy candidates are the same across all cities within a given state.

The dependent variable is the change in the share of votes for law-and-order candidates between 2014 and 2018. Following the approach of Novaes (2024), I identify law-and-order candidates based on the use of terms related to security forces in their ballot box names, as this serves as signal of a tough-on-crime stance intended to mobilize voters around public security. Common terms include "captain," "sergeant," "military," "sheriff," "lieutenant," "army," "marine," "police," "colonel," along with their abbreviations and gendered variations. Candidates with a background in the security forces who do not reference their rank or affiliation in their ballot name are not classified as law-and-order. Novaes justifies this choice through a text analysis of campaigns, which indicates that candidates who adopt such labels tend to use significantly more public security-related

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words in their platforms.

Between the two elections, support for law-and-order candidacies rose sharply. In 2014, the total number of votes for federal and state deputy candidates classified as law-and-order in Greater Recife amounted to just 58,595, roughly 1.25% of the total vote. Four years later, that number had surged to 406,102, representing approximately 8.96% of all votes cast. A similar pattern is observed in the Rio de Janeiro Metropolitan Area, where the vote count for law-and-order candidates increased from 190,817 in 2014 (1.37% of the total) to 544,288 in 2018 (4.01%).[1]

Figure 2 illustrates this trend by comparing the distribution of polling stations according to the share of votes for law-and-order deputies in both elections. The 2018 distribution is notably more skewed to the right than in 2014, indicating not only a substantial rise in support overall but also a widespread shift that spans across polling stations and neighborhoods. This suggests that the increase was not concentrated in isolated areas but rather reflects a broader electoral shift toward such candidacies.
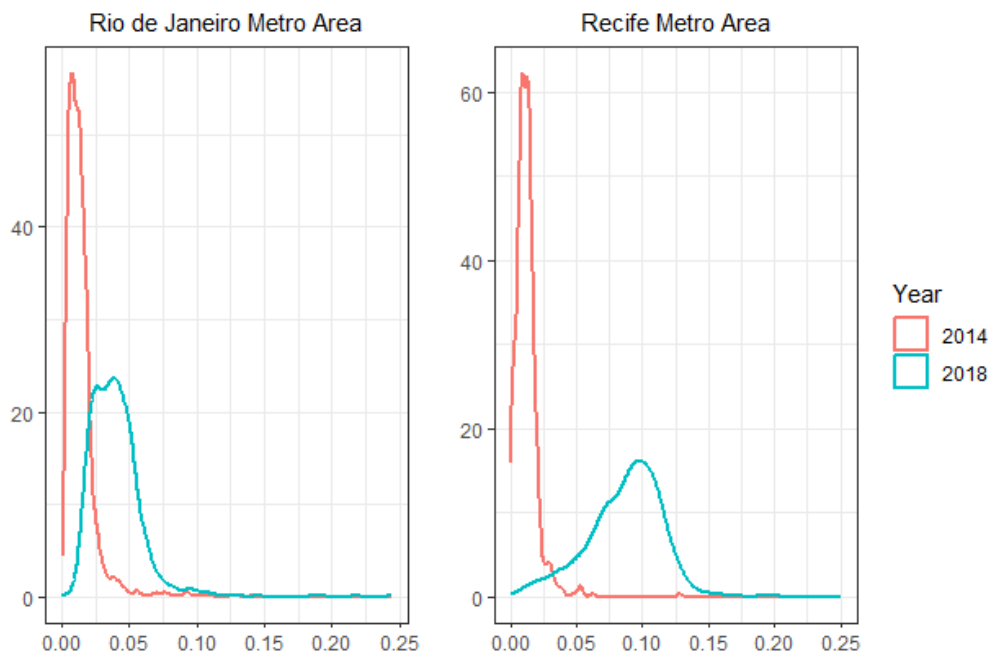

Figure 2: Density Function of Polling Stations' Share of Votes for Law and Order Candidates

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[1] See https://github.com/vhugo-lopes/Bullets-and-Ballots for replication files.

I use Hidalgo's (2024) dataset to geocode the polling stations included in the sample and to estimate their distance to gunshot occurrences. Since this paper seeks to explore the spatial relationship between criminal violence and voting behavior, I take advantage of the fact that, in Brazil, voters are assigned to polling stations based on proximity to their home address. Figure 3 displays the total number of gunshot incidents that occurred within a 500-meter radius of each polling station up to October 7, 2018, the date of the general elections, plotted against the increase in the share of votes for law-and-order candidates vis-à-vis 2014. In line with Marshall's (2017) findings, the figure shows no clear or statistically significant relationship between long-term rates of violence and voting behavior for either Greater Recife or Greater Rio de Janeiro.
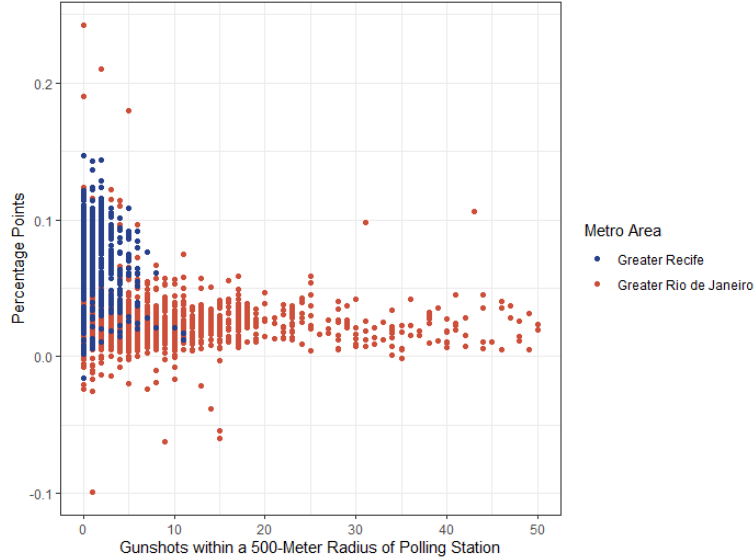

Figure 3: Total number of gunshot incidents that occurred within a 500-meter and an increase in vote share for law-and-order candidates from 2014. The unit of analysis is polling station.

As the location of gunshot incidents is not random, it would be misleading to draw any conclusions about the causal link between violence and voting behavior from long-term exposure. Both observed and unobserved confounders may influence this relationship. For instance, law-and-order candidates typically run on right-wing platforms, while voters in areas with higher levels of violence often tend to be poorer and may be more inclined to support left-wing economic proposals (Carreras & Visconti, 2022).

This article, then, leverages the as-if-random timing of gunshot incidents for causal identification purposes. I implement a regression discontinuity in time design, and compare polling stations located near gunshot incidents shortly before the election to those near occurrences that took place just after election day. By using areas that experienced gunfire in nearly the same time window as controls, the estimation accounts for unobserved characteristics associated with the presence of firearms in that specific period (Morris & Shoub, 2024). However, this entails that results should be interpreted as local effects, meaning that I am estimating the impact of gunshot incidents right before the election, conditioned on the characteristics associated with having occurrences within the specified time frame.

Although *Fogo Cruzado* provides data from 2016 to the moment this article is being written, I do not include the 2022 election in the analysis. Due to a generalized decline in crime and violence rates across the country, there were not enough polling stations in 2022 meeting the criteria for treatment and control; thus, the identification strategy would be unfeasible for that election year.

In contrast to concerns about serial victimization, this analysis focuses on the effects of treatment in high-violence areas, where the issue of crime is expected to be more salient. Drawing on the place-based mobilization framework, I argue that voters who live near a gunshot incident in the days leading up to the election are more likely to be aware of the event and to directly experience its consequences (Morris & Shoub, 2024). However, this proximity is expected to trigger a stronger reaction among those with prior exposure to criminal violence, as the incident may serve as a vivid reminder of victimized relatives, friends, personal experiences with crime, and the ways in which violence disrupts their daily lives. A treated unit located in an area with persistently high levels of violence is therefore more likely to contain voters who have public security at the forefront of their concerns on election day, making them more likely to respond electorally to the incident.

I define polling stations as located in a violent area when the total number of gunshot incidents within a one-kilometer radius, from the start of data collection up to election

day in 2018, exceeds the median for their respective metropolitan region. Besides including the dummy variables for treatment, violent area, and their interaction, I also control for polling station size, the share of male voters, the share of voters aged 65 or over, and the share of voters with higher education. Importantly, I include the count of gunshot incidents involving police action within a radius of one kilometer as a control variable, given Brazil's high levels of police violence, particularly against marginalized communities. Such violence has been shown to undermine the legitimacy of the police, and, by extension, the security forces (Larkins, 2013). Brazil's police is among the most lethal in the world, and existing research highlights the systemic negligence of the criminal justice system in investigating police killings (Willis, 2015).

Since the criteria for classifying a polling station as being near a gunshot incident that happens around election day are somewhat arbitrary, in the next two sections, I test and show results for different specifications of time and distance for defining treatment and control.

5 Results

I cluster standard errors at the neighborhood (*bairro*) level for all estimations of this article, as polling stations located within the same neighborhood are likely to be exposed to common shocks and therefore may not represent independent observations. I adopt this more conservative approach instead of clustering at the level of treatment assignment—that is, the gunshot incident that determined whether an observation fell into the treatment or control group—to ensure more robust and reliable results.

For the regressions in Table 1, treatment is defined as having at least one gunshot incident within 300 or 500 meters of a polling station one week before October 7, while control refers to polling stations with incidents within the same distances occurring one week after that date. As with the other regressions in this article, I excluded observations that had incidents both before and after election day, as they could not be considered controls since they were exposed to treatment. Moreover, if I considered them as treated,

groups would be fundamentally different, as areas experiencing high rates of criminal violence during this period would be more likely to fall under treatment, which could hinder the causal identification strategy.

Table 1: Regression Results

	300m	500m	300m	500m	300m	500m
Increase in Polling Stations' Share of Votes for Law-and-Order Candidates						
	RJ and PE	RJ and PE	RJ	RJ	PE	PE
Violent Area	-0.015	-0.009	-0.002	-0.004	-0.045	-0.021
	(0.010)	(0.006)	(0.008)	(0.005)	(0.021)	(0.015)
Treatment	-0.016*	-0.010*	-0.006	-0.008	-0.017	-0.024*
	(0.008)	(0.005)	(0.008)	(0.006)	(0.025)	(0.011)
Violent Area × Treatment	0.023**	0.017**	0.005	0.008	0.055*	0.051**
	(0.011)	(0.007)	(0.009)	(0.006)	(0.024)	(0.017)
Police Violence (10^{-4})	-0.620	-1.041**	-0.225	-0.690**	18.065	19.897
	(0.902)	(0.348)	(0.690)	(0.241)	(298.215)	(99.533)
Demographic Controls	N	N	N	N	N	N
Observations	116	244	93	200	23	44
R²	0.555	0.578	0.130	0.117	0.632	0.454

* $p<0.1$, ** $p<0.05$, *** $p<0.01$. Standard errors clustered by *bairro* in parentheses.

The estimated coefficients for the interaction between treatment and the violent area dummy are positive across all regressions, and they are statistically indistinguishable from zero only in the regressions restricted to Rio de Janeiro's polling stations. Consistent with this paper's hypothesis, this provides suggestive evidence that in polling stations located in violent areas, a gunshot incident occurring shortly before the election causes an increase in support for law-and-order candidates vis-à-vis places that had incidents one week after October 7.

Due to the limited number of observations for Greater Recife, it is difficult to draw definitive conclusions about regional variation. However, the results suggest a
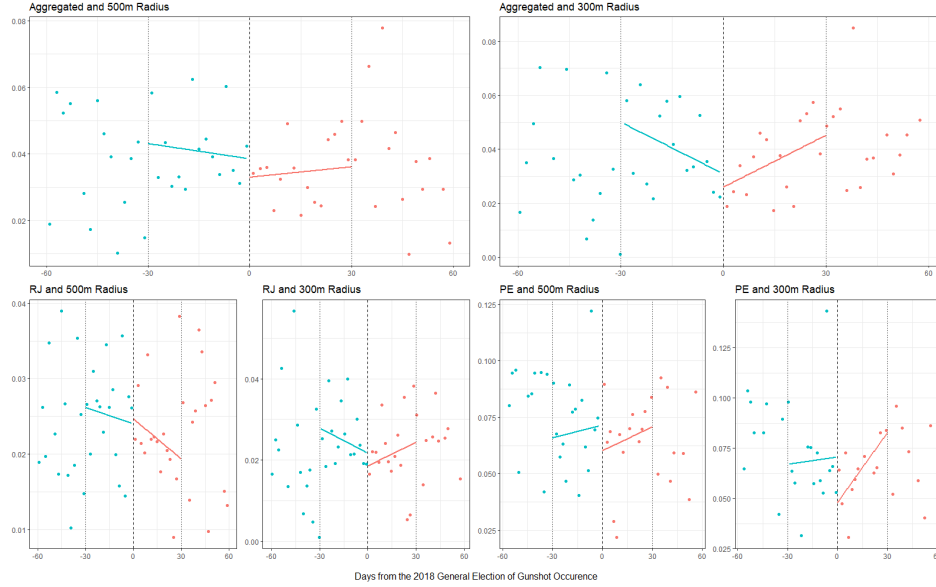
Figure 4: Graphs illustrate the discontinuity in the change in the share of votes for law-and-order candidacies relative to the timing of the closest gunshot incident to election day. Voting booths located near (within a radius of 300 or 500 meters of) incidents that occurred both within one month before and one month after October 7, 2018, were excluded from the graphs.

considerably stronger and more statistically significant effect of treatment in violent areas of Greater Recife compared to Rio de Janeiro. The coefficient for the interaction term in Recife is particularly striking. On average, gunshot incidents in violent areas increase support for law-and-order candidates by more than 3 percentage points. In contrast, the more modest effects observed in the Rio de Janeiro Metropolitan Area may reflect the capital city's spatial complexity, as some areas of the city combine both informal settlements with wealthy and middle-class residences, whereas other cities in Brazil tend to be more spatially segregated.

Table 2 presents the means and counts of covariates for the treatment, control, and non-sample groups when treatment is defined as having an occurrence within a 500-meter radius. As expected, both treatment and control groups have a higher share of observations located in violent areas, which in some sense limits the generalizability of the findings. However, this does not diminish their relevance, as areas with higher levels of crime are of significant interest for the political science literature and policymakers.
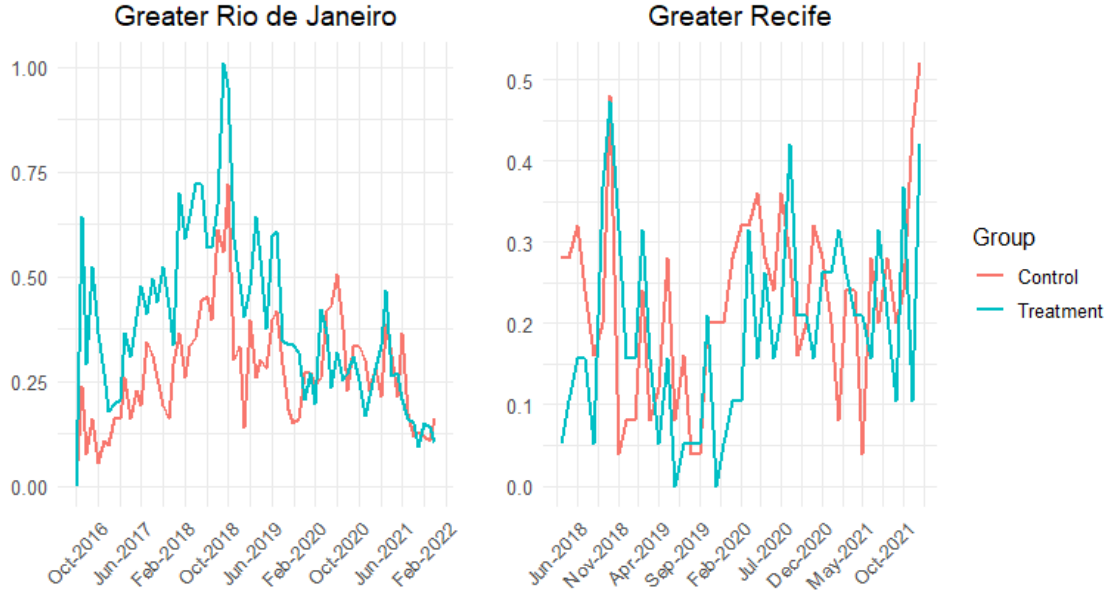
Figure 5: Monthly Gunshot Counts by Treatment Status. Treatment assignment is based on having a gunshot incident one week prior to election day within a radius of 500 meters of the polling station.
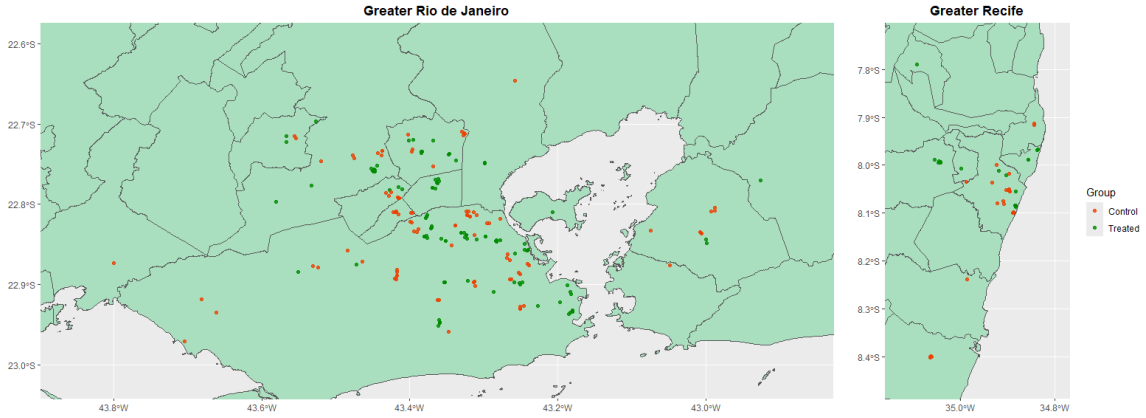

Figure 6: Polling Stations Coordinates. Treatment assignment is based on having a gunshot incident one week prior to election day within a radius of 500 meters of the polling station. Sources for shape files are *Malha Municipal IBGE*.

Table 2: Characteristics of Polling Stations

	Not in Dataset	Treated	Control
Mean % Higher Education	9.5%	7.2%	8.2%
Mean % Male	45.6%	45.4%	45.6%
Mean % Elderly	15.2%	7.24%	8.25%
Mean Size	3040	3368	3280
Police Gunshot Counts within 1000 m (Mean)	7.6	23.1	13.1
Polling Stations in Violent Areas	1505	97	75
Polling Stations in Greater Recife	848	19	25
Polling Stations in Greater Rio de Janeiro	2494	107	93
Total	3342	126	118

A more concerning issue is the slight imbalance between treatment and control groups in terms of the proportion of elderly voters and exposure to police violence. If not accounted for in the estimation equation, such imbalances could introduce a negative bias in the estimated treatment effect, as older voters constitute a key constituency for law-and-order candidates, while exposure to police violence may delegitimize these candidates' platforms among victimized communities (Novaes, 2024).

Figure 5 indicates that although treated polling stations in Rio de Janeiro have higher monthly counts of gunshot incidents within a radius of 500 meters, both treated and control units exhibit similar time trends, thus leading support to the as-if-random identifying assumption. Figure 6, on the other hand, points out that the spatial distribution of treated and control polling stations for this specification does not follow any discernible pattern. Importantly, there is no imbalanced presence of treated units in Rio de Janeiro's Western Zone, an area known for the presence of *milícias*, a criminal group, largely composed of on-duty and retired security force agents, which has been accused of voter coercion and other forms of political intimidation (Hidalgo & Lessing, 2015).

Table 3: Sensitivity Analysis: Spatially-Adjusted and Cycle-Specific Models

	Increase in Polling Stations' Share of Votes for Law-and-Order Candidates			
	300m Spatially-Adjusted	500m Spatially-Adjusted	300m Cycle-Specified	500m Cycle-Specified
Violent Area	-0.019	-0.010	-0.018	-0.004
	(0.010)	(0.006)	(0.009)	(0.007)
Treatment	-0.016*	-0.009*	-0.016**	-0.006
	(0.008)	(0.005)	(0.007)	(0.007)
Violent Area × Treatment	0.026**	0.018**	0.033**	0.016
	(0.011)	(0.007)	(0.014)	(0.010)
Police Violence (10^{-4})	-1.017	-1.492**	0.334	-0.105
	(1.163)	(0.460)	(0.866)	(0.590)
Demographic Controls	N	N	N	N
Observations	91	215	63	105
R^2	0.575	0.572	0.674	0.641

* $p<0.1$, ** $p<0.05$, *** $p<0.01$. Standard errors clustered by *bairro* in parentheses.

A potential criticism of the treatment definition used in the previous regressions is the narrow radius employed to identify proximity to a gunshot incident. This approach allows polling stations that did not experience an incident within 500 meters before the election, but did within, say, 550 meters, to be categorized as control. To address this concern, I ran additional regressions in which a unit is only considered control if it had a gunshot within 300 or 500 meters after the election but no incident within a 1-kilometer radius prior to election day (spatially-adjusted regressions). To ensure comparability between treatment and control groups, I extended the same 1-kilometer restriction to the treatment group as well, requiring that treated units have no incidents after October 7 within that distance. While this strategy significantly reduces the sample size, it yields results consistent with those in Table 1. There is a statistically significant treatment effect in violent areas.

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To improve comparability between treatment and control groups, I also ran regressions in which treatment assignment accounts for crime trajectories beyond the two-week window (cycle-specified). Specifically, I defined treated polling stations as those that, within the one-month periods before and after October 7, experienced gunshot incidents exclusively in the one week preceding the election. Control units are those with incidents only in the one week following election day, with no other occurrences during that same two-month window. As expected, this approach substantially reduces the sample size, which limits statistical power, but it is expected to enhance internal validity by ensuring both groups share a more comparable trajectory of exposure to violence. Estimates are suggestive and favor the hypothesized relationship, as there is a statistically significant effect of gunshots before elections in violent areas when treatment is defined as having an occurrence within a 300-meter radius of the polling station. While the point estimates for the 500-meter radius criteria are also positive, they are not statistically distinguishable from zero.

6 Robustness Check

I carried out a series of placebo tests by shifting the threshold dates for treatment and control assignment to one week before and one week after the election, in order to assess whether the observed effects are driven by broader patterns in gunshot spatial and temporal distributions rather than the causal mechanism I propose. The rationale is that when the threshold is moved to before the election, both groups have experienced gunshots prior to voting day; hence, no treatment effect should be expected. Similarly, when the threshold is shifted to after October 7, treatment is defined as having a gunshot occurrence in the first week after the election, and the control group includes locations with incidents in the second week post-election. Table 4 shows that none of the placebo regressions yield a supposed treatment effect that is statistically distinguishable from zero.

Finally, to test the robustness of the findings, I checked how results shift when

Table 4: Placebo Tests

| | 300m | 500m | 300m | 500m |
	After Election	After Election	Before Election	Before Election
Increase in Polling Stations' Share of Votes for Law-and-Order Candidates				
Violent Area	-0.006	-0.002	0.011**	0.011**
	(0.005)	(0.003)	(0.005)	(0.004)
Treatment	0.007	0.005	0.005	0.003
	(0.009)	(0.005)	(0.006)	(0.005)
Violent Area × Treatment	-0.006	-0.006	-0.011	-0.010
	(0.010)	(0.006)	(0.008)	(0.006)
Police Violence (10^{-4})	0.105	-0.756**	-0.682	-0.795
	(0.517)	(0.321)	(0.796)	(0.561)
Demographic Controls	N	N	N	N
Observations	128	293	124	252
R²	0.607	0.553	0.562	0.514

* p<0.1, ** p<0.05, *** p<0.01. Standard errors clustered by *bairro* in parentheses.

treated and control polling stations are classified based on having an incident within two weeks of the election, instead of one. There are considerable differences vis-à-vis the results in Table 1. Most notably, the interaction of interest is no longer statistically significant in the regression that includes both Greater Recife and Rio de Janeiro. This finding somewhat weakens the hypothesis that gunshots near the election prompt greater support for law-and-order candidates. Nonetheless, factors other than the absence of the proposed mechanism could explain this difference. First, using a four-week window rather than two might make the as-if-random assumption less credible, hindering inference. Another possibility is that short-term biases are only relevant within very narrow time frames. However, it is important to acknowledge that we do not have a definitive explanation for this difference, and the lack of significance under an alternative time

specification does, to some extent, weaken the finding from the previous section.

Table 5: Assignment Based on Occurrence Within Two Weeks of Election

	Increase in Polling Stations' Share of Votes for Law-and-Order Candidates					
	300m RJ and PE	500m RJ and PE	300m RJ	500m RJ	300m PE	500m PE
Violent Area	-0.005	-0.003	-0.002	-0.000	-0.011	-0.013
	(0.005)	(0.003)	(0.004)	(0.003)	(0.011)	(0.011)
Treatment	-0.006	-0.005	-0.001	-0.002	-0.037*	-0.031*
	(0.006)	(0.004)	(0.006)	(0.004)	(0.019)	(0.015)
Violent Area × Treatment	0.013	0.008	0.002	0.001	0.050**	0.043**
	(0.008)	(0.005)	(0.006)	(0.004)	(0.018)	(0.017)
Police Violence (10^{-4})	-1.222	-0.696	-0.380	-0.398	-59.19	-77.95*
	(0.982)	(0.425)	(0.877)	(0.389)	(77.17)	(29.13)
Demographic Controls	N	N	N	N	N	N
Observations	201	410	144	313	57	97
R²	0.536	0.525	0.055	0.068	0.283	0.307

* $p<0.1$, ** $p<0.05$, *** $p<0.01$. Standard errors clustered by *bairro* in parentheses.

7 Criminal Governance and Political Violence

One possible threat to the validity of these findings lies in the fact that incidents near treated polling stations could be the result of political coercion. If gunshot occurrences were strategically timed before an election, this would violate the as-if-random assumption and could lead to unobserved differences between treated and control groups. In this vein, Albarracín (2018) conceptualizes how criminal armed groups often operate as brokers for politicians and employ a combination of coercive tactics and clientelistic practices to influence the votes of those residing in areas under their control.

He argues that such groups can often engage in forms of political gatekeeping by blocking certain candidates from campaigning and, in more extreme cases, by assassinating political rivals. On election day, they might organize social events to distribute benefits and strengthen their perceived legitimacy, while also creating peer pressure for turnout and reinforcing surveillance within the community. Criminals can use their coercive capacities to escort voters to polling stations, intimidate those unwilling to support their preferred candidates, and suppress dissenting voices.

In the case of Rio de Janeiro, *milícias* have gained notoriety for leveraging their territorial control for electoral purposes. Largely composed of active-duty and retired security force agents who champion an iron-fist rhetoric against other forms of organized crime, *milícias* expanded across Greater Rio de Janeiro by confronting drug-trafficking factions, establishing protection rackets, and imposing their own forms of criminal governance. Through coercive tactics, they extort residents and businesses of *favelas* and poor communities, and monopolize the provision of public goods and essential services such as public transport, electricity, water supply, internet, security, and housing (Hirata et al., 2022). In 2007, a Legislative Investigation Committee in the State's Legislative Assembly (ALERJ), which led to the imprisonment of more than 200 *milicianos* and seven elected officials, revealed that such groups were leveraging the organizational structures used to monitor and extract rents from residents for electoral corralling.

The political science literature has also investigated the transformation of such areas into electoral strongholds. Hidalgo and Lessing (2015) show, through a difference-in-differences analysis of polling station data, that even though support for *milícia*-allied candidates followed similar trends in controlled and non-controlled areas prior to takeovers, it diverged significantly afterward. They also examine the legislative activity of the elected officials and find that they were effective in delaying investigations into *milícia* operations. Bullock (2021) exploits exogenous variation in voter assignment to polling booths and constructs an extensive dataset of territorial control by scraping blog posts about crime in the 108 favelas of Rio de Janeiro city. She finds that in areas controlled by criminal groups, fewer unique candidates receive votes, and local leading

candidates tend to win by abnormally large margins.

Albarracín provides a detailed assessment of the politics of *milícia*-controlled communities with his 17-month fieldwork research. He indicates that *milicianos* forced residents to register and recorded voters' ID numbers to compare expected outcomes with official election results. Although they are not able to monitor individual votes, the researcher argues that their reputation for ruthlessness, combined with the signal of control conveyed by having people's identification numbers and the perceived threat of extreme punishment should they find a way to track votes, can suffice to coerce some residents into compliance.

In light of this scenario, and especially considering that *milicianos* and their allies could run for offices including their former or current security force post on the ballot, a logical next step in this research project is to incorporate criminal groups' territorial control into the analysis. To my knowledge, there is no open-source, detailed dataset on criminal governance currently available that could help address allegations that the observed difference in support for law-and-order candidates between areas that experienced gunshot incidents shortly before the election and those that did not could be influenced by *milícia* activity.

Nonetheless, this study presents some compelling evidence to mitigate this concern. First, the results are primarily driven by the Recife Metropolitan Area. Second, treated units in Rio de Janeiro are not disproportionately located in the city's Western Zone, where milícias are most prevalent. Finally, areas under *milícia* control tend to face fewer police raids and, consequently, fewer gunshot incidents involving law enforcement. Thus, the fact that balance checks do not show lower levels of police violence among treated polling stations—if anything, they indicate higher rates—further suggests that results are unlikely to be driven by *milícias* coercing voters (Mello & Ferreira, 2020). Still, it is important to incorporate criminal governance as a variable in future research, both to improve estimation and to explore potential heterogeneous treatment effects. Although this study presents evidence that, on average, a gunshot occurrence can induce support for law-and-order candidacies, residents living under *milícia* rule can respond differently

to such events, as they might interpret them as evidence of the failure of the iron-fist approach to tackling insecurity.

8 Discussion

In this article, I sought to contribute to the literature on the impacts of criminal violence on policy preferences and voting behavior by examining whether gunshot incidents right before Brazil's 2018 general elections led to increased support for state and federal deputy candidates running on law-enforcement-oriented platforms. By employing spatial analysis alongside a regression discontinuity in time design, I find indicative results that support the hypothesis that violence shortly before election day influences voters' choices in high-crime areas by heightening the salience of public insecurity. In this sense, I also find suggestive evidence for the underlying assumption that the so-called law-and-order candidacies are effective in mobilizing support from voters dissatisfied with crime and violence.

Although the findings point in the expected direction, they are not robust across all specifications of timing and distance used to define treatment. In general, effects were more pronounced when the criteria for classifying a gunshot incident as near a polling station and close to the election day were more restrictive. For instance, one of the strongest and most statistically significant treatment effect results in high-violence areas emerged when treatment was defined as at least one gunshot occurring within a 300-meter radius during the week leading up to election day.

The limited robustness of the findings may stem from constraints in the way treatment is defined in this study. For example, the analysis assumes that residents near gunshot incidents are aware of the event and internalize its consequences; an assumption that may not always hold, particularly in densely populated areas. Additionally, voters do not necessarily cast their ballots at their place of residence, as individuals often fail to update their electoral registration after moving to a new address. This mismatch can compromise inference, given that individuals who were exposed to the treatment may

vote in untreated polling stations, while treated stations may include voters who were not directly exposed to a gunshot incident. On top of that, in the Brazilian context, most notably during the 2018 general election, factors beyond geographical proximity played a significant role in shaping people's exposure to violence, including sensationalist television programs and online messaging groups.

Despite these limitations, and since none of the presented caveats undermine the core assumption that polling stations located near gunshot incidents shortly before the election are, on average, more likely to include voters recently exposed to criminal violence, this paper does indeed present advancements for political science research in regards to the electoral impacts of crime. This contribution is especially relevant given that the existing literature relies mostly on experimental designs, which offer cleaner causal estimates but often at the expense of external validity (García-Ponce, Young, & Zeitzoff, 2023; Carreras & Visconti, 2022; Laterzo, 2023). By drawing on observational data, this study provides important insights into how violence actually shaped policy preferences and voting behavior in a real-world setting.

In addition to the need to consider the possibility of electoral coercion by criminal groups so as to improve estimation precision and address concerns of selection into treatment, for future research projects, it would also be relevant to investigate what aspects of law-and-order candidacies appeal to voters dissatisfied with crime and insecurity. Since the evidence supporting the effectiveness of the punitive measures often promoted by these candidates in actually reducing crime is dubious, it becomes important to explore whether voter support stems from a desire to change the reality of insecurity or from a drive for punishment that is reflected in more repressive platforms (Visconti, 2020). Moreover, future studies should consider distinguishing the effects of observational events of violence based on the severity and type of crime. Due to data limitations, this study treated all incidents as qualitatively equivalent, although events involving the victimization of innocent civilians may trigger stronger reactions and result in greater shifts in electoral outcomes (García-Ponce, Young, & Zeitzoff, 2023).

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