Candidates Murdered in Mexico: Criminal or Electoral Violence?

Víctor Antonio Hernández Huerta*

ABSTRACT: The 2018 electoral process in México was not only the largest electoral process in Mexico's history by the number of positions to be filled, but also it was the most violent in recent history. Since the beginning of the electoral campaigns until the election day, 48 candidates were assassinated. What explains this unprecedented wave of political assassinations? Are they caused by a close electoral competition or by criminal violence? By using an original database in which we recorded the number of candidates assassinated by municipality, we tested both competing theories and found that the killings are not related to competitive elections, but instead they are linked to the presence of criminal organizations and to the level of criminal violence in each municipality. In some states, such as Puebla and Guerrero, statistical evidence also suggests that the murdered candidates were targeted by criminal organizations.

KEYWORDS: elections, political assassinations, electoral violence, criminal organizations.

Candidatos asesinados en México, ¿competencia electoral o violencia criminal?

RESUMEN: El pasado proceso electoral no solamente fue el más grande en la historia de México, por el número de cargos de elección popular a elegir, sino también el más violento. Durante el proceso electoral federal 2017-2018 se registró el asesinato de 48 precandidatos y candidatos en todo el territorio nacional. ¿A qué se debe esta ola de asesinatos políticos sin precedente en la historia de México? ¿Los asesinatos deben atribuirse a condiciones de competencia electoral, o más bien pueden vincularse con actividades de organizaciones criminales? Usando una base de datos original en que registramos el número de candidatos asesinados por municipio, sometemos a prueba ambas teorías complementarias y encontramos que los homicidios no están relacionados con elecciones cerradas o competidas, sino que están ligados a la presencia de organizaciones del crimen organizado y al nivel

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Article received on July 22, 20 19, and accepted for publication on April 4, 2020.

Note: This range of pages corresponds to the published Spanish version of this article. Please refer to this range of pages when you cite this article.

de violencia criminal en cada municipio. En algunos estados, como Puebla y Guerrero, la evidencia estadística también sugiere que los candidatos asesinados fueron el blanco de ataques de organizaciones criminales.

PALABRAS CLAVE: elecciones, asesinatos políticos, violencia electoral, organizaciones criminales.

INTRODUCTION

The federal electoral process 2017-2018 was characterized not only for had been the largest in Mexico's history for the number of popularly elected positions that were elected,[1] but also for had been the most violent. From the beginning of the process, on September 8, 2017, until the end of the campaigns on June 27, 2018, 48 pre-candidates and candidates were assassinated throughout Mexico.[2] Undoubtedly, the issue of electoral violence, in particular the murders of candidates for the 2018 federal and local elections, was one of the topics that attracted more media attention during this election. The Organization of American States (OAS), the European Union delegation in Mexico, together with the embassies of Norway and Switzerland, expressed their concern about violence and intimidation during said electoral process. Various political and social actors also expressed their concern about the murder of candidates. In the current context of widespread criminal violence, it is worthwhile asking whether we can still affirm that "On the shiny surface of Mexico's democracy, things by and large seem fine" (Schedler 2014: 10), or whether we are witnessing the beginning of a "societal [criminal] subversion of democracy".

What was behind this unprecedented wave of political assassinations? Does the violence respond to incentives of electoral competition, or can it be attributed to criminal organizations? Our argument is that the murders of candidates observed in Mexico in 2017 and 2018 are not the result of fierce political competition between political parties, because unlike other electoral systems, in Mexico access to power

[1] In the election of July 1, 2018, 3 406 popularly elected positions were contested. The president of the Republic, 500 federal deputies, 128 senators, 16 mayors in Mexico City, 1 596 municipalities, 972 local deputies, eight governors, one head of government of Mexico City, and 184 other local officials were elected (Integralia Consultores, 2018).

[2] The list of murdered candidates was drawn up by crossing information from two reports published in *El Universal* ("Find out. Who are the candidates killed during the electoral process?") And in *Animal Político* ("Dying to be on the ballot") and the Seventh Report on Political Violence in Mexico prepared by Etellekt Consultores. The lists agree on the number of candidates killed and only differ in details such as the candidate's middle name or the way they are spelled. Once it was verified from various sources that the count of murdered candidates and pre-candidates coincided, a final list was integrated with the names of the candidates and the following data was searched online: municipality in which the candidate competed, municipality in which his murder occurred, state, position to which he aspired, date of the murder, age and sex of the candidate, which political party / coalition won on July 1 in the municipality in which the murdered candidate was competing, if there are indications of that in his campaign the candidate used a discourse against the drug trafficker, if the candidate sought reelection, and to which party did the murdered candidate belong. Said information with links to its sources was stored in a 46-page appendix. The appendix is available at: https://www.dropbox.com/s/ngppombeqkvn5pj/Anexo.%20Candidatos%20asesinados%20en%20M%C3%A9xico%202018.pdf?dl=0 [accessed on: September 5, 2018].

and political competition has largely followed the institutional path. Instead, the murder of candidates can be attributed to the activities of criminal organizations in the municipalities in which the murders occurred. Our statistical evidence suggests that in some states the candidates were among civilian casualties in the midst of criminal violence that the country is experiencing; however, in the states of Puebla and Guerrero, it is possible to affirm that the murdered candidates were targeted by criminal organizations. The phenomenon of electoral violence also seems to be a local phenomenon, since most of the victims were competing for positions at the municipal level. In a democracy in process of consolidation it is important to determine if the deaths of candidates had their origin in political processes, that is, whether they are the product of a process of institutional weakening in which political actors from enclaves of sub-national authoritarianism resort to murder as a strategy to perpetuate themselves in power; or, whether the murders are the product of contexts of criminal violence.

Therefore, this article has two objectives. First, distinguishing whether the wave of murdered candidates is rooted in political motivations based on electoral competition, or if they are the result of strategies undertaken by criminal organizations. During the electoral process, two possible hypotheses were discussed as potential causes of the ongoing murders. The first related to electoral competition. In other parts of the world it has been observed that electoral violence arises particularly in situations in which elections offer a real possibility of changing existing power relations, and it is precisely in closed elections in which politicians have incentives to make use of violence. The second hypothesis that was put forward was that criminal organizations could have used political assassinations as a strategy to politically capture state officials, and thus obtain a comparative advantage over other criminal organizations. Second, after identifying that the assassination of candidates is related to the presence and operation of criminal organizations, we set out to determine whether the murdered candidates were a specific target of the criminal organizations, or if they were victims of the environment of generalized violence, that is rampant in many areas of the country. To do this, we use an exact binomial test to test the hypothesis that candidates at the state level are more likely to be killed than the general population.

This article is organized as follows. First, we review the literature on crime and electoral violence, and the incentives that both criminal organizations and political parties have to make use of it. Then, after a thorough review of the press and the literature, we present some theoretical expectations about the causes of the murders of candidates in Mexico, that is, whether they are due to electoral competition or if they are related to the activities of criminal organizations. Next, we present a quantitative analysis of the municipalities that are located in states that suffered at least one murder of pre-candidates or candidates (710 municipalities excluding

Oaxaca), in order to test both narratives and to identify the political and social patterns that are correlated with the murders of candidates. In the conclusions, we present the research findings and the implications for the quality of democracy.

ELECTORAL VIOLENCE: ELECTORAL COMPETITION OR CRIMINAL ORGANIZATIONS?

Electoral violence has two main meanings. Firstly, it can be understood as a subset of activities within a larger political conflict, most of the time as part of a trajectory of ethnic violence within divided societies (Fjelde and Höglund, 2014; Wilkinson, 2004). Secondly, it can be related with the intentional use of force as a strategy to influence electoral results (Hafner-Burton *et al*., 2014; Höglund, 2009). Electoral violence is usually employed by two main actors; first, by governments and political parties —to remain in power or to harm their contenders— (Hafner-Burton *et al*., 2014; Höglund, 2009); and second, by criminal groups that seek to intimidate their opponents or to support allied politicians and thus obtain protection for their illegal activities (Albarracín, 2018; García-Sánchez, 2016; Ley, 2018; Ponce, 2019; Trelles and Carreras, 2012). Depending on who is the perpetrator, electoral violence will have different logics because it serves different objectives.

First, we will examine electoral violence exerted by governments or by political parties. Incumbent parties can resort to various electoral manipulation strategies, perhaps the most extreme of which is the use of violence. Electoral violence arises particularly in situations where elections offer a genuine possibility of changing existing power relations. Therefore, political parties facing closed elections will have greater incentives to promote violence as a mean of gaining power (Höglund, 2009, Strauss and Taylor, 2009). In addition, there are other factors that interact with electoral competition and that promote the use of violence; for example, an incumbent party has incentives to use pre-electoral violence if it anticipates an unfavorable electoral result and if there are also weak institutional controls on the executive (Hafner-Burton *et al*., 2014). For example, in Africa, incumbent parties have been associated with the use of political violence, especially in systems with poorly consolidated democracies (Onapajo, 2014; Strauss and Taylor, 2009) and with weak institutional controls (Onapajo, 2014).

In addition to electoral competition, there is also a link between electoral violence and electoral rules. Majority electoral systems are prone to generate violence in places where ethnic groups have been systematically excluded from power and where there are significant economic inequalities. In contrast, the proportional representation rules make it likely that even ethnic minority candidates will commit to respecting the rules of democratic competition, as these electoral rules guarantee them a minimum of representation to remain in the electoral arena until the next election (Fjelde and Höglund, 2014). A minimum of political representation reduces the incentives of political parties to resort to electoral violence.

For their part, criminal organizations also have incentives to get involved in electoral processes. Not only in Mexico, but in other parts of the world such as Italy (Alesina *et al*., 2016; Dal Bó *et al*., 2006; Daniele and Dipoppa, 2017), Brazil (Albarracín, 2018) and Colombia (García-Sánchez, 2016) there are examples of how criminal groups get involved in political affairs. It is usually assumed that criminal organizations act mainly motivated by economic interests; for example, to defend and control criminal markets (Osorio, 2015). However, they also act motivated for political ends, or in reaction to political variables.

The literature recognizes at least four reasons why criminal organizations attack sitting politicians or candidates. First, traffickers around the world usually avoid open confrontation, and prefer less visible techniques (such as corruption) to minimize the impacts of police action and law enforcement; but when the state undertakes repressive measures indiscriminately, drug traffickers respond by violently attacking state agents (Lessing, 2015).

Second, turf wars between different criminal organizations induce cartels to change the balance of the electoral game in order to capture state agents, and thereby gaining an advantage to control the market. Politicians can become the target of criminal violence when they decide not to cooperate with criminal organizations and instead they fight illicit markets (Albarracín, 2018). Consequently, criminal groups use violence to instill fear among voters and negatively affect voter turnout (Ley, 2018; Trelles and Carreras, 2012), often with the purpose of reducing the chances of victory for political opponents in areas over which they exercise territorial control (García-Sánchez, 2016). In extreme cases they try to eliminate electoral competition through threats or assassinations of rival politicians (Albarracín, 2018; Daniele y Dipoppa, 2017; Ponce, 2019). It is worth mentioning that criminalized electoral politics, in which there is an intentional use of force by criminal groups to influence politics, is predominantly a local phenomenon. Criminalized electoral politics may occur at the national or regional level, but a weak rule of law and limited accountability to civil society are required to make it attractive to criminal groups (Albarracín, 2018).

Third, armed groups can attack sub-national authorities in an attempt to extract economic resources from local governments (Cubides, 2005), and use them to strengthen their military presence (Chacon, 2018). This rent capture strategy is activated only if the amount of resources they can extract exceeds the costs of corrupting or coercing the authorities (Dal Bó *et al*., 2006). Finally, drug trafficking organizations can reap multiple benefits if they manage to capture sub-national elections: greater facilities for the transport of illegal drugs, fewer obstacles to money laundering, intelligence information, achieving protection from the local police, and even getting support from the police to combat rival organizations (Ponce, 2019). For this reason, electoral cycles, particularly electoral campaigns, stimulate

violence since it is more costly for criminal organizations to capture sitting politicians, who in theory have greater police protection, than candidates seeking power (Ponce *et al*., 2019). Consequently, Mexican cartels take advantage of the opportunities offered by local electoral cycles, when some politicians are vulnerable because of the lack the protection from central government authorities, and decide to attack mayors or candidates to gain control over local governments and thus are able to establish subnational criminal governance regimes (Trejo and Ley, 2019).

CANDIDATE'S MURDERS IN MEXICO

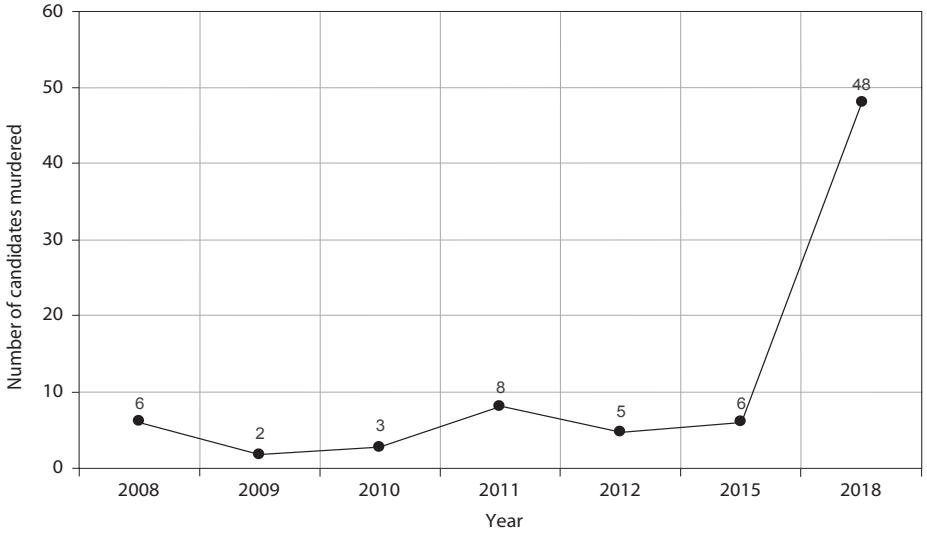
During the 2017-2018 electoral process, various actors expressed their opinions about the possible causes of the wave of candidates murdered in Mexico. In a press conference offered on May 27, 2018, the secretary of the Interior, Alfonso Navarrete, assured that the candidate murders were not linked to ideological reasons or to a fierce electoral competition, and "that among the causes of these homicides were disputes between criminal organizations, and issues of a personal and family nature" (Salgado, 2018). For his part, Rubén Salazar, director of Etellekt, a consultancy firm that developed a detailed count of attacks against candidates in 2017-2018, stated that a possible explanation for the murders was that "democracy is no longer the tool to settle differences in political competition" and that violence is being used "as the most effective resource to obtain public office and to get rid of opposition candidates" (EFE, 2018). Which of the two narratives best fits the causes of candidate killings? Should they be attributed to the conditions of electoral competition, or to the activities of criminal organizations?

A first approach to the causes of the murders of candidates and pre-candidates in Mexico is to make a general description of the main characteristics of the victims. As indicated in footnote number two, the data we use on candidate killings comes from reviewing newspaper notes.[3] The count we carried out showed that between September 8, 2017 — the beginning of the federal electoral process — and June 27, 2018 — the end of the electoral campaigns — 48 politicians were assassinated; 20 were already officially registered candidates and 28 were pre-candidates.[4] If we compare the 2018 figure with other federal and local electoral processes of the last ten years in Mexico, we will observe a dramatic growth in the number of murdered

[3] It is true that journalistic reports only attest to what has been declared by those who carry them out and, in this sense, it is necessary to wait for the conclusion of the procedures in which the corresponding authority determines if they were accredited or not; however, we chose to use this source of information because they allow us to have a first approximation of the events that occurred —in particular, the count of murders— without having to wait for the judicial processes to conclude. Furthermore, the most common practice of studies that study criminal violence is to use journalistic notes as the main input for the elaboration of their databases; See for example Osorio (2015), Trejo and Ley (2018, 2019).

[4] As of June 22, 2018, the INE reported the death of "41 people murdered among pre-candidates and candidates for popularly elected positions" (INE, 2018).

FIGURE 1. Candidates assassinated in Mexico: recent evolution



Source: Integralia Consultores (2015).

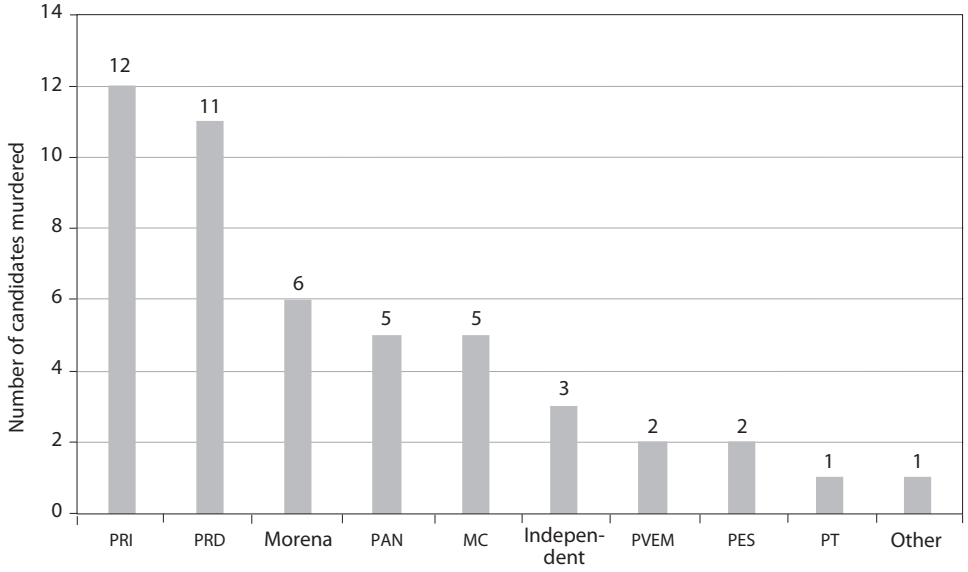
candidates. In previous electoral processes (federal and local) the number of murdered candidates ranged from two to eight (Figure 1).

Out of the 48 assassinated politicians, 26 aspired to a municipal presidency, eight to be local legislators, 10 to a local council and two more to be a federal legislator. These figures, in accordance with the literature (Albarracín, 2018), show that the victims were mostly candidates for positions at the local level. On the other hand, the figures of these murders show that, from the total number of murdered candidates, 41 were men and seven were women. This makes us suppose that the murders are not entirely random. If they were, we would observe a similar proportion of murders between men and women. This, because in Mexico it has been possible to postulate the same proportion men and women as candidates as a result of the adoption of gender quotas and, more recently, by the adoption of gender parity (Freidenberg and Alva, 2017).

Regarding the political affiliation of the victims, 12 belonged to the PRI, 11 to the PRD, six to Morena and five to the PAN (Figure 2). Since practically all the political parties that nominated candidates for popularly elected positions were victims of political violence, it seems that political orientation is not a variable that can be associated with the occurrence of murders.

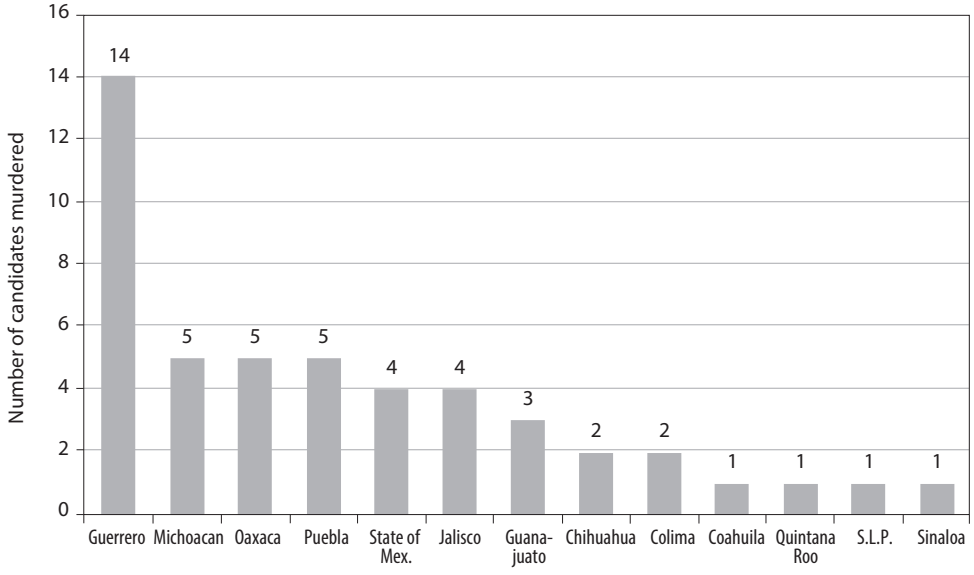
The state that registered the more candidates assassinated, according to the information gathered, was Guerrero, with 12; Michoacan, Oaxaca and Puebla follow with five murders each, and the State of Mexico and Jalisco with four murders (Figure 3). This suggests that the murders of candidates occurred mostly in the states most affected by criminal violence.

FIGURE 2. Candidates assassinated by political party



Source: Own elaboration from journalistic notes.

FIGURE 3. Candidates assassinated by state



Source: Own elaboration from journalistic notes.

The electoral competition hypothesis

As we previously said, governments and political parties can resort to electoral violence as a strategy to stay in power (Hafner-Burton *et al.*, 2013), especially in contexts of intense political competition (Höglund, 2009). Some murders of candidates in Mexico could fit this hypothesis. For example, Aarón Varela Martínez, Morena's candidate for the municipal presidency of Ocoyucan, Puebla, was assassinated on February 28, 2018. Although there are no clear lines of investigation, Morena militants stated before the media that they assumed that the death de Varela happened for political reasons. Ocoyucan has been under PRI control for almost three decades, with the support of Antorcha Campesina, and Aarón Varela was, in their opinion, the strongest political figure who represented a real possibility of ending PRI's dominance (Ayala, 2018).

Although the literature on political violence suggests that close or very competed elections can induce political actors to use violence as a mean to influence the electoral result; this may be less likely in the Mexican context. Firstly, because, as a result of a long historical-institutional process, political parties seem to have internalized that elections and not violence are the way to gain power, and secondly, because the party system in Mexico has showed for a long time a high degree of institutionalization (Greene and Sánchez-Talanquer, 2018),[5] which in turn gives structure and stability to electoral-political competition.

The fact that the political parties internalized that electoral competition is the way to come to power is the product of a long historical process. After the revolution, Mexico experienced a period of political instability characterized by the use of violence to come to power. In 1920, 1923, 1927 and 1929 there were major rebellions against the executive branch and around the presidential succession. Mexico was essentially governed by numerous warlords, regional and local leaders. This situation began to change with the founding of the National Revolutionary Party in 1929. According to Jeffrey Weldon (1997), "[t] he party was designed to prevent military revolts and electoral civil wars among members of the revolutionary family" (p. 247). The new party coordinated the selection of candidates for most of the popularly elected positions and also guaranteed that those who competed under the party's flag were elected; both elements were a strong incentive to avoid desertions within the revolutionary family. The result was that "by 1935, we have evidence that the main element of institutionalism, discipline, had permeated all layers of power" (Lajous, 1979: 657).

The second reason why we think that electoral competition is not related with the assassination of candidates, is that institutionalized party systems give structure and stability to party competition, which in turn makes interactions between parties

[5] Despite the fact that between 1990 and 2015 the party system in Mexico was the second most institutionalized in Latin America, it is possible to wonder if a deinstitutionalization process is beginning due to the entry of MORENA in the electoral arena (Greene and Sánchez-Talanquer, 2018).

more stable and predictable (Mainwaring, 2018). Likewise, as previously mentioned, electoral violence is less frequent when a country reaches higher levels of democratic stability and institutionality (Hafner-Burton *et al*., 2014; Onapajo, 2014). The party system in Mexico is relatively well institutionalized compared to other Latin American countries. This institutionalization had its origin in a competitive electoral system, although flawed in favor of the PRI. Like other authoritarian regimes, the PRI preferred to gain power through regular elections (though not entirely free and fair) instead of closing the electoral arena. These regular elections created succession mechanisms that helped stabilize power relations between political contenders because they encouraged them to compete through the party label instead of taking up arms (Greene and Sánchez-Talanquer, 2018). Both elements of institutionality, which originate from the time of the PRI's domination, make it less likely that political parties resort to arms as a way to come to power, even in cases of closed or very competed elections. From the above, we deduce the following hypothesis:

> **H1**. In Mexico, greater electoral competition will not be related to a greater occurrence of murder of candidates.

The criminal violence hypothesis

The literature on criminal violence recognizes that criminal groups can make use of violence against state agents, firstly as retaliation for government attacks (Lessing, 2015); second, to intimidate their political opponents (Albarracín, 2018; Ponce, 2019) or to punish politicians who do not provide them with the expected protection (Albarracín, 2018; Daniele y Dipoppa, 2017; Ponce, 2019); third, in order to capture rents that they can use in their war against other criminal organizations (Cubides, 2005; Chacón, 2018; Dal Bó, 2006); or finally, as a strategy to capture candidates when they are in a vulnerable situation —during campaigns and when they lack the protection of the central government (Ponce, 2019; Trejo and Ley, 2019).

An emblematic case in which criminal organizations appear to have resorted to violence against candidates is the murder of Fernando Purón Johnston, candidate to the Lower House by the PRI, in the 1st district of Coahuila. Purón had been mayor of Piedras Negras between 2014 and 2017. His administration was characterized by a frontal fight against criminal organizations, in particular against *Los Zetas*. During his campaign as a candidate for federal deputy, he had already received some threats. He was assassinated on June 8, 2018, as he was leaving a debate between candidates that took place in the Accounting Faculty of the Autonomous University of Coahuila, Piedras Negras campus. There, he had spoken out harshly against organized crime. After his murder, the Coahuila government captured the material perpetrators of Purón's murder and confirmed that it was planned and executed by members of criminal organizations (Agencia Reforma, 2018).

TABLE 1. Murders attributed to organized crime

Name	Municipality	State	Position
Fernando Purón Johnston	Piedras Negras	Coahuila	Federal deputy
Abel Montufar Mendoza	Pungaranato	Guerrero	Local deputy
Liliana García	Ignacio Zaragoza	Chihuahua	Local council
Guadalupe Payán Villalobos	Ignacio Zaragoza	Chihuahua	Mayor
Dulce Nayely Rebaja Pedro	Chilapa	Guerrero	Local deputy
Antonia Jaimes Moctezuma	Chilapa	Guerrero	Local deputy
Francisco Tecuchillo Neri	Chilapa	Guerrero	Mayor

Source: Own elaboration from journalistic notes.

Other cases, in which possibly criminal organizations were behind the murders, are presented in Table 1. Note that three of them occurred in Chilapa —in the Low Mountain of Guerrero—, one of the most violent regions in the country, in which two groups dispute the control of the poppy-producing area: "Los rojos" and "Los ardillos".

The increased presence of criminal organizations seems to be positively related to the incidence of murder of candidates and pre-candidates. This for several reasons: first, there is evidence that a greater number of criminal organizations operating in a municipality is associated with higher levels of violence related to criminal groups (Osorio, 2015), and with murders of "politicians who are caught in the middle of resulting narco-conflicts" (Blume, 2017: 67). It has also been documented that increases in violence between criminal organizations in one territory are positively associated with an increase in violence between criminal organizations in neighboring areas (Osorio, 2015). Both, the direct effect of the number of criminal organizations and the spillover effect of violence could affect the safety of candidates who participate in politics in these areas. Therefore, the following hypothesis can be derived:

> **H2a**. The greater the number of criminal organizations present in a municipality, the greater the probability that assassinations of candidates will occur.

Given that the most recent indicators on the number of criminal organizations we possess date back from 2012 (Coscia and Ríos, 2012), we also include the number of homicides as an alternative measure of criminal violence. The number of homicides is the measure most frequently used in studies of violence. According to Ponce (2019: 234): "The main advantage of this measure is its consistency and

simplicity on how rates of violence are calculated across time". In other cases, the murder rate may also be an indicator of the presence of criminal organizations. In Italy, for example, "the homicide rate in regions with a mafia presence is always much higher than in regions without a mafia presence" (Alesina *et al.*, 2016: 18). Therefore, we should observe the following relationship:

H2b. The higher the rates of violence in a municipality, the greater the probability that assassinations of candidates will occur.

DATA AND METHODS

To test the above hypotheses, we carried out a quantitative analysis at the municipal level in all the states in which murders of candidates occurred in the 2017-2018 electoral process. This represents 909 municipalities in 12 states of the country (see Figure 3). The municipality was chosen as the unit of analysis since most of the assassinated candidates aspired to positions at the local level (mayors, councilmen, and local deputies); only one candidate for a federal office (federal deputy) was killed.

To carry out the analysis, we included two alternative measures of the dependent variable. First, we have a dichotomous variable that identifies whether or not the murder of at least one candidate or pre-candidate occurred in the municipality in question. This variable takes the value of one if at least one murder occurred, and zero otherwise. The second measure of our dependent variable is a count of the number of candidates killed by municipality. In some municipalities, such as Chilapa, up to three murders of candidates occurred in the past electoral process (Table 1A, in the appendix, shows the descriptive statistics of the variables used).

The measures of the independent variables are three. First, the number of criminal organizations that operate in each municipality to test the hypothesis about the impact of organized crime organizations on the murders of candidates (Coscia and Ríos, 2012). Second, we include the homicide rate per 100 000 inhabitants per municipality, reported in the first half of 2018, just before election day, as a proxy for criminal violence.[6] This variable is continuous and its values range from 0 to 131 homicides per 100 000 inhabitants. Third, our electoral competition measure is instrumentalized as the subtraction of the percentage of votes obtained by the first place minus the percentage obtained by the second in the 2018 municipal elections.[7]

[6] We included the number of intentional homicides with a firearm reported by the Executive Secretariat of the National Public Security System, between January and June 2018. *Incidence of Municipal Crime Figures*, 2015, December 2018: https://www.gob.mx/sesnsp/acciones-y-programas/datos-abiertos-de-incidencia-delictiva?state=published [accessed on: March 8, 2019].

[7] The electoral data was obtained from the pages of the electoral institutes of the 12 states compared. Originally, electoral competition was measured as the difference between first and second place in the immediate municipal election prior to 2018 (Coahuila 2017, Colima 2015, Chihuahua 2016, Guanajuato 2015, Guerrero 2015, Jalisco 2015, Mexico 2015, Michoacan 2015, Puebla 2013, Quinta Roo 2016, San

The controls included in the analysis are variables that the literature has identified as possible predictors of electoral violence, in particular for the murders of candidates. The first control has to do with the functioning of the institutions in charge of imparting justice and the presence of a rule of law. An efficient legal system orders social relations, but its absence or the "brown areas" with less state presence lead to problems of governability (O'Donnell, 2004) and insecurity (Aguirre and Herrera, 2013). To measure the impact of the institutional strength and presence of the state, we included the number of officials of the Public Prosecutor's Office at the state level.[8]

It has also been argued that alternation in the governor's office can produce higher levels of violence, as the rotation of parties in the state government erodes informal protection networks that had facilitated the operation of organized crime organizations under unified governments (Trejo and Ley, 2018). To test this effect, we include a dummy that identifies the states in which there was an alternation before 2018. Likewise, it has been argued that political violence is more common at the local level and in smaller communities (Albarracín, 2018; Daniele y Dipoppa, 2017), therefore we include a variable that measures the percentage of the population that lives in populations with less than 2 500 inhabitants.[9] Additionally, we include the incidence of robberies at the municipal level, measured with the number of robberies with violence of passers-by on public roads.[10] This variable was included because in the press review we observed that in some cases the murders of the candidates were the product of robbery with violence, so it could be assumed that a higher incidence of robberies at the municipal level is positively related to the murder of candidates. Finally, we include the Municipal Human Development Index to control for structural factors of violence such as quality of life.

Statistic analysis

The hypotheses stated above were tested using two types of statistical models. First, logistic regression models to explain the presence or absence of political assassinations at the municipal level (models 1 and 2). Since we also want to identify which variables affect the number of candidates assassinated by municipality, we

Luis Potosi 2015, Sinaloa 2016). However, due to the changes in the levels of electoral competitiveness that may occur between the previous election and the 2018 election, we chose to use the 2018 results as our measure of electoral competition.

[8] Synthesis of municipal statistics on security and justice. National Institute of Statistics and Geography (INEGI). State and Municipal Database System (SIMBAD): http://sc.inegi.org.mx/cobdem/ [accessed on: March 8, 2019].

[9] National Institute of Statistics and Geography (INEGI). State and Municipal Database System (SIMBAD): http://sc.inegi.org.mx/cobdem/ [accessed on: March 8, 2019].

[10] Executive Secretariat of the National Public Security System, data from January to June 2018. Incidence of Municipal Crime Figures, 2015 - December 2018: https://www.gob.mx/sesnsp/acciones-y-programas/datos-abiertos-de-incidencia-delictiva?state=published [accessed on: March 8, 2019].

TABLE 2. Candidates murdered in Mexico

	Murders occur Logit		Number of murders Negative binomial	
	Model 1	**Model 2**	**Model 3**	**Model 4**
Number criminal org.	0.372*** (0.0716)	0.307*** (0.0845)	0.362*** (0.0837)	0.326*** (0.0986)
Homicide rate 2018	0.0278*** (0.00679)	0.0228*** (0.00393)	0.0342*** (0.00885)	0.0255*** (0.00359)
Margin of victory	0.0109 (0.0124)	0.0210** (0.00980)	0.00305 (0.0113)	0.0157** (0.00750)
Number of prosecutors	-0.0600 (0.0389)	-0.0367 (0.0269)	-0.0777* (0.0444)	-0.0552* (0.0334)
Alternation	0.508 (0.378)	0.577 (0.399)	0.788* (0.430)	0.785* (0.468)
Rural population	-0.00986 (0.00719)	-0.00875* (0.00525)	-0.0119 (0.00748)	-0.0106* (0.00586)
Robberies	0.000165 (0.00154)	0.000339 (0.00152)	0.000230 (0.00137)	-0.000165 (0.00135)
IDH	-1.016	-1.862	-3.074	-2.210
	(1.984)	(4.549)	(2.966)	(4.595)
Constant	-2.8054	-2.3456	-1.2317	-1.9718
	(1.5276)*	(3.2772)	(2.2964)	(3.3680)
N	897	897	897	897
Prob > chi^2	0.0000	0.0000	0.0000	0.0000
Pseudo R^2	0.1046	0.0786	0.1032	0.0848

Source: Own elaboration. Standard errors clustered by state in parentheses. *p<0.10; **p<0.05; ***p<0.01.

also used negative binomial models that have as a dependent variable the number of murders that occurred in each municipality (models 3 and 4). Additionally, we make a distinction between the municipality in which the candidate was murdered (models 1 and 3), and the municipality in which the candidate was competing (models 2 and 4). We proceeded in this way since in some cases the candidate was not killed in the municipality for which he was competing, but in a neighboring municipality.

The results of regressions 1 and 2 (Table 2) reveal that the occurrence of candidate killings is closely related to the activities of criminal organizations. Thus, the greater the number of criminal organizations operating in the municipality, the greater the probability that murders will occur in the municipality in question. Furthermore, the rate of intentional homicides with a firearm in the municipality

is an important predictor of the occurrence of candidate killings. Despite finding this significant positive relationship between our two indicators of criminal organization activities with the murders of candidates, it is still necessary to use alternative investigative methods to clarify the causal mechanism by which this relationship is observed. One mechanism that can explain this relationship is that criminal organizations preventively eliminate candidates that they believe may affect their illicit activities if they are elected or that criminal organizations carry out a settling of scores with politicians involved in criminal activities, or with politicians who do not cooperate with them. Another possible mechanism is that candidates die as a collateral damage in the midst of an environment of criminal violence. The only thing that we can affirm from this statistical analysis is that a greater presence of criminal organizations has a statistically significant impact on the occurrence of candidate killings.[11]

The variable of political competition does not show a statistical association with the occurrence of murders in the municipality in which the homicide took place (model 1), but surprisingly higher margins of victory are positively related to the occurrence of murders in the municipality in the one in which the candidate competed (model 2). It is logical that narrow margins of competition do not affect the municipalities in which the murders occur, but that its effects are felt in the municipalities in which candidates were competing; however, what should be observed is that greater electoral competition —narrower margins of victory— would make murders more likely to occur.[12] When we use the margin of victory observed in the immediate election prior to the 2018 election as a measure of political competition, there is no statistical association with the occurrence, nor with the number of murders.

Since the logistic regression coefficients cannot be directly interpreted, a simulation was performed to estimate the changes in the probability of occurrence of murders, keeping the rest of the variables at their mean values.[13] When the number of criminal organizations operating in a municipality is zero, the probability that at least one murder of a candidate occurs in that municipality is 2.10 per cent, *ceteris paribus*; when the number of criminal organizations increases for example to three,

[11] These results are robust to other specifications such as the logistic regression for rare events (King and Zeng, 2001) and the maximum penalized likelihood (Firth, 1993). Applying conventional binary regression models to analyze rare cases such as the murder of candidates (a dependent variable with a frequency of thousands of zeros and very few ones) can result in biased estimates, so it is necessary to use models that account for the behavior of the data. Therefore, alternative estimates were made using the routines proposed by King and Zeng (2001) and by Firth (1993).

[12] Additionally, the result of model 2 should be taken with reserve, since it is not statistically significant using the logistic regression for rare events (King and Zeng, 2001) and it is marginally significant (p <0.10) using the maximum penalized likelihood (Firth, 1993).

[13] The simulation was performed using the *margins* command in Stata.

the probability rises to 6.15 per cent; and if the number of criminal organizations reaches nine, which is the maximum value observed in the sample, the probability reaches 37.90 per cent. In models 1 and 2, which estimate the occurrence of candidate killings (logit regressions), none of the control variables was statistically significant, although all show the expected sign according to the theory. The only exception is the variable that controls for the percentage of inhabitants in each municipality who live in a rural area, which in model 2 shows a negative and significant relationship with the occurrence of murders.

The analyzes of the negative binomial regressions, which use the number of candidates killed by municipality as the dependent variable (models 3 and 4), are similar to the results of the logistic regressions, but have some differences regarding the impact of the control variables. There is also a significant statistical association between our two measures of the independent variable, with the number of candidates killed in each municipality and also with the number of candidates murdered in the municipality in which they competed. These findings reinforce the idea that the murder of candidates in the past electoral process in Mexico is a phenomenon that is closely related with the activities of criminal organizations. Unlike logistic regressions, the negative binomial analysis identifies a negative association between the number of public prosecutors and the number of murders. This suggests that a greater presence of the state, in particular of the institutions in charge of investigating crimes, has a decreasing impact on the number of candidates murdered. Some authors have already argued that the lack of institutions for the administration of justice, whether local or state, results in an institutional environment that contributes to impunity and violence (Aguirre and Herrera, 2013). In line with the findings of Trejo and Ley (2018), who report that political alternation and party rotation in state government are associated with an increase in violence between cartels, our results from models 3 and 4 show that the alternation in state governments is positively related with the occurrence of candidate killings. The rest of the controls seem to have no statistical relationship with the phenomenon studied.

As we previously mentioned, the variable of political competition was not significant in models 1 and 3 (logit and negative binomial for the municipalities in which the murders took place) and in models 2 and 4 (municipalities in which candidates competed) this variable resulted with an opposite sign to what was expected. To further analyze this relationship, we used logistic regression models for rare events and found that the political competition variable was not significant in any of the models. Similarly, we used a regression discontinuity approach as an additional robustness check for either identifying or ruling out any effect of the political competition variable. The discontinuous regression strategy is typically used to evaluate the impact of an intervention on a dependent variable. In sharp discontinuous regression designs, an observable variable Z_i is used as a continuous target-

ing variable that determines the eligibility to be included in the treatment or not, from a threshold z. "The discontinuous regression estimator is based on the observation that individuals just to the left of the threshold must be very similar to individuals just to the right of the threshold, except that the former participate in the program and the latter do not" (Bernal and Peña, 2011: 202).

In our analysis, we used the margin of victory as the Z targeting instrument, under the assumption that perhaps below a certain threshold in the margin of victory the murder of candidates was more likely to be observed. We included several z targeting thresholds (0.5, 2, and 5% victory margins)[14] as a strategy to identify the sensitivity of the results to various thresholds. We also used degree one, two, and four polynomials to identify linear and nonlinear patterns on the slopes of the estimated lines. Finally, and following Dell (2015), we included tables with the values taken by the other variables that could affect the murders in the upper and lower neighborhoods at our different thresholds, to verify that the assumption of local continuity around the threshold was fulfilled (Panel A, from table A2 in the appendix). The discontinuous regression estimator was not significant with any of the different thresholds, nor with the estimates with different polynomials (Panel B, from Table A2 in the appendix). Therefore, using this method, it is not possible to attribute an effect to the electoral competition variable either.

VICTIMS OF GENERAL VIOLENCE OR THE TARGET OF CRIMINAL ORGANIZATIONS?

In the previous section, we established that the murder of candidates is related with the presence and operation of criminal organizations in their municipalities. However, this statistical relationship does not allow us to determine whether the murdered candidates were a specific target of criminal organizations or if they were victims of the environment of violence that exists in many areas of Mexico. The homicide rate nationwide in the first half of 2018 was 29.27 per 100 000 inhabitants, while the rate of murdered candidates and pre-candidates nationwide was 55.39 per 100 000 candidates. These figures indicate, at first glance, that during the 2017-2018 electoral process, more candidates died than ordinary citizens. This leads us to raise the following proposition:

> **P1.** The probability of being murdered among the candidate subpopulation is greater than among the general population.

Following Bartman (2018), who analyzes the murder of journalists in Mexico, we used an exact binomial test to identify whether candidates at the state level are more likely to be killed than the general population. The exact binomial test evalu-

[14] In other studies on criminal violence and electoral competition, a threshold of 5 per cent was used in the margin of victory (Dell, 2015).

ates whether there is a significant deviation from the binomial distribution. It is appropriate to use it when there are two discrete results for the same categorical variable, for example two different results for each state. The null hypothesis is that the ratio of successes equals a particular ratio. In this case, the test calculates the probability of observing k (or more than k) candidates killed in a state with a probability p of homicides for the general population, given that the probability of being killed would be the same for both candidates as for the general population (Equation 1). If the test is significant it indicates that the probability of candidates murdered differs from that of the general population.

$$P(K \geq k) = \sum_{i=K}^{n} p^i * (1-p)^{n-1} \binom{n}{i} \quad (1)$$

Where, n = number of candidates by state, p = probability of homicides of the population in the state, and k = number of candidates killed in each state. This estimation requires the number of candidates killed by state,[15] the total number of candidates who participated in the electoral process in the state (Table A3, in the appendix),[16] the number of homicides by state,[17] and the general population by state.[18]

When we compare the homicide rates per 100 000 inhabitants with the rate of candidates assassinated, it turns out that the rate of murdered candidates is higher than that of the general population in the states of Quintana Roo, Colima, Guerrero, Puebla, Jalisco and Coahuila (Figure 4). However, in the states of Quintana Roo and Colima, there was only one candidate assassinated, so its apparent high rate of candidate homicides may be due to the fact that this single homicide is being weighted by a very small population of candidates. In the rest of the states the rate of murdered candidates is equal to or less than the rate of the general population.

To determine if these differences are significant we applied the exact binomial test. Table 3 shows the p-values of the exact binomial test for the 12 states in which assassinations of candidates and pre-candidates occurred in the 2017-2018 electoral process.[19] The homicide rate differs significantly in only two states: Puebla and Guerrero. Therefore, in these two states, proposition 1 is confirmed: the probability

[15] See footnote number two.

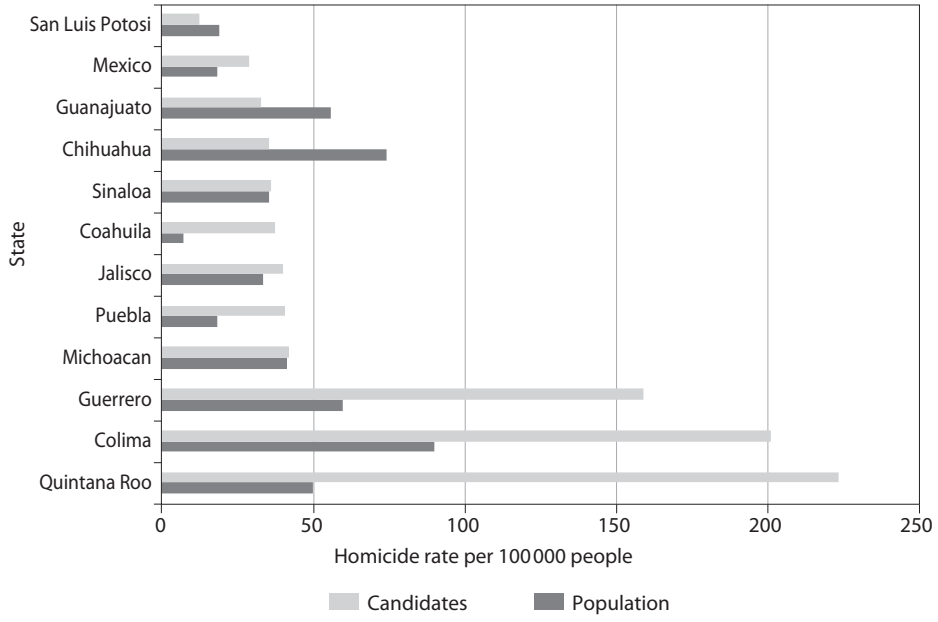
[16] Information obtained from the electoral institutes of the states, for local candidates; and INE's information for federal candidates.

[17] Report of deaths from homicide, by year, according to entity and municipality of occurrence. As of October 31, 2019, the 2018 information was updated with definitive figures, due to the completion of the processes for generating the registered death statistic, for said period: https://www.inegi.org.mx/sistemas/olap/consulta/general_ver4/MDXQueryDatos.asp?#Regreso&c= [accessed on: November 11, 2019].

[18] Conapo, Demographic indicators 1950-2050, population estimates by state for the middle of 2018: https://datos.gob.mx/busca/dataset/proyecciones-de-la-poblacion-de-mexico-y-de-the-states-entities-2016-2050 [accessed on: November 11, 2019].

[19] Remember that in the analysis we excluded the state of Oaxaca.

FIGURE 4. Comparison of probabilities of homicides of candidates and the general population



Source: Own elaboration.

TABLE 3. P-values for the exact binomial test

	P-values
Coahuila de Zaragoza	0.1719
Colima	0.2252
Chihuahua	0.4574
Guanajuato	0.5041
Guerrero	**0.0011**
Jalisco	0.5868
Mexico	0.3278
Michoacan de Ocampo	0.8226
Puebla	**0.0741**
Quintana Roo	0.2006
San Luis Potosi	1.0000
Sinaloa	0.6296

Source: Own elaboration.

of being murdered among the candidate subpopulation is greater than among the general population. The states with the highest homicide levels are not *per se* the states that experience the most homicides against candidates in the Mexican elections. From the evidence presented in this section, we can conclude that the presence and operation of criminal organizations can produce the murder of candidates as a collateral damage, that is, that they do not necessarily focus on assassinating them; but in the states of Puebla and Guerrero, there is statistical evidence suggesting that the high murder rate of candidates was the product of strategies in which criminal organizations targeted candidates.

DISCUSSION

Electoral violence, understood as the intentional use of force as a strategy to influence electoral results, can be used by governments and political parties (Hafner-Burton *et al*., 2014), as well as by criminal groups (Albarracín, 2018; García-Sánchez, 2016; Ley, 2018; Ponce, 2019; Trejo and Ley, 2019; Trelles and Carreras, 2012). The murders of the pre-candidates and candidates who participated in the 2017-2018 electoral process have multiple causes. Based on a statistical analysis of the municipalities located in the states affected by political violence, we find that the murders of candidates in the past electoral process are related to the presence (number) of criminal organizations and with the homicide rate in the municipalities where the murders occurred, as well as the same rate for those municipalities where the candidates competed. Considered together, the evidence gathered from reviewing of the press and the evidence from the statistical analysis suggest that organized crime activities are one of the most important variables behind the killings of candidates in the electoral process. Unlike other regions of the world, electoral competition does not appear to be a direct cause of the murder of candidates in Mexico.

Having established that the killings of candidates are related to the activities of criminal organizations, we proceeded to assess whether the killings are the product of a strategy in which the candidates are the specific target of criminal organizations, or whether their deaths may be attributed to the general context of violence in the country. In two states of the country (Puebla and Guerrero) we find that the murder rate for candidates differs significantly from that of the general population, and therefore it is feasible to assume that in those states the murdered candidates were the target of criminal organizations.

Additionally, the statistical analysis suggests that there is a negative relationship between the number of public prosecutors operating in each state —a proxy for state capacity— and the number of candidates murdered in each municipality. This indicates that a greater presence of state security agencies, particularly those in charge of initiating and directing criminal investigations on behalf of the state, may be an element that dissuades members of criminal organizations from carrying out

acts of violence against the candidates. Similarly, Trejo and Ley (2019: 2) also conclude that criminal organizations particularly attack and threaten politicians who "are politically and militarily unprotected by the central authorities."

These findings allow us to argue that, as the costs of exercising electoral violence increase, with more agents in charge of activating and exercising criminal justice on the streets, the less likely that assassinations of candidates will occur. Conversely, when the costs of exercising electoral violence decrease, with more criminal organizations operating in a given municipality and a higher homicide rate, it is more likely that political assassinations will increase. If we consider both findings together, we could argue that electoral violence is primarily the product of material incentives to compete among criminal organizations and of a weak rule of law.

What are the implications of these findings for the quality of democracy? What is the role that criminal organizations will play in the short and medium term in Mexican democracy? Although it has been argued that criminal organizations have neither the means nor the intention to appropriate the state or its territory (Lessing, 2015), nor to model electoral governance institutions at their whim (Schedler, 2014), there is no doubt that the recent wave of murdered candidates has damaged the electoral arena. The security of local candidates in many states of the country does not seem to be guaranteed. If the fact that running for popularly elected positions at the local level in certain regions of the country represents a risk to the lives of the candidates: Who will run for office? Will the number and quality of candidates decrease? Ponce (2019) has found that the number of candidates decreases significantly in the most violent municipalities. Future investigations could also determine whether in the states most affected by the murder of candidates there is a decrease in the years of experience of the candidates, or in other indicators of their quality. Additionally, and thinking about designing public policies aimed at reducing the incidence of this problem, pilot programs could be implemented during electoral periods in which the presence of public prosecutors is increased in the areas most affected by violence against candidates. Although we observed a significant increase in the number of assassinated candidates in the 2017-2018 electoral process, we are still in time to contain its expansion and harmful effects. Pg

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APPENDIX

TABLE A1. Descriptive statistics

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
Murder at municipality (*dummy*)	908	0.04	0.20	0	1
Number of murders at municipality	908	0.05	0.27	0	4
Murder at municipality at competition (dummy)	908	0.04	0.20	0	1
Num. Murders at municipality at competition	908	0.05	0.24	0	3
Num. Crim. Org.	908	0.84	1.34	0	9
Homice rate (per 100 000 people)	907	9.07	14.97	0	131.7
Robberies first sem. 2018	909	12.06	67.88	0	1065
Margin of victory	906	11.87	10.93	0	75.64
Num. prosecutors (per 100 000 people)	909	7.43	5.93	2.5	24.8
Alternation	909	0.46	0.50	0	1
Rural population	907	52.58	33.23	0	100
IDH	902	0.681	0.063	0.42	0.846

Source: Own elaboration.

TABLE A2. Baseline characteristics

A. Baseline characteristics (mean)				B. Fuzzy discontinuous regression estimators			
	Margin of victory (bandwidth)				Bandwidth = 0.5		
	0<MV< = 0.5	0.5<MV< = 1.0	*t*-stat on means difference		Grade 1 polynomial	Grade 2 polynomial	Grade 3 polynomial
Rural population percentage	44.321	53.979	1.100	RD Estimate	-0.15072	-0.26139	-0.48138
Num. Crim. Org.	0.793	0.714	-0.193	Standard error	0.13838	0.24172	0.44548
Homicide Rate	7.176	8.361	0.516	*P*-value	0.276	0.28	0.28
Robberies	10.276	2.643	-0.923	Bandwidth (h)	0.562	0.59	0.744
IDH	0.686	0.702	0.950	Num. Obs. Left	29	29	29
N	29	28		Num. Obs. Right	32	34	45
	Margin of victory (bandwidth)				Bandwidth = 2		
	0<MV< = 2	2<MV< = 4	*t*-stat on means difference		Grade 1 polynomial	Grade 2 polynomial	Grade 3 polynomial
Rural population percentage	50.192	56.272	1.387	RD Estimade	-0.02613	-0.00666	-0.06047
Num. Crim. Org.	0.911	0.728	-0.955	Standard error	0.05579	0.06469	0.06663
Homicide Rate	9.050	10.903	0.826	P-value	0.64	0.918	0.364
Robberies	9.854	6.699	-0.454	Bandwidth (h)	1.79	2.016	1.794
IDH	0.691	0.678	-1.629	Num. Obs. Left	109	122	109
N	123	103		Num. Obs. Rightw	86	105	86

TABLE A2. Baseline characteristics (continuation)

A. Baseline characteristics (mean)				B. Fuzzy discontinuous regression estimators			
	Margin of victory (bandwidth)				Bandwidth = 5		
	0<MV< = 5	5<MV < =10	*t*-stat on means difference		Grade 1 polynomial	Grade 2 polynomial	Grade 3 polynomial
Rural population percentage	53.578	51.954	-0.538	RD Estimate	-0.04118	-0.0337	-0.0009
Num. Crim. Org.	0.796	0.755	-0.348	Standard error	0.07979	0.11391	0.20203
Homicide Rate	9.566	8.419	-0.805	*P*-value	0.606	0.767	0.996
Robberies	8.857	7.815	-0.226	Bandwidth (h)	2.044	2.699	3.461
IDH	0.683	0.680	-0.462	Num. Obs. Left	105	140	181
N	280	216		Num. Obs. Right	97	131	160

Source: Own elaboration.

TABLE A3. Number of candidates in the electoral process 2017-2018

	Mayor*	Loc. Dep. (Plurality)	Loc. Dep. (PR)	Governor	Senator (Plurality)	Fed. Deputy (Plurality)	Total
Coahuila	2638				6	42	2686
Colima	728	168	81		6	12	995
Chihuahua	5 201	290	108		10	98	5 707
Guanjuato	8 603	276	144	5	10	152	9 190
Guerrero	8 036	558	156		8	60	8 818
Jalisco	9 406	275	153	7	12	208	10 061
Mexico (State of)	12 859	550	80		6	246	13 741
Michoacan	11 288	304	264		10	74	11 940
Puebla	11 488	274	308	5	10	150	12 235
Quintana Roo	418				6	24	448
San Luis Potosi	7 682	172	156		6	42	8 058
Sinaloa	1 018	228	270		8	46	1 570

Source: Own count with information from the state electoral institutes and from the INE for positions of federal election. *Includes candidates for municipal president, councilors and syndics.