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Consequences Of Violence Against Social Leaders In Colombia

Germán D. Orbegozo-Rodríguez [~]

Abstract

I study the causal effect of violence against social leaders on coca cultivation and land restitution requests in the Colombian context from 2012 to 2018. Using the timing of unexpected killings of social leaders in an event study approach, I provide evidence that the start of the violence against social leaders increases hectares of coca by a magnitude of at least 0.27 standard deviations and reduces land restitution requests by a magnitude of at least 0.29 standard deviations, both in the medium term. As more leaders get killed, the effect becomes larger over time. Attempts to kill social leaders have a similar impact on the outcomes. I provide evidence that suggests that this effect is driven by the deterioration of the collective action capacity of civil society, which is depreciated as more violence is exerted on social leaders.

Jel Codes: D7, D74, K42, O10, O17 ***Keywords:*** Social leader, Killing, Collective action, Coca, Land Restitution.

[~]Department of Economics, Universidad de los Andes, gd.orbegozo10@uniandes.edu.co. This study has benefited greatly from continuous advice and fruitful conversations with many people. I thank Leopoldo Fergusson, María Alejandra Vélez, Juan Fernando Vargas, James Robinson, Juan Sebastian Galán, Manuel Fernández, Nicolás de Roux, Mauricio Villamizar, Michael Weintraub, Rafael Santos, Andrés Zambrano, Rachid Lajaaj, Santiago Pérez, Pedro Cabra, Nicolás Urdaneta, Andrés Díaz, Andrés Dávila, Sara Restrepo, Juan David Torres, Daniela Gualtero, Jorge Caputo, Diana Pérez, Douglas Newball, Santiago Torres and Sofía Meléndez for their insightful comments and generosity. I am also thankful to ADES seminar and Brown Bag Seminar participants. Special thanks to Somos Defensores, INDEPAZ, Juan Fernando Vargas and Pascual Restrepo for sharing their information with me. All errors remain my own. My hope with this work is to open a new dimension of importance and urgency to the tragic situation of social leaders in Colombia. While studying the costs of the killings of social leaders I do not neglect or overlook the inconmensurable loss of a human life.

Consecuencias de la Violencia Contra Líderes Sociales en Colombia

Germán D. Orbegozo-Rodríguez [~]

Abstract

Estudio el efecto causal de la violencia contra líderes sociales sobre los cultivo de coca y las solicitudes de restitución de tierras en el contexto colombiano de 2012 a 2018. Utilizando el momento en el que se asesinan líderes sociales en un estudio de eventos, encuentro que el inicio de la violencia contra líderes sociales aumenta las hectáreas de coca en al menos 0.27 desviaciones estándar y reduce las solicitudes de restitución de tierras en al menos 0.29 desviaciones estándar, ambos en el mediano plazo. A medida que se asesinan más líderes, el efecto aumenta a través del tiempo. Los intentos de asesinato a líderes sociales tienen un impacto similar en sobre las variables de interés. Doy evidencia sugestiva de que el efecto se da por el deterioro de la capacidad de acción colectiva de la sociedad civil, que se deprecia a medida que se ejerce más violencia sobre los líderes sociales.

Códigos JEL: D7, D74, K42, O10, O17 ***Palabras Clave:*** Lider Social, Asesinato, Acción Colectiva, Coca, Restitución de Tierras.

[~]Facultad de Economía, Universidad de los Andes, gd.orbegozo10@uniandes.edu.co. Este trabajo se ha beneficiado enormemente del consejo de muchas personas. Agradezco a Leopoldo Fergusson, María Alejandra Vélez, Juan Fernando Vargas, James Robinson, Juan Sebastian Galán, Manuel Fernández, Nicolás de Roux, Mauricio Villamizar, Michael Weintraub, Rafael Santos, Andrés Zambrano, Rachid Lajaaj, Santiago Pérez, Pedro Cabra, Nicolás Urdaneta, Andrés Díaz, Andrés Dávila, Sara Restrepo, Juan David Torres, Daniela Gualtero, Jorge Caputo, Diana Pérez, Douglas Newball, Santiago Torres y Sofía Meléndez por sus comentarios y generosidad. También agradezco a los participantes del seminario ADES y del Brown Bag Seminar. Agradezco especialmente a Somos Defensores, INDEPAZ, Juan Fernando Vargas y Pascual Restrepo por compartir sus datos conmigo. Todos los errores son únicamente míos. Espero con este trabajo poder abrir una nueva dimensión de importancia y urgencia a la trágica situación de los líderes sociales en Colombia. Al estudiar los costos de los asesinatos de líderes sociales no pierdo de vista la inconmensurable pérdida de una vida humana.

1 Introduction

Between 2005 and 2018, at least 767 social leaders[1] have been murdered in Colombia. The reasons behind these murders are diverse but are usually linked to the opposition of social leaders to the activities carried out by criminal groups such as coca cultivation, the obstruction of land restitution processes, and the exploitation of natural resources in their territories, among others. Can violence against social leaders affect coca cultivation and land restitution requests? If it does, through what channels does it happen? In this paper, I study the causal effect of violence against social leaders -killings and attempts to kill them- over the outcomes of coca cultivation and land restitution requests for the Colombian context.

My main contribution to the literature is to propose and empirically test a theoretical link between the violence exerted on social leaders to the outcomes, and to causally estimate the direction and magnitude of the effects. I propose the deterioration of the collective action capacity[2] of civil society as the channel through which the effect takes place. Also, by separating the effects of attacks/attempts to kill from the effects of killings, I provide a theoretical framework to study the consequences of different types of violence against social leaders. This distinction sheds light on how this type of violence affects communities and economic outcomes.

Social leaders mobilize people in their communities, help implement policies, demand services/state presence in their territories (Prem et al., 2019), and are the essential "brokers" to initialize and sustain collective action (Lobo et al., 2016). Given the important leadership role that social leaders play inside their communities, it seems reasonable that violence against

[1] Although there is not an entirely agreed-upon definition for the term, social leaders are usually understood as activists at the local level that represent different civil organizations such as community councils or community action boards. They are also human rights activists, environmental activists, among others. In Section 3 I describe with more detail the definition used for this study.

[2] Collective action capacity is understood in my study as the ability that a community has to jointly achieve a goal, whether it is demanding the provision of public goods to the state, not allowing activities they do not want to be carried out in their territories, to the manifestation of their disagreement with criminal groups. This concept is closely linked to the notion of collective resistance, which Arjona (2016) defines as: "instances of concerted opposition to the armed actor by disobeying its mandates, making demands on it, or both".

them reduces the capacity for collective action of civil society, thus decreasing their ability to collectively oppose to different groups (either criminal groups, political elites, private companies with extractive interests, etc.). Therefore, I hypothesize that violence exerted on social leaders will subdue their communities to the interests of the criminal groups and thus increase the number of hectares of coca, and reduce the number of land restitution requests, as these effects are usually related to the reasons behind the killings of social leaders. Figure A1 in the Appendix shows the headlines of some news that link the killings of social leaders to these outcome variables.

I provide estimates of the effects of violence against social leaders using two different empirical strategies. First, I use the timing of unexpected killings in an event study approach to examine the dynamic effects of the first killing of a social leader in a municipality over the outcome variables. Unexpected killings are defined as killings that are the first to happen after years where no other killing of a social leader took place. Studying the first unexpected killing is important as it marks the beginning of a wave of violence against social leaders and their communities, and is harder to anticipate than killings that happen in an endogenous dynamic of violence.

Second, I exploit exogenous variation coming from attempts to kill social leaders in which the leader survives the attack. I will argue that conditional on observing an attack against a social leader, whether the attempt succeeds or not is as good as random, which I use to identify the incapacitation effect of killings. I show that conditional on an attempt to kill taking place, whether it succeeds or not is not correlated to various municipality characteristics, including the level of risk that social leaders face in that municipality, suggesting that the basic identification assumption may be plausible.

I find that the start of violence against social leaders has a substantial effect on the outcomes in the medium term. In particular, killings of social leaders increase coca hectares by at least 0.27 standard deviations (SD), 2-3 years after the first unexpected killing. When examining the treatment intensity with accumulated killings over time (which can be inter-

preted as the cumulative depreciation of the collective action capacity), I find a larger effect of 0.45 SD. Similarly, killings of social leaders reduce land restitution requests by 0.26 SD in the second year after the first killing and an additional killing reduces land restitution requests by 0.18 SD. The magnitudes and directions of the effects estimated using the exogenous variation coming from the randomness of attempts to kill that do not succeed are consistent with these assessments, which provides evidence that the size and directions of the effects estimated with both empirical strategies are reliable.

While the first unexpected killing of a social leader does not have immediate effects on the outcomes, there are considerable negative effects after some years as more leaders get killed. Additionally, there are significant effects at the intensive margin (having lots of killings relative to fewer or none). These results are consistent with the fact that the first killing unleashes more violence against other leaders and their communities, which further depreciates the capacity of civil society to collectively oppose criminal groups and forces them to give up control of their territory.

Killings are not the only type of violence against social leaders that has negative consequences over the outcomes. I find that attempts to kill (which do not include killings, that is, a killing does not count as an attempt to kill) also increase coca hectares and reduce land restitution requests considerably. This happens because, even if a killing does not take place, an attempt to kill can deter social mobilization against the criminal groups through intimidation of the population and fear (Kaplan, 2017).

Literature related to violence against social leaders is scarce and recent. The few works in the economics literature on the topic explore how the peace treaty in Colombia and alternative development programs such as the PNIS[3] explain the increase in killings of social leaders during the last decade (Prem et al., 2019, Marín, 2020, Marín and Vélez, 2021). Works from other disciplines explore the issue of data availability and find that killings of social leaders are largely underreported (Ball et al., 2018) and discuss the recent drastic increase in the

[3]The PNIS is a program focused on illegal crop substitution, in which families that used to cultivate coca are paid to substitute those cultivations for other legal crops.

reported number of killings of communal leaders[4] in Colombia (De-Arteaga and Boecking, 2019).

To the best of my knowledge, mine is the first work that seeks to understand the consequences of -not only killings but more broadly, violence- against social leaders. Therefore, I contribute to the literature by taking a first step towards answering a question yet to be addressed regarding the consequences of violence against social leaders on social outcomes. I also contribute by proposing a theoretical mechanism that connects the killings of social leaders to the outcomes and to causally estimate their impacts.

My work is also related to the literature that studies how the collective action capacity of communities determines their ability to concert opposition to armed actors by disobeying or making demands to them -to collectively resist- (Arjona, 2016, Lobo and Vélez, 2020, Kaplan, 2017). Yet, there is no consensus about the relationship between violence and the capacity of collective action of a community. For instance, some studies have found that violence can trigger altruism, cooperation, social participation, trust, and social cohesion (Bellows and Miguel, 2009, Annan et al., 2011, Bateson, 2012), which could mean that violence leads to collective action. On the other side, some studies find that violence deteriorates trust and collective action itself (Besley and Reynal-Querol, 2014, Grosjean, 2014, Rohner et al., 2013, Cassar et al., 2013). In her theory of Rebelocracy, Arjona (2016) notes: *"We ignore whether violence leads to collective action within a context of war, and how lasting such effect might be if perpetrators are still around and armed"*. To this extent, I contribute to this literature by providing suggestive evidence that violence against social leaders depreciates the capacity for collective action of communities.

Furthermore, Bauer et al. (2016)'s meta-analysis on war and cooperation shows that people exposed to violence tend to increase their social participation, social capital, and community leadership. I add to this literature by showing that this evidence is inconsistent with the case of violence exerted against social leaders, as it dissolves the leadership processes

[4]Communal leaders are the democratically elected heads of Community Action Boards (Juntas de Acción Comunal) which are local organizations institutionalized in Colombia since 1958.

and undermines social fabric. Also, recent works have studied the effects of assassinations on different outcomes. For instance, Kreitmeir et al. (2020) show that publicizing the assassinations of environmental activists negatively impacts the asset prices of firms associated with the event, and Jurado and Morales (2020) show that killings of journalists reduce media coverage in the context of the Mexican war against drugs. My work adds to this strand of literature by studying the case of assassinations of social leaders.

Finally, a vast literature about the consequences of civil war and conflict for the Colombian context has shown that conflict can affect labor supply (Fernández et al., 2011), agricultural production (Arias et al., 2019), years of schooling (Fergusson et al., 2020), and deforestation (Fergusson et al., 2014), among many other variables. Nevertheless, none of these studies has focused on the particular type of violence that is exerted on social leaders. Due to the important role that social leaders play inside their communities as the intermediaries to initialize and sustain collective action (Lobo et al., 2016), violence against them should have particular effects relative to other kinds of indiscriminate violence. My work seeks to address this void in the literature.

2 Context

Killings of social leaders in Colombia have gained significant media and national attention due to the number of cases that continue to be reported year after year. From 2005 up until 2018, 767 killings of social leaders have been reported by the NGO Somos Defensores.[5] Only in 2018, 155 social leaders were killed. According to the international NGO Front Line Defenders[6], during 2017 Colombia was the country with the highest number of killings of human rights defenders, and accounted for 30% of the total reported killings worldwide (91 out of 312), from the 27 countries with cases (Defenders, 2017).

Persecution of social leaders is not a recent issue in Colombian history; examples can

[5] More about them on section 3.

[6] Front Line Defenders is an international NGO working for the protection of human rights defenders at risk. Their website is: https://www.frontlinedefenders.org/en

be found since the rise of the first guerrillas during the 1960s, during the escalation of drug trafficking and paramilitarism between the 1990s and 2000s, up until this day, in the context of the after-effects of the peace agreement with the largest guerrilla group at the time, the *Revolutionary Armed Forces of Colombia* (FARC, from the Spanish acronym). Despite this, the activities carried out by social leaders in their communities have been widely documented and shed light on to a pattern of victimization. For instance, annual reports by Somos Defensores show that social leaders get killed because of their opposition against the cultivation of coca crops, for abiding by voluntary coca substitution plans, defending the rights of people who seek land restitution, opposing to local political powers, reporting cases of corruption, opposing to the exploitation of natural resources by private companies and even for carrying out activities that promote well-being in their communities (Defensores, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019). In most cases, the intellectual authors of the murders are not identified, thus remaining free and uncontested.

This qualitative evidence shows that aggressions on social leaders take place in a context of disputes between two parties -civil society (represented by a social leader) and criminal groups[7]- over a specific issue, may it be drugs, land, political power, natural resources, etc. Ultimately, these murders are a form of repression against civil society by criminal groups, to impose their economic or political interests. This idea has been discussed in the literature on civilian selective targeting which has shown how the killings of civilians are often used as a tactic of criminal groups to create fear over communities and consolidate control over contested territories (Vargas, 2009, Kalyvas, 2006).

[7]These can either be criminal groups, political elites, private companies, etc. For simplicity I will just refer to these as "criminal groups" from now on

3 Data

3.1 Data on violence against social leaders

Collecting data on violence against social leaders can be challenging due to systematic underreporting (Ball et al., 2018), the different definitions of what a social leader is, and the various possible ways of collecting information. This makes the number of reported cases vary depending on the organization that collects the data. Although the Attorney General's Office has official data on the killings of social leaders, there are reasons to take their data with caution as the government has discredited the issue multiple times. For instance, in 2017 the Secretary of Defense stated that *"the vast majority of the murders of social leaders in the regions are the result of conflicts from land boundaries, an issue of skirts*[8]*, and fights for illicit income."* (Espectador, 2017). Therefore, I will use two different data sources collected by independent NGOs to lessen measurement error and to show that results are not dependent on the reported cases from a particular organization.

The data I use on killings and attempts to kill social leaders comes from Somos Defensores[9], a Colombian human rights NGO dedicated to the protection of social leaders. They administer the SIADDHH, an information system that documents, investigates, and systematizes cases of aggressions against social leaders. More than 500 national organizations report information to this system, which later analyzes and compiles it into annual reports. They consider a social leader to be a person who defends human rights and who protects the interests of social groups and communities affected by violence in Colombia. They record information about different types of aggression such as threats, disappearances, arrests, prosecutions, information theft, attacks, and murder. Given the specificity with which aggressions are reported, I assume that attacks are all attempts to kill that did not succeed[10] and not threats, since a threat would have been classified as such. From now on I will use the terms

[8] This is a way of referring to conflicts over personal relationships and love affairs.

[9] Their website is https://somosdefensores.org/.

[10] Although unlikely and not what is found in qualitative evidence, there is a possibility that attacks were just meant to hurt the social leader and not to kill him/her.

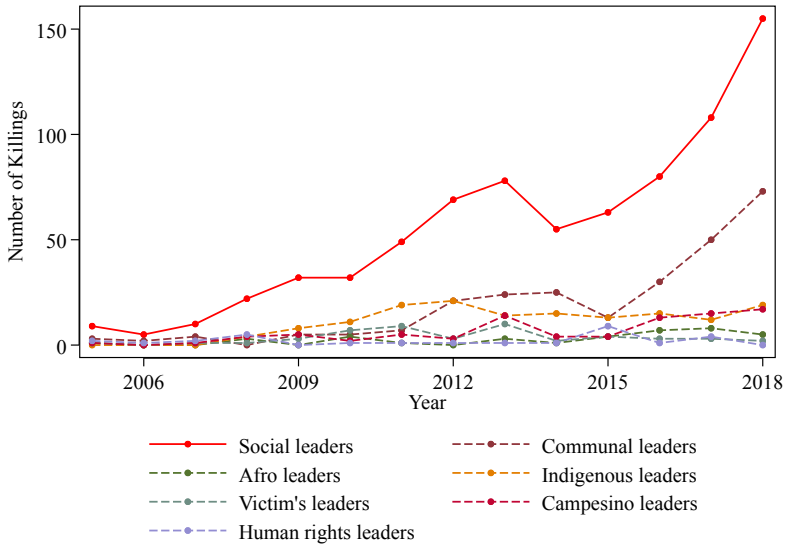
"attack" and "attempts to kill" interchangeably.

Figure 1 presents the total number of killings of social leaders and killings by type of leader from 2005 to 2018. The figure shows a substantial increase in killings of social leaders since 2014, the year in which a ceasefire was established with the FARC. This has been shown to explain the recent increase in killings as the departure of FARC from their territories caused territorial control disputes between other armed groups (Prem et al., 2019). The graph also shows how most of the variation is driven by killings of communal, indigenous and *campesino*[11] leaders, which are the social leaders who have the most influence in the territorial administration at the local level. This provides evidence that the effects I find take place through the deterioration of the collective action capacity since most of the social leaders who are murdered are precisely the ones who have authority and influence to mobilize people in their communities. Figure 2 shows the contrast on the evolution of killings and attacks for the years with available data for the attacks. The graph indicates that contrary to the increase in killings, attacks have shown a steady pattern over time. In the empirical exercises, I will use this time interval -the periods from 2012 to 2018- to keep the same sample for all treatments. Finally, Figure A3 in the appendix presents the spatial distribution of killings and attacks in Colombia and shows how violence is uniformly distributed throughout the whole country, regardless of its type.

For robustness, I use a second data source that comes from the Institute of Studies for Development and Peace -INDEPAZ[12]-, which is a Colombian NGO that works for peace. Their data registration is carried out with direct information from social organizations throughout Colombia, which informs on aggressions against social leaders. Figure A2 in the appendix shows a comparison of the killings for the two data sources.

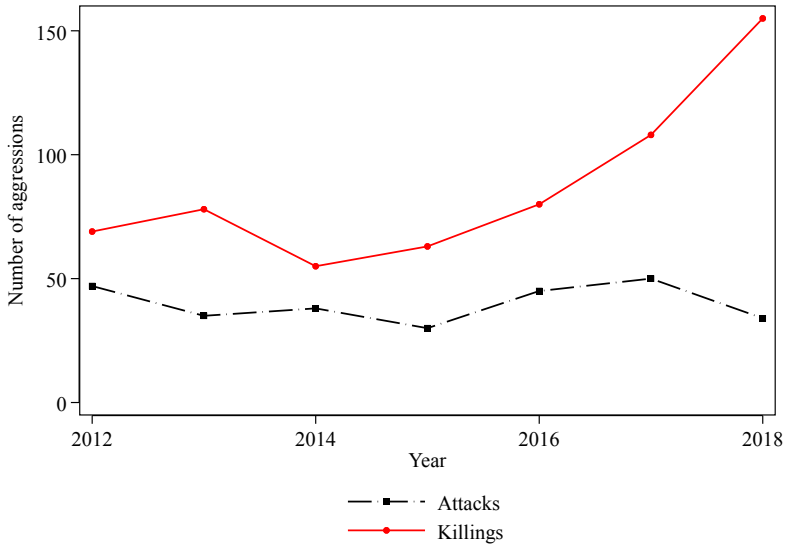
[11] A campesino is a farmer or peasant.
[12] Their website is http://www.indepaz.org.co/

Figure 1: Total Killings of social leaders and killings by type of leader



Note: Dashed lines correspond to the different types of social leaders killed that make up the total, depicted in the red solid line. **Source:** Somos Defensores

Figure 2: Killings and attacks on social leaders



Source: Somos Defensores

3.2 Outcome data

The outcomes examined in this study are hectares of coca cultivated and requests for land restitution, which are variables related to the disputes between social leaders and the groups that persecute them[13]. The hectares of coca are measured by the Colombian Drug information System, SIDCO, using satellite images[14]. Land restitution is a process of reparation from the Victim's Law under which victims have the right to get their property returned to them if it was dispossessed or abandoned due to the armed conflict. This process is carried out by the Land Restitution Unit (URT, for its Spanish acronym). The requests variable, therefore, measures the number of land restitution processes being solicited to the URT[15]. Further information on these variables is reported in Table A1 in the appendix. Table A2 in the appendix shows some descriptive statistics of the main variables of the study.

Figure 3 displays time series for these outcomes. Figure 3a shows a considerable increase in coca cultivation right after 2014. This has been associated with the withdrawal of FARC from their terrotiries, allowing new criminal groups to seize their market share in the coca business, but also with the announcement made by the government about paid crop substitution in the future (Mejía et al., 2019). Figure 3b shows a negative trend in land restitution requests after 2013, two years after the start of the Victim's Law. According to Somos Defensores, the increase in killings during these years came mostly from "anti-restitution armies" created by actors who opposed the Victim's Law (Defensores, 2013).

Finally, Figure 4 shows the behavior of the outcome variables in municipalities that had at least one killing of a social leader in the sample period and in municipalities that did not. Figure 4a shows that before 2014, the two groups had similar trends in the number of

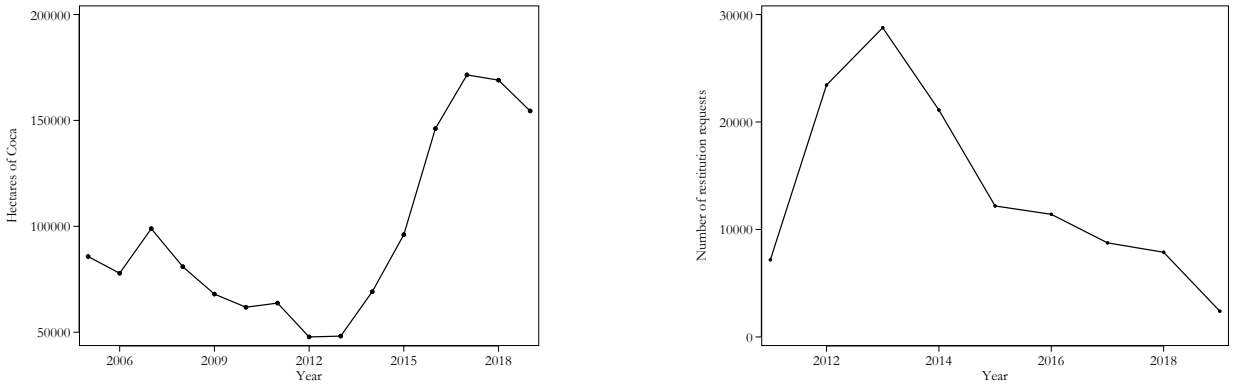
[13]Other outcomes such as corruption and electoral competition were considered for this study, nevertheless, these were not included because of the lack of annual data for local elections and because the corruption variables lacked clarity of interpretation, as it is not clear that when corruption reports decrease, it is because there is less corruption or because corruption is being hidden more effectively.

[14]SIMCI's information represent coca hectares towards the end of each calendar year. This could explain why some effects take some time to show since a killing towards the end of the year is not given the same time to show an effect as killings at the beginning of the year.

[15]The law has different stages such as a request stage, inscription stage, and judicial stage. The first one is the most relevant for this study as violence can deter people from requesting land restitution, but it is not so clear how violence would affect the inscription stage or the judicial stage.

hectares of coca, yet after 2014 the group with killings had a dramatic increase that did not take place in the other group, suggesting an effect of killings on coca cultivation. Panel 4b shows that the average land restitution requests are larger in the municipalities with killings, and report more pronounced changes over time.

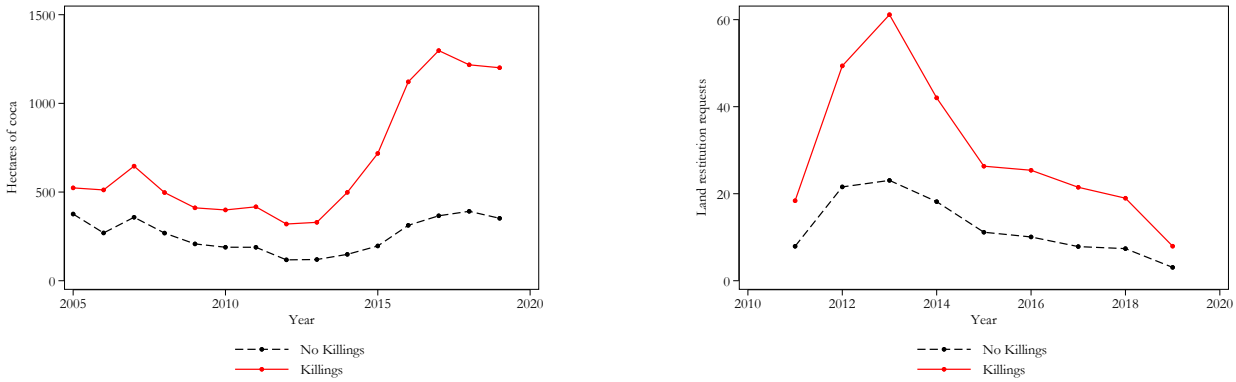
Figure 3: Outcome Variables



(a) Hectares of coca **(b) Land restitution requests**

Note: The figure shows the total for each year. **Source:** (a.) UNODC - Colombian Drug Information System, SIDCO (b.) Land Restitution Unit.

Figure 4: Outcome Variables by group



(a) Hectares of coca **(b) Land restitution requests**

Note: Red solid line includes municipalities that had at least one killing of social leaders during the sample period and the black dotted line includes municipalities that did not. Averages are taken considering only municipalities with positive values of the outcome variable. **Source:** (a.) UNODC - Colombian Drug Information System, SIDCO (b.) Land Restitution Unit.

3.3 Additional variables

Additional variables for each municipality come from the Municipal Panel from CEDE, Universidad de Los Andes. I also use the Violent Presence of Armed Actor (ViPAA) dataset from Osorio et al. (2019). This dataset includes information on violent events for government and non-government actors based on Noche y Niebla's narratives. The final dataset I use is a yearly panel data at the municipality level, from 2012 to 2018, which are the years for which I have both information on killings and attempts to kill.

4 Theoretical framework and methodology

4.1 Theory of change

The way I model the causal chain is depicted in Figure 5. I theorize that violence against social leaders depreciates collective action capacity and that because of that, there is a worsening of the outcomes.

Figure 5: Causal Chain

$\uparrow$ Violence on Social Leaders $\Longrightarrow\downarrow$ Colective Action Capacity $\Longrightarrow$ Worsening of the outcomes

Violence on social leaders can reduce collective action capacity because of three main reasons: first, because it eliminates the person with the most relevant leadership role in the community who initializes and sustains collective action (Lobo et al., 2016). Second, because the violence entails fear and intimidation towards the rest of the population (Ávila, 2020), which in turn creates collective action problems in confronting combatants (Kaplan, 2017). Third, because usually after the killing of a social leader the persecution towards the community does not stop, making it hard for new cases of leadership to arise. That is, violence usually only stops when criminal groups end up breaking the communities and leave them without a say on what happens in their territory. This last point is very clearly stated

by an investigator from Somos Defensores and Jesús Gómez, president of the Association of Community Action Boards, Asojuntas, in Arauquita, municipality of Arauca, where eight leaders were assassinated from 2012 to 2017:

"Even if the children of the leaders are persecuted, do you think that the vice president, who is the next person on the list, is going to take over? The board is left without a coordinator, without a leader. There is a wound in the family. The impact on the community remains."

"We made a report last year in which we documented what was happening, what the impacts were on the territories. We were surprised to see that more than 60% of the families of a leader are threatened again after they kill him. It is not the case that they kill the leader and the problem is over. They kill the leader and then come back and threaten people again. They harass the organizations that the leader worked for, many of which disintegrate. Obviously, the other leaders also cower. They kill a leader and the process breaks down."

"The family is stigmatized by the community itself, indifference towards the destruction of the social fabric is generated, to such a point that the family has to be displaced. Families end up with nervous problems." (Connectas, 2017).

Finally, the depreciation of the collective action capacity of civil society leads to the worsening of the outcomes because a community that is not collectively organized and that has no bargaining power can not oppose criminal groups (Arjona, 2016, Kaplan, 2017). Therefore, these groups end up imposing the cultivation of coca or keep off the land restitution processes from happening.

An example that positively manifests the importance of collective action in this context is Lobo and Vélez (2020), who study how Afro-Colombian collective territories with a high community organization and leadership were able to stop the expansion of illicit crops by enabling different forms of resistance. On the contrary, there is the example of Mario Manuel Castaño Bravo, one of the main leaders of the process of restitution in the Community Council of La Larga, Tumaradó. He was killed on November 26, 2017, shot dead in front of his wife, his children, and grandchildren. After his death, the communities where he belonged lost the

person recognized for speaking out against injustices, for denouncing the dispossessors, and for mobilizing the population to continue seeking land restitution.

4.2 Theory of violence

To model the different types of violence, I differentiate between the effect of trying to kill a social leader and not accomplishing it, from the effect of the actual killing. The attempt to kill the leader will affect the collective action capacity of the community (and thus, the outcomes) through an intimidation channel that is related to the fear caused by the attempt to kill, discouraging any future opposition against the criminal group. The killing of the social leader will depreciate collective action capacity both through an intimidation channel on the community as well as through an incapacitation channel since the leader will no longer exercise his/her activities. This idea is depicted in Figure 6, in which the effect of an attack is merely the size of the intimidation both on the community and the leader (A'), while the effect of a killing is composed by the effect of the intimidation on the community (A) and the incapacitation of the leader (B)[16].

4.3 Empirical strategy

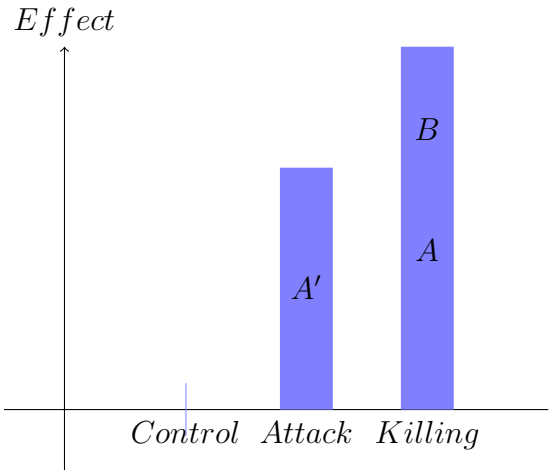
4.3.1 Event Study Approach

I use two different methodologies to estimate the effects of violence against social leaders[17]. First, I use an event study approach that allows me to estimate the dynamic effects relative to the first unexpected killing of a social leader or attempt to kill -the event-, by comparing treated municipalities to the ones not yet treated and to others not treated over the sample

[16] I make no assumptions as to whether the intimidation caused by an attempt to kill is equal, greater or less than the intimidation caused by an actual killing.

[17] Empirically studying the effects of killings can be challenging due to endogeneity issues. For instance, Marín (2020) studies how the implementation of the PNIS -which provided incentives for the substitution of coca crops- caused an increase in killings of social leaders. This opens up the possibility that my outcomes eventually affect back violence on social leaders. Despite this, rather than a simultaneity issue, I read those instances as two parts of a larger story, since the PNIS increased killings of social leaders when they substituted coca, and when they are killed, the cultivation of coca increases back again.

Figure 6: Effects of different treatments



Note: This figure represents the effects of two treatments; attacks and killings. It shows that the effect of attacks can be though through the channel of intimidation (A'), while killings have an effect through a different kind of intimidation (A) and the incapacitation of the social leader (B).

period (2012-2018). This allows me to causally identify the total effects of violence: the intimidation effect of attempts to kill (A', in Figure 6), and the intimidation effect plus the incapacitation effect of the killing (A + B, in Figure 6).

Studying the first killing is relevant as it marks the eruption of violence waves against social leaders. For instance, Figure A5 shows that after the first unexpected killing, the number of killings each period is statistically significant and increases over time. Furthermore, the average number of killings that take place after the first unexpected killing in all municipalities is 1.29, which shows that after the first event, violence against social leaders continues to happen.

I use the first unexpected killing in a municipality to mitigate concerns that the killings I observe are a result of endogenous dynamics of violence from the past. Therefore, using the first unexpected killing makes the event harder to be anticipated and plausibly more "exogenous"[18]. I define an unexpected killing as the first killing that happened in a municipality where no other killing of a social leader had taken place for a certain amount of years before

[18] Also, by using the variation from the timing of the killings I prevent the interpretation issues of studies that rely on the timing of the ceasefire or the peace treaty since other things were simultaneously happening around those times.

the start of the sample period, that is, a municipality in which violence against social leaders has not yet started.

For example, if I consider 2 years in the pre-period, only the municipalities with no reported killings in the 2 years before the start of the sample period would be used. As this implies an ad-hoc decision of what interval of years to check in the pre-period, in section 6 I present robustness using all possible intervals and show that the results are relatively the same using alternative definitions of the time interval considered. I also show that the results are robust to defining an unexpected killing as periods with no killings *or attacks* to social leaders.

Figure A6 displays the number of municipalities that report at least one killing of a social leader for different time intervals in the pre-period. Based on this figure, I choose to use 2 years before the start of the sample period since the change in the number of municipalities from 2 to 3 years is the highest, which would imply losing 71 municipalities for the analysis. In other words, I will check if a municipality had a killing of a social leader during 2 years before the start of the sample to establish whether the municipality had a period of relative peace in terms of killings of social leaders, and therefore to consider whether its first killing is unexpected or not. All the results have the same restriction. In Appendix Figure A4 I show that other kinds of general violence in the municipality (homicides, displacements, or kidnappings) do not predict the first unexpected killing, giving some reassurance about them being unexpected.

For identification, I rely on the parallel-trends assumption, under which the treated municipalities would have evolved parallel to the control municipalities in absence of the treatment. I provide suggestive evidence that the assumption holds in the event studies. It is also important that there is no anticipation of the violent event. I try to alleviate this concern using the first unexpected killing, nevertheless, the assumption is hard to sustain in this context given that in many cases the social leaders receive threats before being killed or attacked. Therefore, in section 6 I use the Callaway and Sant'Anna (2020)'s estimation to allow for

certain years of anticipation and heterogenous effects. I show that the estimations using that methodology tell the same story as the rest of my results. My baseline empirical strategy is:

$$Y_{mdt} = \delta_m + \gamma_{dt} + \sum_{r=-T}^{-2} \tau_r D^r_{mdt} + \sum_{r=0}^{T} \tau_r D^r_{mdt} + \sum_{z \subseteq X_{md}} \pi'(z \times \alpha_t) + \epsilon_{mdt} \quad (1)$$

where Y_{mdt} is the outcome variable at the municipality m, department d, at year t. δ_m are municipality fixed effects, γ_{dt} are department by year fixed effects, and X_m is a vector of municipality characteristics in the pre-period that I interact with time fixed effects, α_t, to allow for differential non-linear evolution of these through time. D^r_{mdt} is a dummy variable equal to 1 when the unit m is r periods relative to the first unexpected killing (attempt to kill). Therefore, the τ_r coefficients capture the effects of being r periods after or before the treatment relative to untreated municipalities, that is, A+B (A').

Given that municipalities in which aggressions against social leaders happen are different from the ones where they don't, I control for pre-period variables that characterize how likely are the municipalities to have social leaders (rural index, judicial inefficiency, ethnic minorities), variables that capture the prevalence of armed actors which could have had different violence dynamics towards social leaders, and other municipal characteristics that could correlate with the outcomes. The vector of pre-period controls includes: $\ln(\text{population})_{md}$, rural index_{md}, $\text{municipality altitude}_{md}$, $\text{municipality area}_{md}$, $\text{distance to the department's capital}_{md}$, $\text{distance to Bogotá}_{md}$, $\text{guerrilla violent events}_{md}$, $\text{paramilitary violent events}_{md}$, $\text{judicial inefficiency}_{md}$ and $\text{hectares of ethnic minorities}_{md}$. I restrict the sample to municipalities with a population of less than 200,000 inhabitants[19] to leave out the big cities in which the dynamics of social leaders are considerably different compared to rural and remote areas. The results are robust to the inclusion of big cities in the sample.

[19]The restriction leaves out 26 municipalities out of 1122, which are 182 observations.

4.3.2 Variation from attempts to kill

To isolate and causally identify the incapacitation effect of killings (B, in Figure 6), I exploit the fact that anecdotical evidence suggests that failed attempts to kill social leaders happen at random[20]. For instance, an explosive may have been noticed before going off, or the leader might have survived despite having been shot at multiple times. Ultimately, there is randomness in a situation in which a criminal is attempting to end some else's life and yet the victim survives the attack. Some examples of these kind of situations are shown in Figure A4 in the appendix. Therefore, by comparing municipalities with and without killings, both in which a similar number of attempts to kill took place, the number of killings becomes a plausibly exogenous variable that captures the effect of killing the social leader. Notice that the counterfactual in this case is a municipality where an attempt to kill took place, but the murder was not successful. Thus, to exploit this plausibly exogenous variation coming from the fact that conditional on having had an attempt to kill, getting killed or not is almost as a lottery[21], my second empirical approach is:

$$Y_{mdt} = \delta_m + \gamma_{dt} + \phi Killings_{mdt} + \pi Attacks_{mdt} + \sum_{z \subseteq X_{md}} \pi'(z \times \alpha_t) + \epsilon_{mdt} \tag{2}$$

where everything is as in equation 1, and $Killings_{mdt}$ is the number of social leaders killed at municipality m, department d, at time t. $Attacks_{mdt}$ is defined in the same way for attempts to kill social leaders. In this specification, $Killings_{mdt}$ is a plausibly exogenous variable conditional on $Attacks_{mdt}$, so ϕ captures the causal effect of the killing, conditional on having been attacked (that is, B in Figure 6), which is the incapacitation effect of the killing. Recall that killings are not a subset of the attacks, as attacks are failed attempts to kill.

[20] This type idea goes in the same line as the identification in Jones and Olken (2009), in which they exploit the inherent randomness in the success or failure of assassination attempts to identify the effects of assassination of autocrats.

[21] In potential outcomes notation, this means that $Y^1_{mdt}, Y^0_{mdt} \perp \text{Killings}_{mdt} | \text{Attempts to kill}_{mdt}$, with Y^1_{mdt} being the potential outcome in the case where there is treatment and Y^0_{mdt} the potential outcome in the case where there is not.

This methodology relies on the assumption that conditional on being attacked, getting killed or not is as good as random, which implies that treated and control municipalities are on average balanced in observable and non-observable characteristics conditional on the number of attacks. This assumption would not hold if municipalities in which the attacks are successful have more effective hitmen or larger and more organized criminal groups, relative to the municipalities where attacks don't end up in murder. To assess this possibility I check on balance for a set of characteristics between these groups.

5 Results

5.1 Event Study Results

The event study results are presented in Figures 7-10. Figure 7 shows the effects on coca cultivation relative to the first unexpected killing of a social leader. There are no immediate effects after the event but the coefficients become statistically significant after the third year[22]. This implies that the effects arise after some years after the beginning of the violence against social leaders since a single killing might not affect much immediately, but as more killings take place the communities start losing their social fabric, their capacity to collectively resist, and their leverage against criminal groups.

The coefficients are increasing over time which means that the effect gets larger after each year and when significant, they amount for an increase of at least 0.27 standard deviations (that is, 179 hectares of coca over a standard deviation of 658, 179/658). Turning to the pre-treatment effects, none of the coefficients are statistically significant, which provides evidence that the parallel-trends assumption might hold in this context. Furthermore, the F statistic for the joint significance of all anticipatory coefficients does not reject the null that they are jointly equal to zero. Despite this, it is hard to completely rule out the possibility that there

[22] An important caveat is that, given that I also observe killings that happen for reasons unrelated to my outcomes, and given that there are not that many municipalities with killings, noise is introduced to the estimates. This could explain the large confidence intervals.

is a trend in the pre-period.

Figure 8 shows the event study for the outcome of land restitution requests. The effects are significant from the second year after the first unexpected killing and get bigger over time. They are also large in magnitude; at the very least, show a reduction of 0.29 standard deviations (11/39) in land restitution requests. There is also evidence that the parallel-trends assumption hold in this case, as non of the anticipatory effects are significant at standard levels and the F test for all lags does not reject the null.

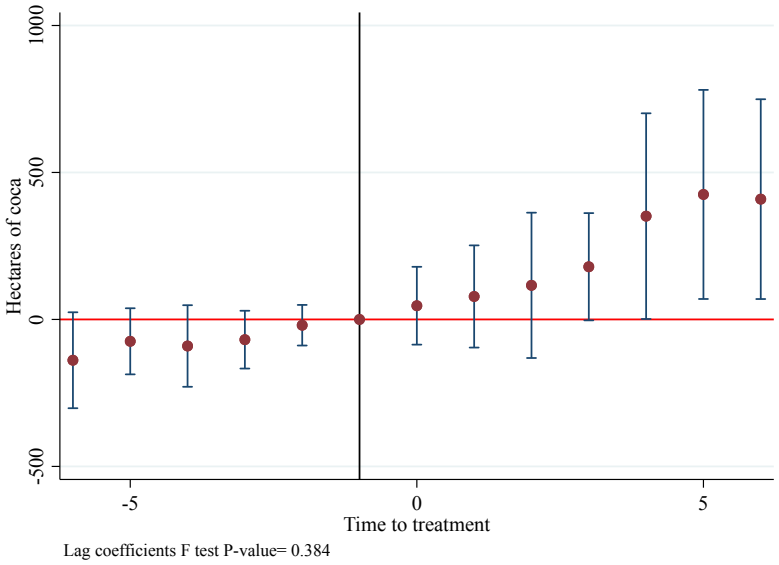
Figures A7 and A8 in the appendix show robustness of these results using different pre-period intervals to define an unexpected killing. No matter the interval chosen the results remain similar. Additionally, Figure A9 in the appendix shows that the results hold when defining an unexpected killing considering both killings *and attacks* on social leaders during the 2 years of the pre period.

Table 1 shows the results for the static version of the Event Study and the effects of accumulated killings over time. Even-number columns present the results including the set of control variables. All the coefficients with controls are smaller in size than the ones without them, so I will focus on the former as they are more conservative and restrictive estimations.

Panel A shows the estimation for a dummy variable that is equal to one after the first unexpected killing. The effects in columns 2 and 4 indicates that there is no statistically significant effect at the 5% of the first unexpected killing (extensive margin), consistent with the hypothesis that the effects take place when further violence is exerted on other social leaders. However, the magnitudes are not small; 0.12 standard deviations (89/700) for coca hectares and -0.16 standard deviations (-6.3/39) for land restitution requests.

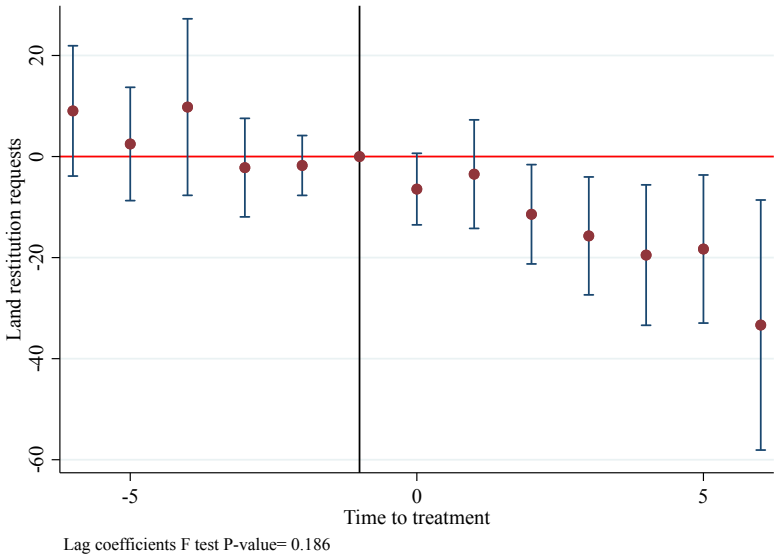
On the other hand, Panel B shows the effect of the intensity of the treatment, that is, of the accumulated killings over time. The coefficient in column 2 indicates that an additional killing of a social leader increases coca hectares 0.46 standard deviations (320/700). Column 4 indicates that an additional killing of a social leader reduces land restitution requests by 0.20 standard deviations (8/39). Both statistically significant at the 5% and 1%, respectively.

Figure 7: Effect relative to the first killing: Hectares of coca



Note: Regressions estimated with municipality fixed effects, department by year fixed effects, and time-invariant controls in the pre period interacted with year fixed effects. 95% confidence intervals reported. Time -1 relative to the first killing is the omitted category. Standard errors clustered at the municipality level. Sample restricted to municipalities that did not have any killing of a social leader for at least 2 years before the beginning of the sample period.

Figure 8: Effect relative to the first killing: Land Restitution Requests



Note: Regressions estimated with municipality fixed effects, department by year fixed effects, and time-invariant controls in the pre period interacted with year fixed effects. 95% confidence intervals reported. Time -1 relative to the first killing is the omitted category. Standard errors clustered at the municipality level. Sample restricted to municipalities that did not have any killing of a social leader for at least 2 years before the beginning of the sample period.

These results show that there is an effect of the killings of social leaders in the intensive margin, that is, with each additional killing.

Table 1: Effect of first killing and accumulated killings

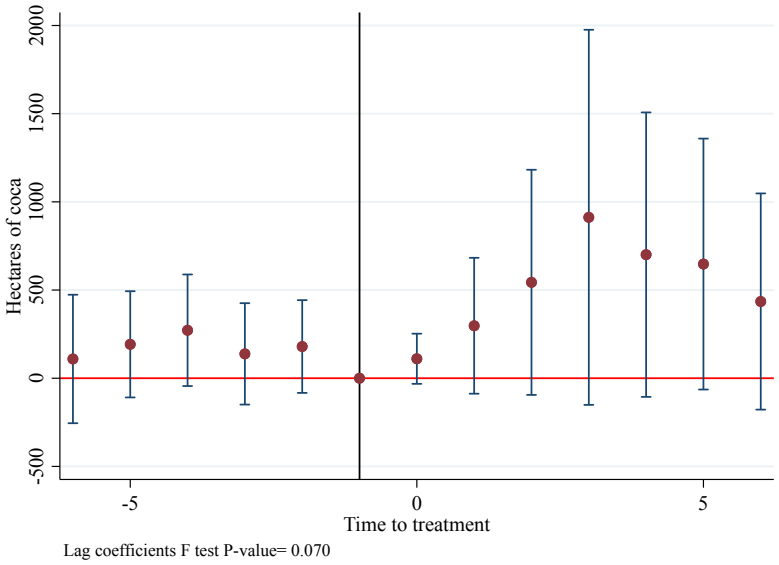
	Hectares Coca	Hectares Coca	Land Rest. Requests	Land Rest. Requests
	(1)	(2)	(3)	(4)
	Panel A: Extensive margin			
After first killing=1	167.7*	89.1	-8.9***	-6.3*
	(91.7)	(99.6)	(3.4)	(3.7)
	Panel B: Intensive margin			
Accumulated killings	316.4***	320.3***	-8.7***	-7.5***
	(118.4)	(123.9)	(2.2)	(2.2)
Muni FE	✓	✓	✓	✓
Depto X Year FE	✓	✓	✓	✓
Controls		✓		✓
Dep. Var. Mean	83.0	90.4	12.7	12.3
Dep. Var. SD	656.6	699.9	39.1	38.5
Obs	7,357	6,398	7,357	6,398

Clustered standard errors at the municipality level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Time invariant controls in the pre period interacted with year fixed effects: rural index, log(population), municipality area, municipality altitude, distance to the department's capital, distance to Bogotá, Guerrilla violent events, Paramilitary violent events, Judicial inefficiency, Ethnic Minorities Presence. The regressions are restricted to municipalities that did not have any killing of a social leader for at least 2 years before the beginning of the sample period.

Figure 9 shows the effects relative to the first unexpected attack of a social leader on coca cultivation. None of the coefficients are statistically significant at the 5% since they have large confidence intervals. This is so since there are approximately 200 attacks during the sample period, which translates into little power. Looking only at the point estimates, however, the effects are large and there is no evidence of a pre-trend, giving reassurance regarding the unbiasedness of the point estimates.

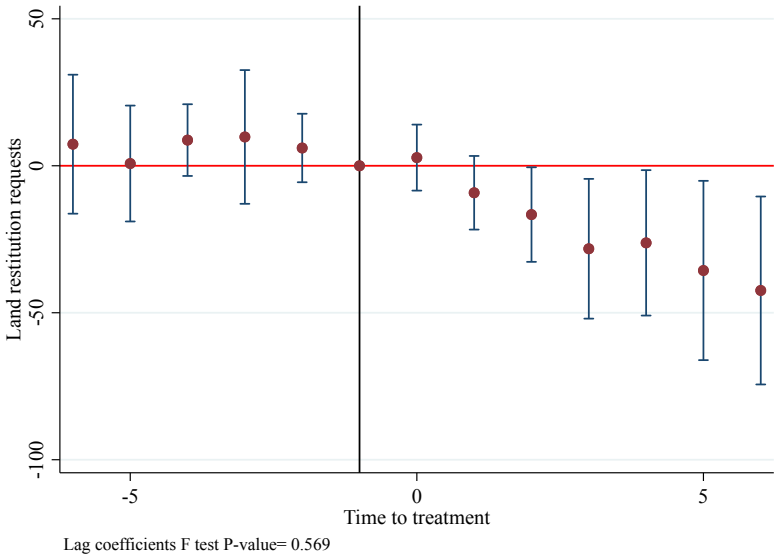
Figure 10 shows that there are statistically significant reductions of land restitution requests two years after the first unexpected attack, of at least 0.44 standard deviations (17/39). These point estimates tell a similar story relative to the ones estimated for killings and are larger in magnitude, thus implying that the intimidation caused by attacks has a considerable

Figure 9: Effect relative to the first attack: Hectares of coca



Note: Regressions estimated with municipality fixed effects, department by year fixed effects, and time-invariant controls in the pre period interacted with year fixed effects. 95% confidence intervals reported. Time -1 relative to the first attack is the omitted category. Standard errors clustered at the municipality level. Sample restricted to municipalities that did not have any killing of a social leader for at least 2 years before the beginning of the sample period.

Figure 10: Effect relative to the first attack: Land Restitution Requests



Note: Regressions estimated with municipality fixed effects, department by year fixed effects, and time-invariant controls in the pre period interacted with year fixed effects. 95% confidence intervals reported. Time -1 relative to the first attack is the omitted category. Standard errors clustered at the municipality level. Sample restricted to municipalities that did not have any killing of a social leader for at least 2 years before the beginning of the sample period.

role in reducing the collective action capacity. There is no evidence that there is a pre-trend for both results, which suggests that the attacks might be even harder to anticipate than killings.

Finally, Table 2 shows the static and cumulative estimations for the attacks treatment. Columns 2 and 4 in Panel A show no statistically significant effects of the first unexpected attack on coca cultivation and land restitution requests, yet the magnitudes are almost twice the size relative to the ones estimated for the killings. Finally, there are large and statistically significant effects of attacks on the intensive margin, shown in panel B. That is, with an additional attempt to kill a social leader, hectares of coca increase by 0.58 standard deviations (406/700), and land restitution requests are reduced by 0.41 standard deviations (16/39). I interpret this as evidence that the intimidation effect is considerable, and so communities would still be affected by attacks that do not necessarily end in the dead of the social leader.

5.2 Results - Variation from attempts to kill

To study the incapacitation effect of the killings, in my second methodology I assume that killings happen at random conditional on observing the attempts to kill. Anecdotical evidence from news suggests that when an attempt to kill does not succeed it happens for arbitrary reasons. For instance, Figure A4 in the appendix shows news headlines for cases in which, for example, a bomb was found before going off, a leader was shot several times but survived, or a case in which the leader got attacked but was not impacted by a bullet "by miracle". I argue that as in these examples, when leaders get attacked and survive it is so for random reasons. Therefore, equation 2 would yield causal estimates of the effects of killings conditional on attacks.

Table 3 shows the estimation using this variation. Columns 2 and 4 show results with control variables. I only interpret these as they are the most conservative ones and are slightly smaller compared to the ones without controls. Column 2 shows that an additional killing

Table 2: Effect of first attack and accumulated attacks

	Hectares Coca	Hectares Coca	Land Rest. Requests	Land Rest. Requests
	(1)	(2)	(3)	(4)
	Panel A: Extensive margin			
After first Attack=1	321.4	209.5	-18.2**	-11.5
	(205.8)	(167.8)	(8.3)	(7.5)
	Panel B: Intensive margin			
Accumulated attacks	369.7	406.4*	-17.0***	-15.7***
	(245.9)	(232.2)	(5.4)	(5.1)
Muni FE	✓	✓	✓	✓
Depto X Year FE	✓	✓	✓	✓
Controls		✓		✓
Dep. Var. Mean	83.0	90.4	12.7	12.3
Dep. Var. SD	656.6	699.9	39.1	38.5
Obs	7,357	6,398	7,357	6,398

Clustered standard errors at the municipality level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Time invariant controls in the pre period interacted with year fixed effects: rural index, log(population), municipality area, municipality altitude, distance to the department's capital, distance to Bogotá, Guerrilla violent events, Paramilitary violent events, Judicial inefficiency, Ethnic Minorities Presence. The regressions are restricted to municipalities that did not have any killing of a social leader for at least 2 years before the beginning of the sample period.

increases coca hectares by 0.28 standard deviations (202/721), and column 4 shows that it reduces land restitution requests by 0.11 standard deviations (4.3/39). Both estimates are statistically significant at the 10%. The direction and magnitud of these effects goes in line to the ones estimated with the event study, giving reassurance of the overall results. I do not interpret the effect of the attacks in this case as they serve the purpose of being what needs to be held constant.

To provide evidence of whether the variable is certainly exogenous, Table 4 checks the balance between municipalities with only attacks relative to municipalities where attacks and killings took place. If the killings conditional on the attacks were indeed as good as random I should not find differences in observables between those two groups.

The variable "UNP requests" is the number of protection requests made by social leaders

Table 3: Results - Killings conditional on attempts to kill

	Hectares Coca (1)	Hectares Coca (2)	Land Rest. Requests (3)	Land Rest. Requests (4)
Killings	215.3**	202.4*	-5.1**	-4.3*
	(101.5)	(116.0)	(2.4)	(2.4)
Attacks	128.9	130.9	2.8	1.7
	(154.0)	(155.3)	(4.0)	(4.0)
Muni FE	✓	✓	✓	✓
Depto X Year FE	✓	✓	✓	✓
Controls		✓		✓
Dep. Var. Mean	96.7	104.3	13.8	13.0
Dep. Var. SD	678.9	721.4	41.6	38.8
Obs	7,672	6,650	7,672	6,650

Clustered standard errors at the municipality level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Time invariant controls in the pre period interacted with year fixed effects: rural index, log(population), municipality area, municipality altitude, distance to the department's capital, distance to Bogotá, Guerrilla violent events, Paramilitary violent events, Judicial inefficiency, Ethnic Minorities Presence.

and answered by the UNP[23]. This variable is important as it captures the risk level of a municipality. For instance, if a municipality has several protection requests it is likely that the criminal groups in that area are more dangerous or more interested in threatening social leaders, which could mean that they might have different effectiveness rates in killing relative criminal groups from other places. If this was the case the identification would be less likely to hold.

The table shows that there are no statistically significant differences in this variable between the two types of municipalities. Furthermore, there are no differences in institutional variables such as judicial inefficiency, or in variables that relate to how rural a municipality is, its population, and other geographic characteristics. This gives some reassurance that it is unlikely that some places have more effective hitmen and thus that these places have some sort of selection bias.

[23]The National Protection Unit (UNP) is an entity attached to the Ministry of the Interior of Colombia, in charge of developing strategies for the analysis and evaluation of risks and threats, and implementing individual and/or collective protection measures of target populations.

Despite this, there are some statistically significant differences in the distance of that municipality to the department's capital and the number of violent events from the guerrilla. These are also large in magnitude as seen in column 4, and imply that the places where killings take place have are further away from the capital of the department and had more guerrilla presence in the past, relative to places where only attacks take place. To account for these differences, all of the estimations in the paper control for these characteristics (including the ones with no difference) by interacting them with year-fixed effects.

Table 4: Exogenous Groups Balance

	Attacks and killings	Attacks only	(1)-(2)	Magnitude SD	N
	(1)	(2)	(3)	(4)	(5)
UNP Requests	59.84	50.42	9.42	0.46	57
	(77.37)	(76.00)	(21.48)		
Rural Index	0.46	0.43	0.03	0.13	102
	(0.27)	(0.28)	(0.06)		
Ln Population	10.80	10.56	0.23	0.23	102
	(1.02)	(1.06)	(0.23)		
Muni area (1k kms)	4.24	1.22	3.02***	0.92	102
	(5.08)	(1.77)	(0.68)		
Distance to Cap	134.04	73.21	60.83***	1.02	102
	(64.28)	(51.08)	(12.00)		
Violence Guerrilla pre	22.00	8.50	13.50***	1.10	102
	(28.78)	(17.08)	(4.60)		
Violence Paras pre	25.23	18.42	6.82	0.33	102
	(44.21)	(43.89)	(9.56)		
Judicial Inefficiency	0.07	0.08	-0.01	-0.06	102
	(0.20)	(0.16)	(0.04)		
Distance to Bogotá	419.08	411.59	7.49	0.04	102
	(101.56)	(188.75)	(36.55)		
Altitude	462.10	740.53	-278.43*	-0.24	102
	(534.25)	(744.23)	(149.93)		
Land Ethnic Min.	40.38	20.54	19.84	0.07	97
	(81.38)	(99.40)	(21.78)		

Note: The "Attacks only" group are municipalities with attacks but no killings, while "attacks and killings" group are municipalities with attacks and killings. Municipality area is measured in 1000 kilometers and hectares of ethnic minorities in 1000 hectares.

6 Robustness

Table 5 shows the results of a placebo and some robustness checks. Panel A shows the effect of general homicides over the outcome variables. Finding an effect of this variable on the outcome variables would cast doubt over my results as it would imply that the effects are driven by a general situation of public order and security rather than by the violence against social leaders. Not only I do not find statistically significant estimates, but also the magnitude is close to cero and is considerably smaller relative to the treatment effects, which have a magnitude of over 100 hectares and -5 restitution requests, as opposed to -2 hectares and 0 land restitution requests for the general homicides. Panel B and C reproduce the same regressions in Table 1 including the homicides variable as a bad control. It is encouraging to see that the results hold and preserve their magnitude despite its inclusion. The event studies also hold using the bad control.

In Figure A10 I show my estimations using the whole sample available and preserving the same restrictions as in the main results. This sample goes from 2007-2018. For both outcomes, the results hold and are similar in magnitude. There is also no evidence of a pre-trend in either case. When I use the data from INDEPAZ (2016-2019), I also find a remarkably similar effect, shown in Figure A11. These two exercises give reassurance that my results are not driven by the sample period I used, from 2012 to 2018 (which was motivated by the data availability of the attacks, in order to use the same sample for all estimations), and that my results are not driven by particularities of the Somos Defensores data.

Given that my two outcome variables have a "hockey stick-like" distribution with a lot of zeros and rare high values, in Figure A12 I show the robustness of my results using the inverse hyperbolic sine transformation of the outcomes. This allows using a logarithmic transformation that is not undetermined at cero and without adding an arbitrary number to the variable. My results hold using this transformation which suggests that the units of the outcome variable are not driving the results.

Recent works have discussed the issues related to heterogeneous treatment effects and

Table 5: Placebo and robustness results

	Hectares Coca	Hectares Coca	Land Rest. Requests	Land Rest. Requests
	(1)	(2)	(3)	(4)
	Panel A: Placebo			
Homicides	-2.4	-2.2	0.1	-0.1
	(8.2)	(10.8)	(0.1)	(0.2)
	Panel B: Extensive margin with bad control			
After first killing=1	171.2**	91.4	-9.0***	-6.2*
	(86.6)	(91.5)	(3.4)	(3.7)
	Panel C: Intensive margin with bad control			
Accumulated killings	318.7***	322.5**	-8.8***	-7.5***
	(121.8)	(127.7)	(2.2)	(2.2)
Muni FE	✓	✓	✓	✓
Depto X Year FE	✓	✓	✓	✓
Homicide bad control	✓	✓	✓	✓
Controls		✓		✓
Dep. Var. Mean	83.00	90.40	12.70	12.30
Dep. Var. SD	656.6	699.9	39.1	38.5
Obs	7,357	6,398	7,357	6,398

Panel B and C include the homicides bad control. Clustered standard errors at the municipality level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Time invariant controls in the pre period interacted with year fixed effects: rural index, log(population), municipality area, municipality altitude, distance to the department's capital, distance to Bogotá, Guerrilla violent events, Paramilitary violent events, Judicial inefficiency, Ethnic Minorities Presence.

negative weights in Differences-in-differences (DiD) and/or event studies with variation in treatment timing when using Two-way Fixed Effects (Goodman-Bacon, 2018, De Chaisemartin and d'Haultfoeuille, 2020, Sun and Abraham, 2020). Callaway and Sant'Anna (2020) propose a procedure that bypasses the pitfalls highlighted in those papers by allowing for covariate-specific trends, relying on different types of parallel trends assumptions, and allowing some types of treatment anticipation behavior. This is achieved by estimating treatment effects by cohort-time and then using different aggregation schemes to estimate event-study-type estimands which allow for arbitrary treatment effect heterogeneity.

Using their methodology I estimate the treatment effects, which are presented in Figure A13. Since I considered unexpected killings as the ones that took place in municipalities

where no other killing happened for at least two years before the start of the sample period, I allow for two years of anticipation. I use the "not yet treated group" as the control group since these are more likely to follow a parallel path in absence of the treatment, although the results are alike when using the "never-treated" municipalities.

For the case of coca hectares, the results show no evidence of pre-trends or anticipatory effects, and the point estimates are large after the first unexpected killing, although not significant. It is worth noting that the magnitude of the effect is at least 173 coca hectares, that is, 0.26 standard deviations (173/658), remarkably similar to the main result. The fact that the point estimates are large in magnitude after the first killing/attack and how close to zero are the anticipatory coefficients suggests that the effects are imprecisely estimated as not all killings/attacks happened for reasons related to the outcomes. This is to be expected given that this methodology drops observations that do not have a not-yet-treated period. The results for land restitution requests are noisier but Panel D suggests a large reduction of requests after the first unexpected attack.

These estimations are in line with my main results and give reassurance that even after accounting for anticipation of the event and heterogenous effects the results do not change considerably. These estimations also require less demanding assumptions for identification, as one needs to assume conditional parallel trends based on a "never-treated" group or a "not-yet-treated" group and a limited treatment anticipation.

Finally, given the potential arbitrariness of how I define the treatment and the potential anticipatory effects in some results, I also provide robustness exploiting the variation in timing produced by the cease-fire with FARC in 2014 in a DiD approach. This approach is intended to exploit the variation shown in Figure 4, which caused an increase in the killings of social leaders. For this, I define the post-treatment period after 2014, when the cease-fire took place, and define a treatment variable equal to one for municipalities that had a killing of a social leader before the cease-fire.

The results presented in figures A17 in the Appendix show that there is a positive effect

on coca hectares and a negative effect on land restitution requests, although smaller in magnitude for the case of coca and of similar magnitude for the case of requests. For neither event study, there seems to be a pretend. This provides further evidence of the effects of killings on the outcomes using a different source of variation.

7 Mechanisms

I now explore the potential mechanisms behind these results. First, I estimate the effects relative to the first killing of different types of leaders. In my data there are 7 types of social leaders: communal, *campesino*, afro, indigenous, victim's, human rights, and others[24]. Their distribution is presented in Table A3 in the Appendix. Communal leaders are the most killed (38%), follow by "others", indigenous, *campesino* and afro leaders. This means that more than 76% of the killed leaders were people in charge of the organization of their communities.

Figure A14 in the Appendix shows the effect of the first unexpected killing of a social leader for communal, *campesino*, afro and indigenous leaders, as these are the most important ones in terms of coordinating and mobilizing people. The subfigures show a positive medium-term effect for each of these types of leaders, although there is heterogeneity: for communal leaders the effect becomes statistically significant the same year of the event and is very large. This is consistent with the fact that most of the communal leaders are the ones who have been trying to substitute coca crops according to Somos Defensores. For indigenous and *campesino* leaders the effect becomes large after the second or third year, and for the case of afro leaders, the effect is huge in magnitude; the smallest is more than 1 standard deviation (748 hectares of coca), which shows that afro people have been greatly affected by the consequences of violence against their social leaders.

For the case of restitution requests, shown in Figure A15, all subfigures show negative effects over time which are especially large for afro and *campesino* leaders. Finally, there

[24]This categorization is not exhaustive, as a social leader can be in many categories simultaneously, yet for this one, each leader is only in one of them.

is no clear effect on coca or substitution requests for the case of "other" leaders, and both victims and human rights leaders are not considered since both represent less than 1% of the sample. Taken together, this provides suggestive evidence that the effect of the violence possible passes through harming the leadership and thus collective action of the communities.

Ideally, one would want to evaluate the effect of violence directly on collective action however this is not possible due to data restrictions. Despite this, Ostrom and Ahn (2009) identify 3 forms of social capital that help understand collective action: trust, networks, and rules (formal or informal), so by studying the effect of violence against social leaders on trust in institutions I can provide suggestive evidence of the direction of the effect on collective action. Therefore, as an additional test, I use data from Latinobarómetro which surveys people on their trust in institutions and estimate the treatment effects on this variable. Figure A16 in the appendix show that after the first unexpected killing the trust in institutions is reduced almost immediately, by at least 0.9 standard deviations. The effect also decreases over time. This provides further suggestive evidence that the effect happens through a deterioration of collective action. An important caveat is that this exercise should be taken with a grain of salt as the data of Latinobarómetro is not representative of the whole country and only some municipalities are surveyed[25].

8 Conclusions

Violence against social leaders is a topic that has relevance in and of itself and should be addressed with the greatest urgency and seriousness by the authorities. I have provided evidence that the start of violence against social leaders has medium-term effects of considerable size increasing coca cultivation and reducing land restitution requests. The effects are large at the intensive margin, that is, as there are more and more killings. This is consistent with the idea that with the accumulation of dead social leaders, collective action capacity is depreciated, causing a worsening of the outcomes.

[25] 34 municipalitites in 20 departments.

The public policy implication of this result is that the killings of social leaders do not only greatly affect the communities where they happen but also have a considerable impact on a broader scale. This supply further reasons why protecting the lives of social leaders should be of the highest priority of the government. Providing security to social leaders that goes beyond material protection (bodyguards, bulletproof vests, etc., which have proven to be insufficient), that focuses on judicial security, communal protection, and the strengthening of the communities, could be a better way to look after the lives of people who play a major role in the organization of the local level, while also addressing the problem of coca cultivation and advancing the efforts upon land inequality.

I have also shown that attempts to kill social leaders have a considerable effect on increasing coca cultivation and reducing land restitution requests and that the effect is higher as more of them take place. This implies that intimidation towards communities also plays a major role in deterring communities from opposing criminal groups. Therefore, the protection of social leaders and the metrics used to assess its effectiveness should not be focused only on the numbers of killings but rather on the integral security and the strengthening of the communities. This final point is crucial for them to be able to protect themselves and their territory.

References

Annan, J., Blattman, C., Mazurana, D., and Carlson, K. (2011). Civil war, reintegration, and gender in northern uganda. *Journal of conflict resolution*, 55(6):877–908.

Arias, M. A., Ibáñez, A. M., and Zambrano, A. (2019). Agricultural production amid conflict: Separating the effects of conflict into shocks and uncertainty. *World Development*, 119:165–184.

Arjona, A. (2016). *Rebelocracy*. Cambridge University Press.

Ball, P., Rodríguez, C., and Rozo, V. (2018). Asesinatos de líderes sociales en colombia en 2016–2017: una estimación del universo. *Editorial Dejusticia*, 8(2):184–204.

Bateson, R. (2012). Crime victimization and political participation. *American Political Science Review*, pages 570–587.

Bauer, M., Blattman, C., Chytilová, J., Henrich, J., Miguel, E., and Mitts, T. (2016). Can war foster cooperation? *Journal of Economic Perspectives*, 30(3):249–74.

Bellows, J. and Miguel, E. (2009). War and local collective action in sierra leone. *Journal of public Economics*, 93(11-12):1144–1157.

Besley, T. and Reynal-Querol, M. (2014). The legacy of historical conflict: Evidence from africa. *American Political Science Review*, pages 319–336.

Callaway, B. and Sant'Anna, P. H. (2020). Difference-in-differences with multiple time periods. *Journal of Econometrics*.

Cassar, A., Grosjean, P., and Whitt, S. (2013). Legacies of violence: trust and market development. *Journal of Economic Growth*, 18(3):285–318.

Connectas, E. P. . (2017). Con el asesinato de líderes sociales, regresa el temor. *Retrieved from: https://www.connectas.org/especiales/lideres-en-via-de-extincion/con-el-asesinato-de-lideres-sociales-regresa-el-temor.php*.

De-Arteaga, M. and Boecking, B. (2019). Killings of social leaders in the colombian post-conflict: Data analysis for investigative journalism. *arXiv preprint arXiv:1906.08206*.

De Chaisemartin, C. and d'Haultfoeuille, X. (2020). Two-way fixed effects estimators with heterogeneous treatment effects. *American Economic Review*, 110(9):2964–96.

Defenders, F. L. (2017). Informe anual sobre defensores/as de derechos humanos en riesgo en 2017. *Front Line, Fundacio n Internacional para la Proteccio n de los/as Defensores/as de Derechos Humanos*.

Defensores, P. S. (2012). El efecto placebo. *Informe Anual - Sistema de Información sobre Agresiones contra Defensores y Defensoras de Derechos Humanos en Colombia - SIADDHH*.

Defensores, P. S. (2013). D de defensa. *Informe Anual - Sistema de Información sobre Agresiones contra Defensores y Defensoras de Derechos Humanos en Colombia - SIADDHH*.

Defensores, P. S. (2014). La divina comedia. *Informe Anual - Sistema de Información sobre Agresiones contra Defensores y Defensoras de Derechos Humanos en Colombia - SIADDHH*.

Defensores, P. S. (2015). El cambio. *Informe Anual - Sistema de Información sobre Agresiones contra Defensores y Defensoras de Derechos Humanos en Colombia - SIADDHH*.

Defensores, P. S. (2016). Contra las cuerdas. *Informe Anual - Sistema de Información sobre Agresiones contra Defensores y Defensoras de Derechos Humanos en Colombia - SIADDHH*.

Defensores, P. S. (2017). Piedra en el zapato. *Informe Anual - Sistema de Información sobre Agresiones contra Defensores y Defensoras de Derechos Humanos en Colombia - SIADDHH*.

Defensores, P. S. (2018). La naranja mecánica. *Informe Anual - Sistema de Información sobre Agresiones contra Defensores y Defensoras de Derechos Humanos en Colombia - SIADDHH*.

Defensores, P. S. (2019). La ceguera. *Informe Anual - Sistema de Información sobre Agresiones contra Defensores y Defensoras de Derechos Humanos en Colombia - SIADDHH*.

Espectador (2017). Asesinatos de líderes son por "líos de faldas": Ministro de defensa. *Retrieved from: https://www.elespectador.com/noticias/politica/asesinatos-de-lideres-son-por-lios-de-faldas-ministro-de-defensa-articulo-728893*.

Fergusson, L., Ibáñez, A. M., and Riaño, J. F. (2020). Conflict, educational attainment, and structural transformation: La violencia in colombia. *Economic Development and Cultural Change*, 69(1):000–000.

Fergusson, L., Romero, D., and Vargas, J. F. (2014). The environmental impact of civil conflict: the deforestation effect of paramilitary expansion in colombia. *Documento CEDE*, (2014-36).

Fernández, M., Ibáñez, A. M., and Peña, X. (2011). *Adjusting the labor supply to mitigate violent shocks: Evidence from Rural Colombia*. The World Bank.

Goodman-Bacon, A. (2018). Difference-in-differences with variation in treatment timing. Technical report, National Bureau of Economic Research.

Grosjean, P. (2014). Conflict and social and political preferences: Evidence from world war ii and civil conflict in 35 european countries. *Comparative Economic Studies*, 56(3):424–451.

Jones, B. F. and Olken, B. A. (2009). Hit or miss? the effect of assassinations on institutions and war. *American Economic Journal: Macroeconomics*, 1(2):55–87.

Jurado, J. A. and Morales, J. S. (2020). Violence against journalists and freedom of the press: Evidence from mexico.

Kalyvas, S. N. (2006). *The logic of violence in civil war*. Cambridge University Press.

Kaplan, O. (2017). *Resisting war: How communities protect themselves*. Cambridge University Press.

Kreitmeir, D., Lane, N., and Raschky, P. (2020). The value of names-civil society, information, and governing multinationals on the global periphery.

Lobo, I., Vélez, M., and Puerto, S. (2016). Leadership, entrepreneurship and collective action: A case study from the colombian pacific region. *International Journal of the Commons*, 10(2).

Lobo, I. D. and Vélez, M. A. (2020). From strong leadership to active community engagement: effective resistance to illicit economies in afro-colombian collective territories.

Marín, L. and Vélez, M. A. (2021). Violencia contra líderes sociales y ambientales. *Documento CESED*.

Marín, L. (2020). Unintended consequences of alternative development programs: Evidence from colombia's illegal crop substitution. *Documento CEDE No. 40*.

Mejía, D., Prem, M., and Vargas, J. F. (2019). The rise and persistence of illegal crops: Evidence from a naive policy announcement. *Documento CEDE*, (2019-39).

Osorio, J., Mohamed, M., Pavon, V., and Brewer-Osorio, S. (2019). Mapping Violent Presence of Armed Actors in Colombia. *Advances of Cartography and GIScience of the International Cartographic Association*, 16(1):1–9.

Ostrom, E. and Ahn, T.-K. (2009). The meaning of social capital and its link to collective action. *Handbook of social capital: The troika of sociology, political science and economics*, pages 17–35.

Prem, M., Rivera, A., Romero, D., and Vargas, J. (2019). Civilian selective targeting: The unintended consequences of partial peace. *Available at SSRN*, 3203065.

Rohner, D., Thoenig, M., and Zilibotti, F. (2013). Seeds of distrust: Conflict in uganda. *Journal of Economic Growth*, 18(3):217–252.

Sun, L. and Abraham, S. (2020). Estimating dynamic treatment effects in event studies with heterogeneous treatment effects. *Journal of Econometrics*.

Vargas, J. F. (2009). Military empowerment and civilian targeting in civil war. *Documentos de Trabajo, Facultad de Economía, Universidad del Rosario*, (61).

Ávila, A. (2020). ¿por qué los matan? *Editorial Planeta*.

A Appendix

Table A1: Source and Description of the Variables

Variable	Description	Source
Panel A. Social Leaders.		
Killings of social leaders	Name of the leader, location and date of the event. Type of leader. Data from 2005 to 2018.	Somos Defensores
Attacks on social leaders	Location and date of the event. Type of leader. Data from 2012 to 2018.	Somos Defensores
Killings of social leaders	Name of the leader, location and date of the event. Type of leader. Presumed responsible. Data from 2016 to 2020.	INDEPAZ
Panel B. Outcome Data.		
Hectares of coca	Number of cultivated hectares of coca at the municipality level. Annual data from 1999 to 2019.	UNODC - Colombian Drug Information System, SIDCO
Land restitution requests	Number of land restitution requests at the municipality level. Monthly data from Jun-2011 to Sep-2019.	Land Restitution Unit

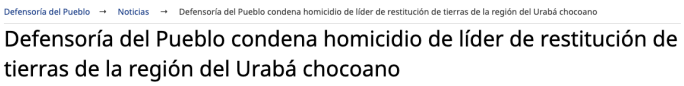
Table A2: Descriptive Statistics

	Obs (1)	Mean (2)	SD (3)	Min (4)	Max (5)
Social leaders killings	6,398	0.052	0.290	0	5
INDEPAZ. Social leaders killings	3,153	0.139	0.726	0	21
Social leaders attacks	6,398	0.021	0.202	0	7
Hectares of coca	6,398	90.366	699.851	0	23,148
Land restitution requests	6,398	12.266	38.526	0	1,249

Note: Statistics are drawn from the sample used in the regressions, that is, restricting to municipalities with less than 200,000 inhabitants and to municipalities that did not have any killing of a social leader for at least two years before the start of the sample.

Figure A1: News Headline - Killings of Social Leaders

(a) News example 1

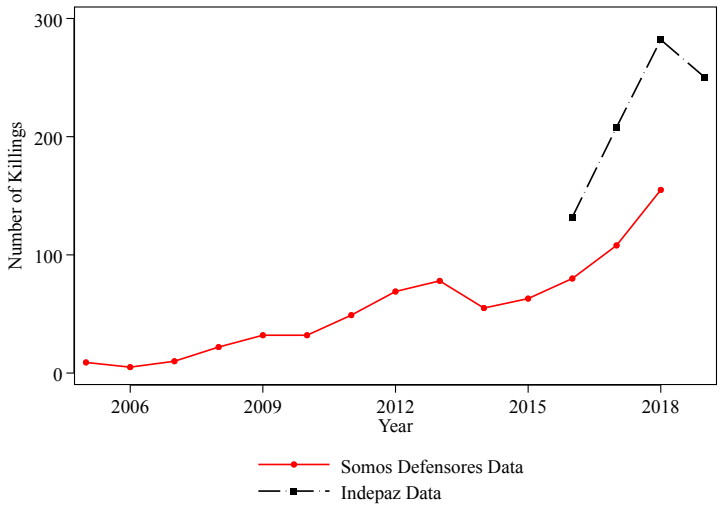


(b) News example 2

(c) News example 3

(d) News example 4

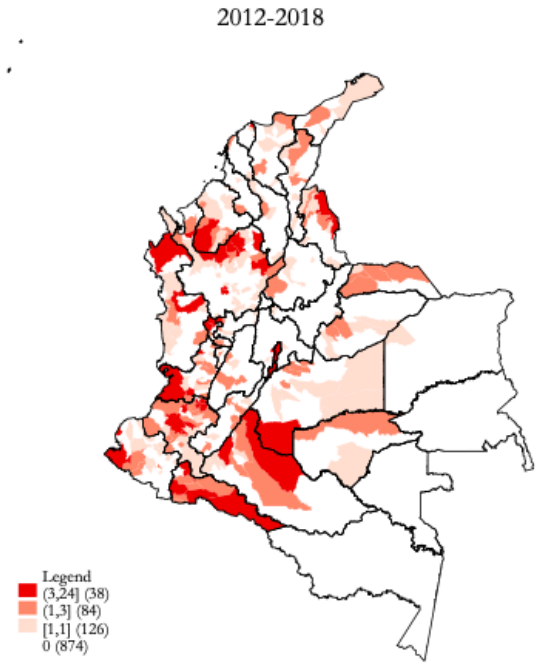
Figure A2: Killings of social leaders by data source



Source: Somos Defensores and INDEPAZ

Figure A3: Killings and attacks from 2012 to 2018

(a) Killings



(b) Attacks

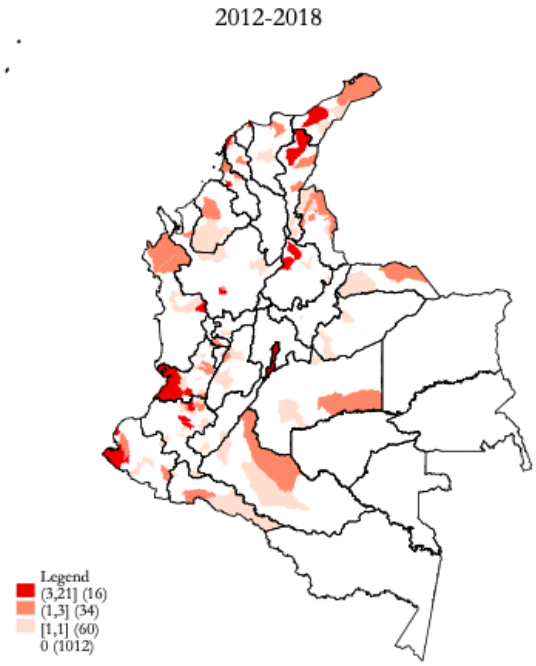
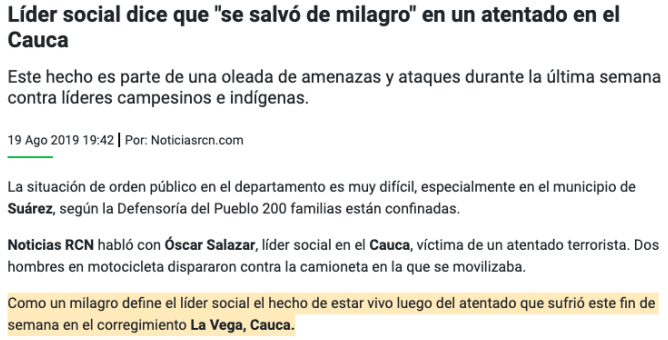


Figure A4: News on failed attempts to kill

(a) News example 1

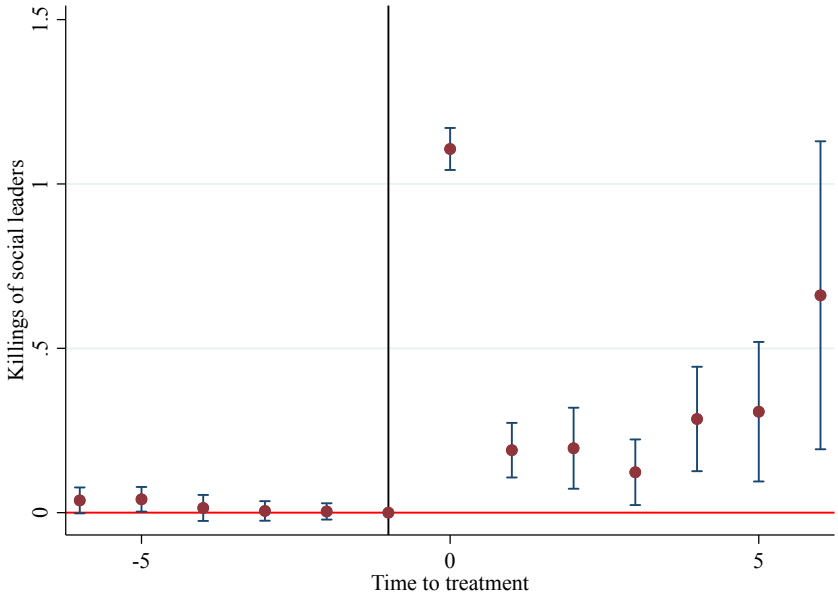
(b) News example 2

(c) News example 3



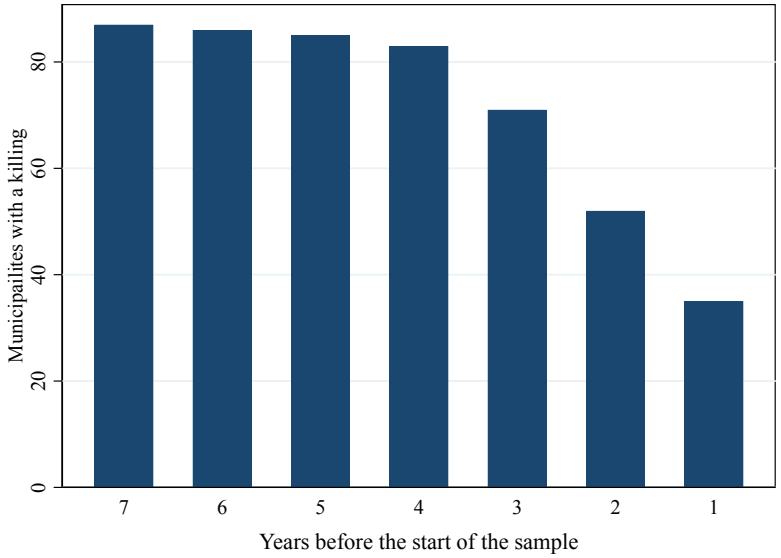
(d) News example 4

Figure A5: Effect relative to the first killing: Social leader killings



Note: Regressions estimated with municipality fixed effects, department by year fixed effects, and time-invariant controls interacted with year fixed effects. 95% confidence intervals reported. Time -1 relative to the first killing is the omitted category. This figure shows that after the first unexpected killing, the number of killings of social leaders is always significant and increasing over time.

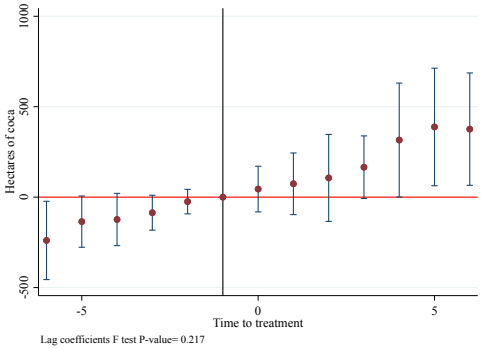
Figure A6: Municipalities with killings of social leaders in pre period



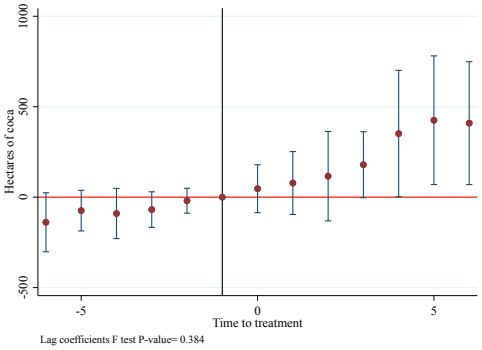
Note: The graph shows the number of municipalities that had at least one killing in each interval of years in the pre period. For example, 2 years before the start of the sample period, in 2010 and 2011, 52 municipalities had a least one killing.

Figure A7: Robustness on number of years with no killing: Coca Hectares

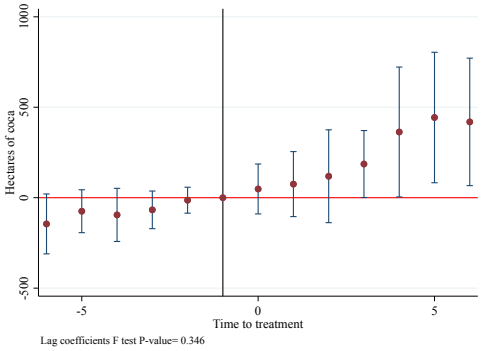
(a) No killings 1 year before



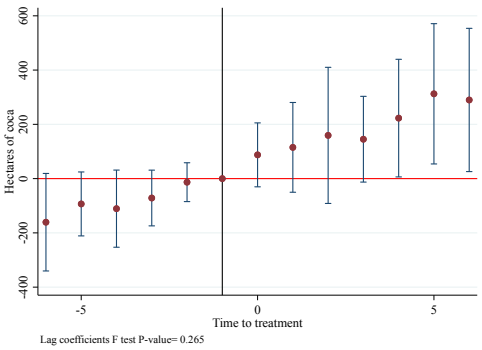
(b) No killings 2 years before



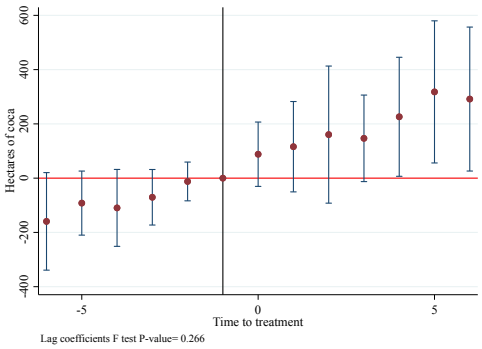
(c) No killings 3 year before



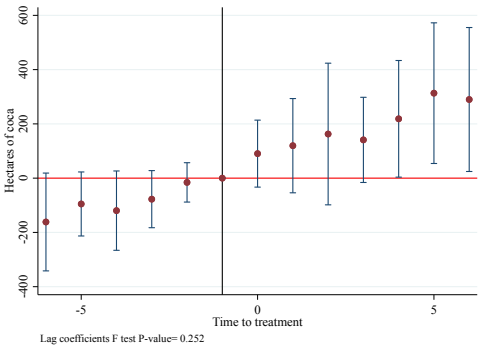
(d) No killings 4 year before



(e) No killings 5 year before



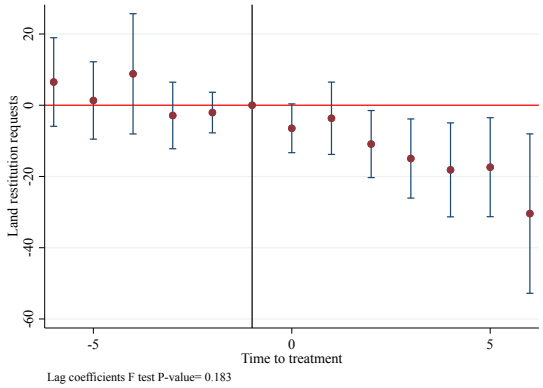
(f) No killings 6 year before



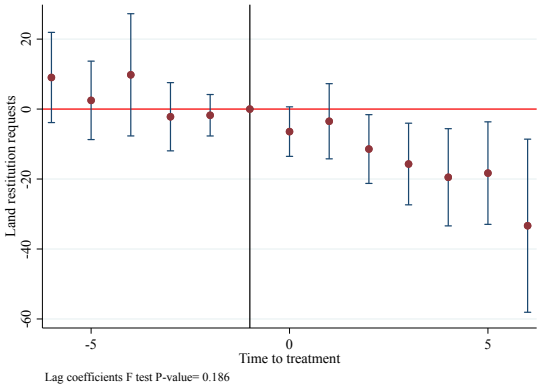
Note: The graph shows the event studies restricting to municipalities with less than 200,000 inhabitants and to municipalities that did not have any killing of a social leader for at least X years before the start of the sample period. The graph shows that the results are similar and hold no matter the restriction made. Regressions estimated with municipality fixed effects, department by year fixed effects, and time-invariant controls in the pre-period interacted with year fixed effects. 95% confidence intervals reported. Time -1 relative to the first attack is the omitted category. Standard errors clustered at the municipality level.

Figure A8: Robustness on number of years with no killing: Land Restitution Requests

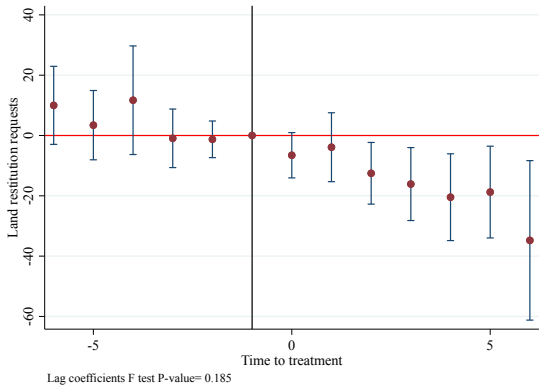
(a) No killings 1 year before



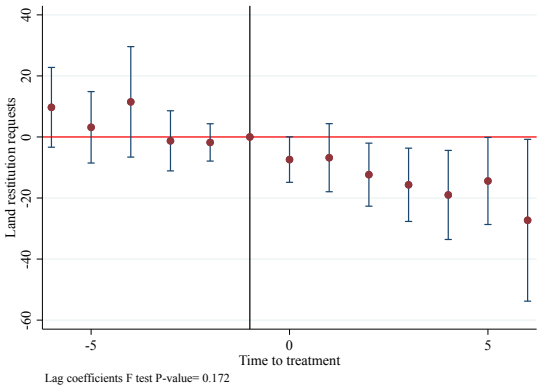
(b) No killings 2 years before



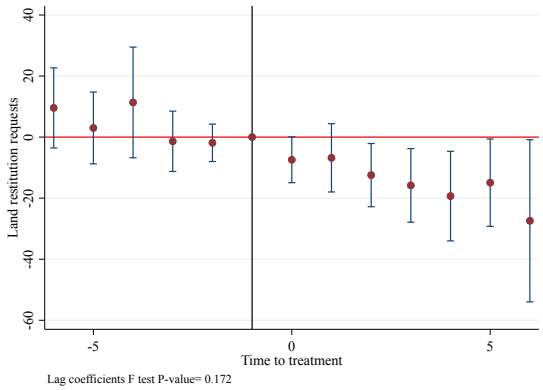
(c) No killings 3 year before



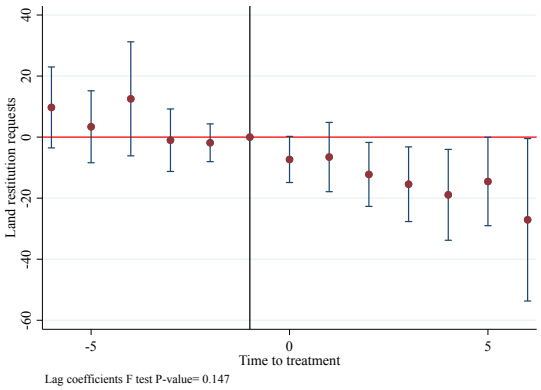
(d) No killings 4 year before



(e) No killings 5 year before



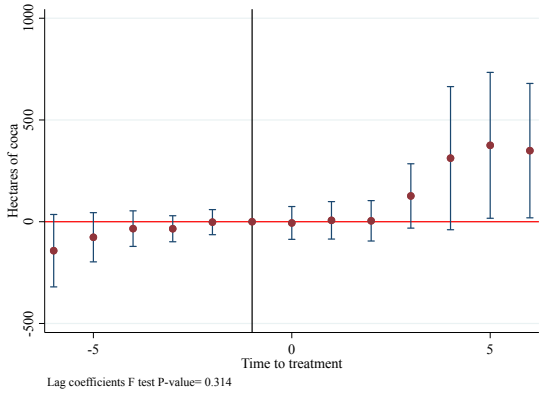
(f) No killings 6 year before



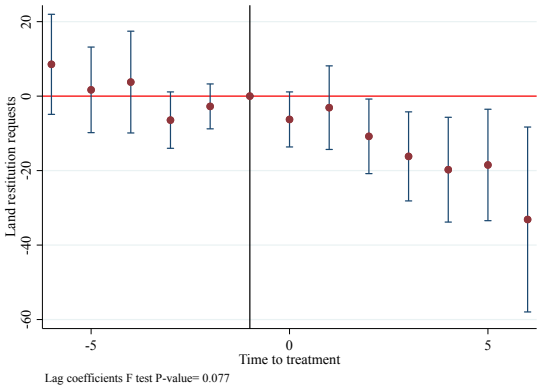
Note: The graph shows the event studies restricting to municipalities with less than 200,000 inhabitants and to municipalities that did not have any killing of a social leader for at least X years before the start of the sample period. The graph shows that the results are similar and hold no matter the restriction made. Regressions estimated with municipality fixed effects, department by year fixed effects, and time-invariant controls in the pre-period interacted with year fixed effects. 95% confidence intervals reported. Time -1 relative to the first attack is the omitted category. Standard errors clustered at the municipality level.

Figure A9: Robustness defining the unexpected event by also considering attacks

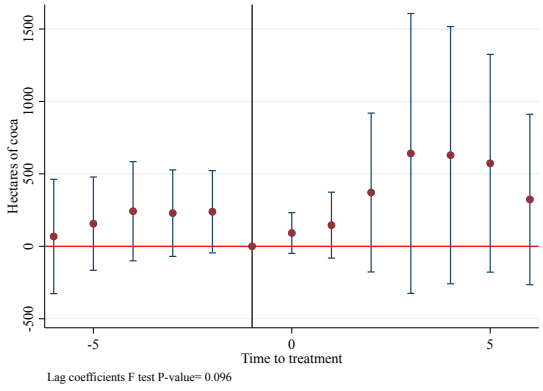
(a) Coca Hectares vs Killings



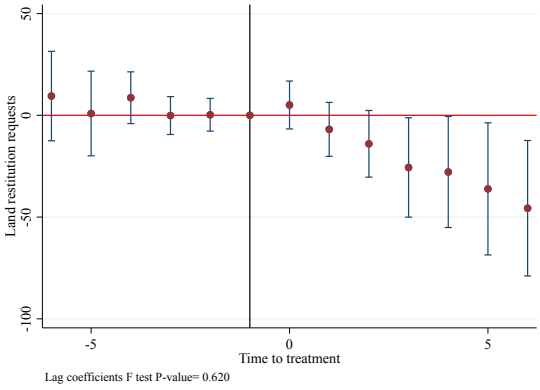
(b) Land Restitution Request vs Killings



(c) Coca Hectares vs attempts to kill



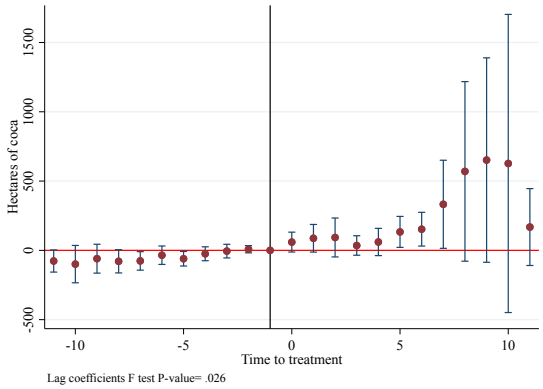
(d) Land Restitution Requests vs attempts to kill



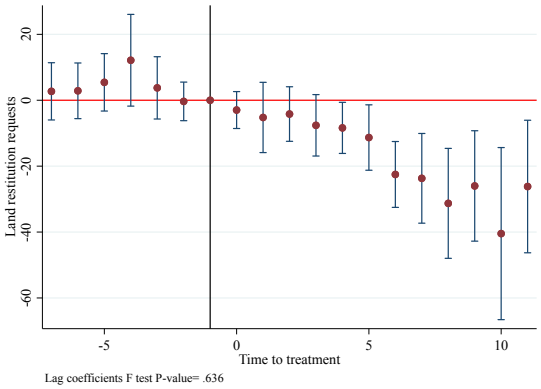
Note: The graph shows the event studies restricting to municipalities with less than 200,000 inhabitants and to municipalities that did not have any killing *or attack* of a social leader for at least 2 years before the start of the sample period. The graph shows that the results are similar and hold even if attacks are considered for defining an unexpected event. Regressions estimated with municipality fixed effects, department by year fixed effects, and time-invariant controls in the pre-period interacted with year fixed effects. 95% confidence intervals reported. Time -1 relative to the first attack is the omitted category. Standard errors clustered at the municipality level.

Figure A10: Effect relative to the first killing - Full Sample

(a) Coca Hectares



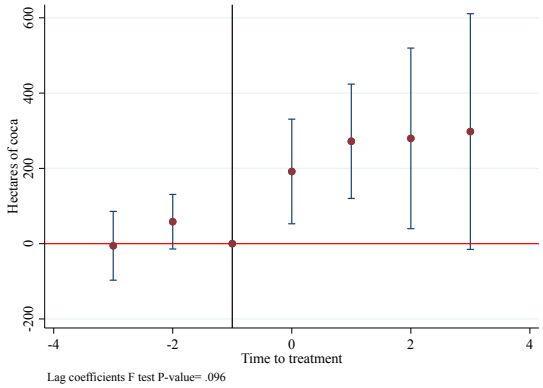
(b) Land Restitution Requests



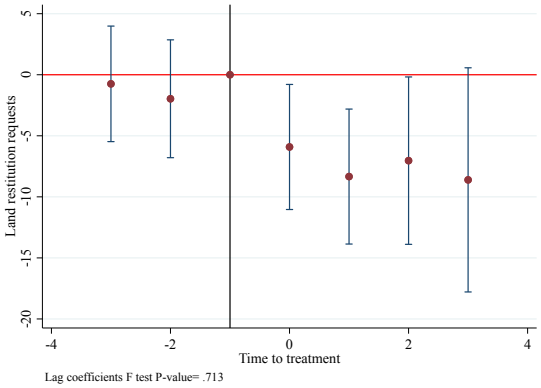
Note: The graph shows the event studies using the full sample (2007-2018) restricting to municipalities that did not have a killing of a social leader for at least for 2 years before the beginning of the sample period. The graph shows that the results are robust to the time interval used in the sample. Regressions estimated with municipality fixed effects, department by year fixed effects, and time-invariant controls in the pre-period interacted with year fixed effects. 95% confidence intervals reported. Time -1 relative to the first attack is the omitted category. Standard errors clustered at the municipality level.

Figure A11: Effect relative to the first killing - INDEPAZ data

(a) Coca Hectares



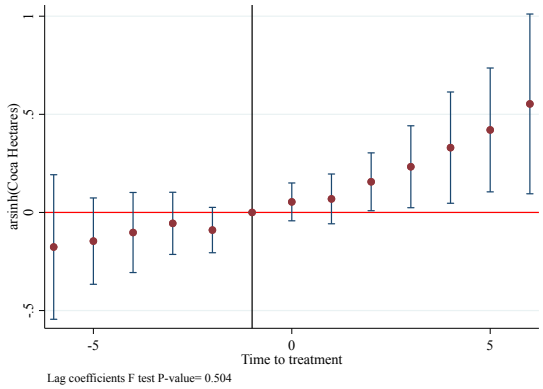
(b) Land Restitution Requests



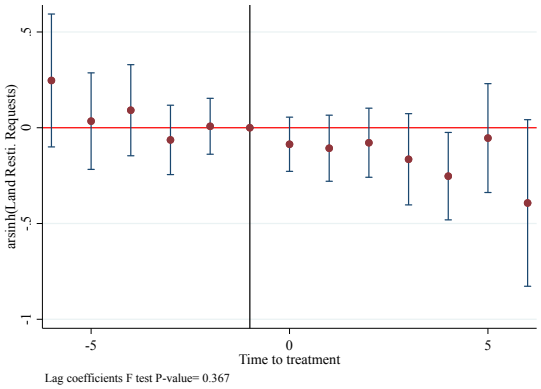
Note: The graph shows the event studies using the INDEPAZ alternative data (2016-2019), leaving only the municipalities that did not have violent events (killings) for 2 years before the beginning of the sample period. The graph shows that the results are robust to the data source used. Regressions estimated with municipality fixed effects, department by year fixed effects, and time-invariant controls in the pre-period interacted with year fixed effects. 95% confidence intervals reported. Time -1 relative to the first attack is the omitted category. Standard errors clustered at the municipality level.

Figure A12: Effect relative to the first killing: Inverse hyperbolic sine

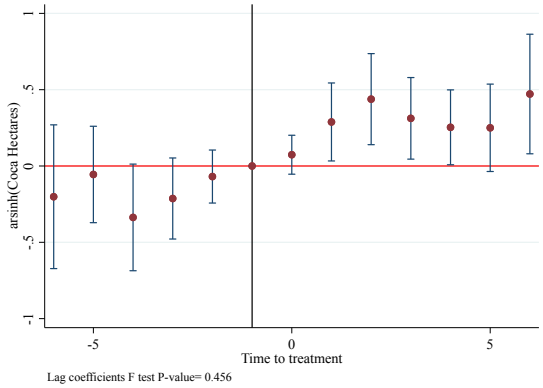
(a) Inverse hyperbolic sine Coca Hectares vs Killings



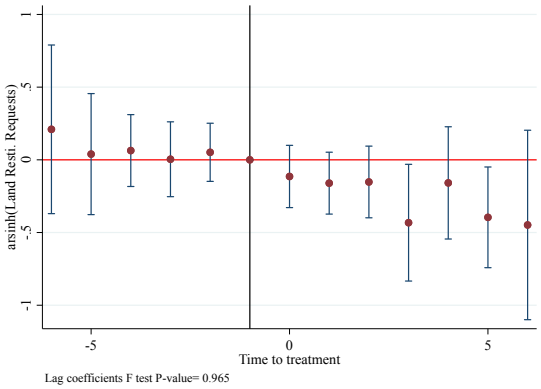
(b) Inverse hyperbolic sine Land Restitution Request vs Killings



(c) Inverse hyperbolic sine Coca Hectares vs attempts to kill



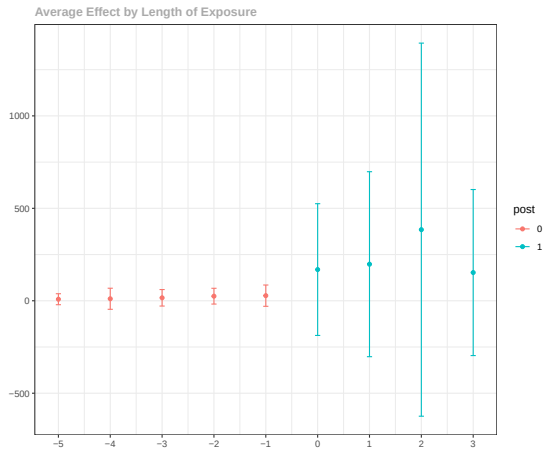
(d) Inverse hyperbolic sine Land Restitution Requests vs attempts to kill



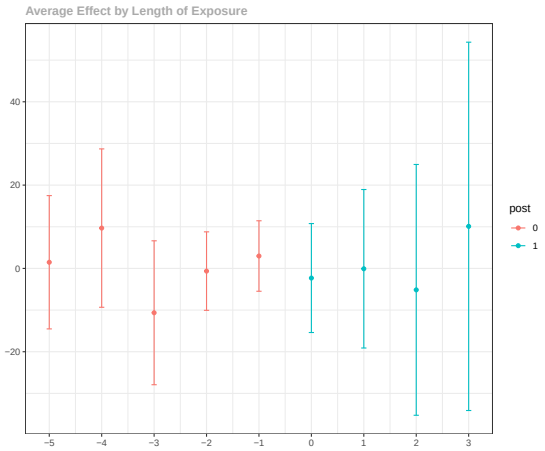
Note: The graph shows the event studies using the inverse hyperbolic sine transformation of the outcome variables, restricting to municipalities that did not have any killing of a social leader for at least 2 years before the beginning of the sample period. The graph shows that the results are robust to transformations of the dependent variable given the number of zeros in each of them and their "hockey stick-like" distributions. Regressions estimated with municipality fixed effects, department by year fixed effects, and time-invariant controls in the pre-period interacted with year fixed effects. 95% confidence intervals reported. Time -1 relative to the first attack is the omitted category. Standard errors clustered at the municipality level.

Figure A13: Callaway & Sant'Anna Estimation

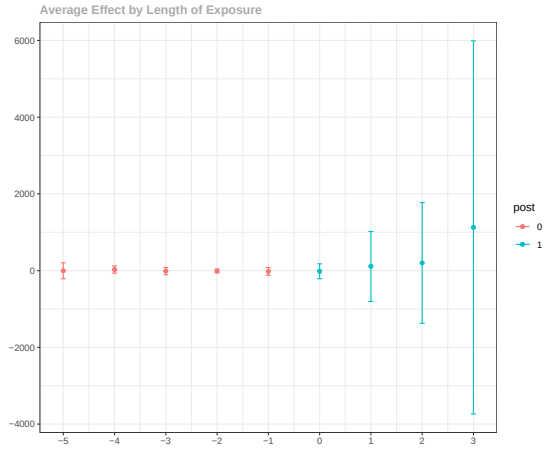
(a) Coca Hectares vs Killings



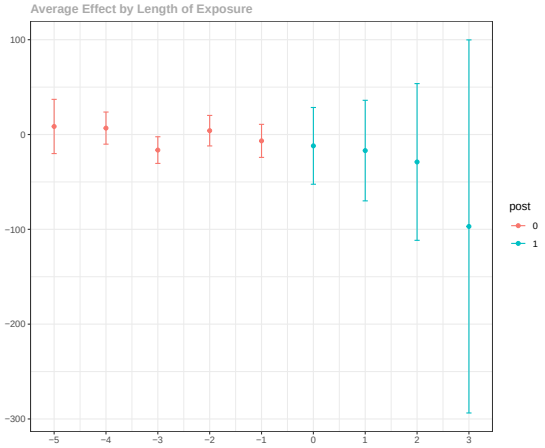
(b) Land Restitution Request vs Killings



(c) Coca Hectares vs Attempts to kill

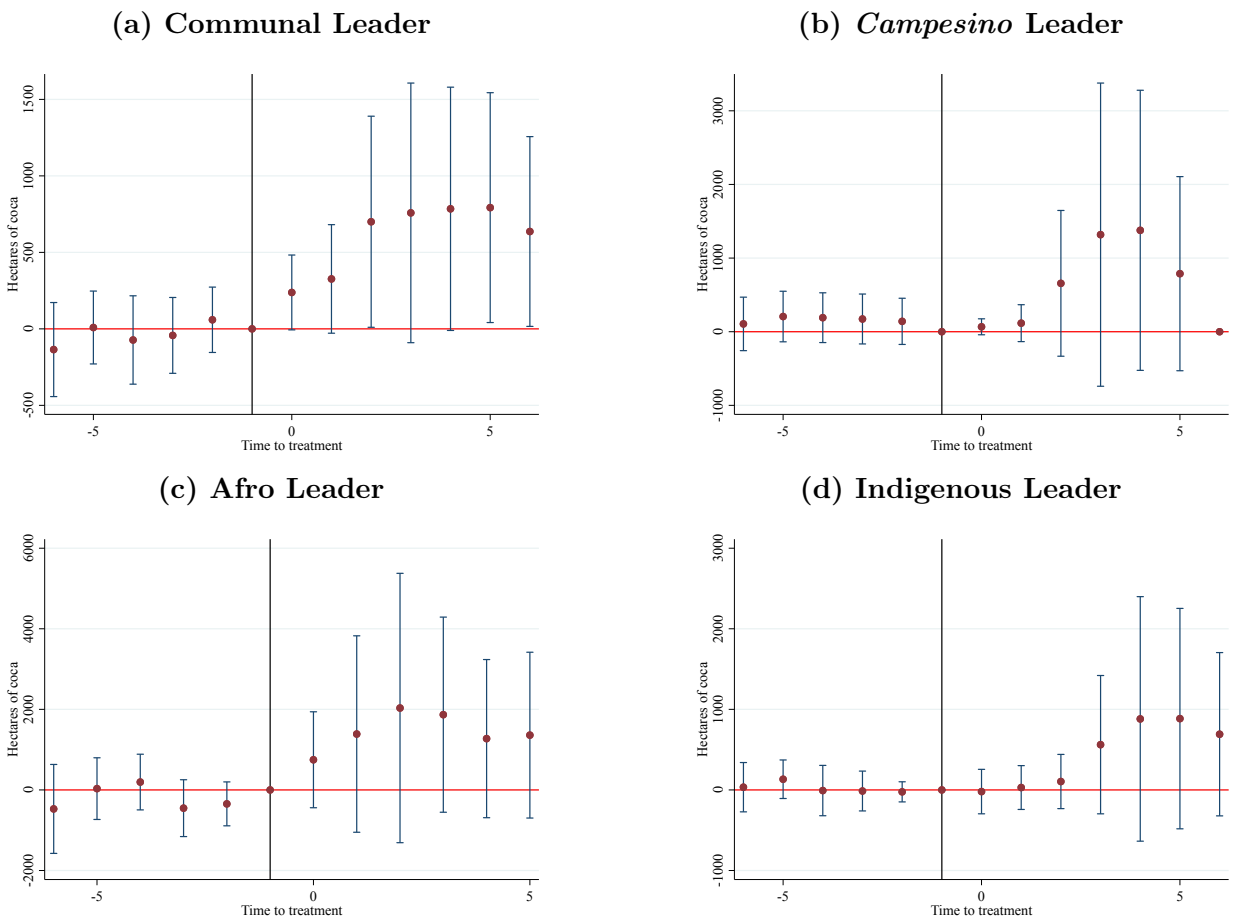


(d) Land Restitution Requests vs Attempts to kill



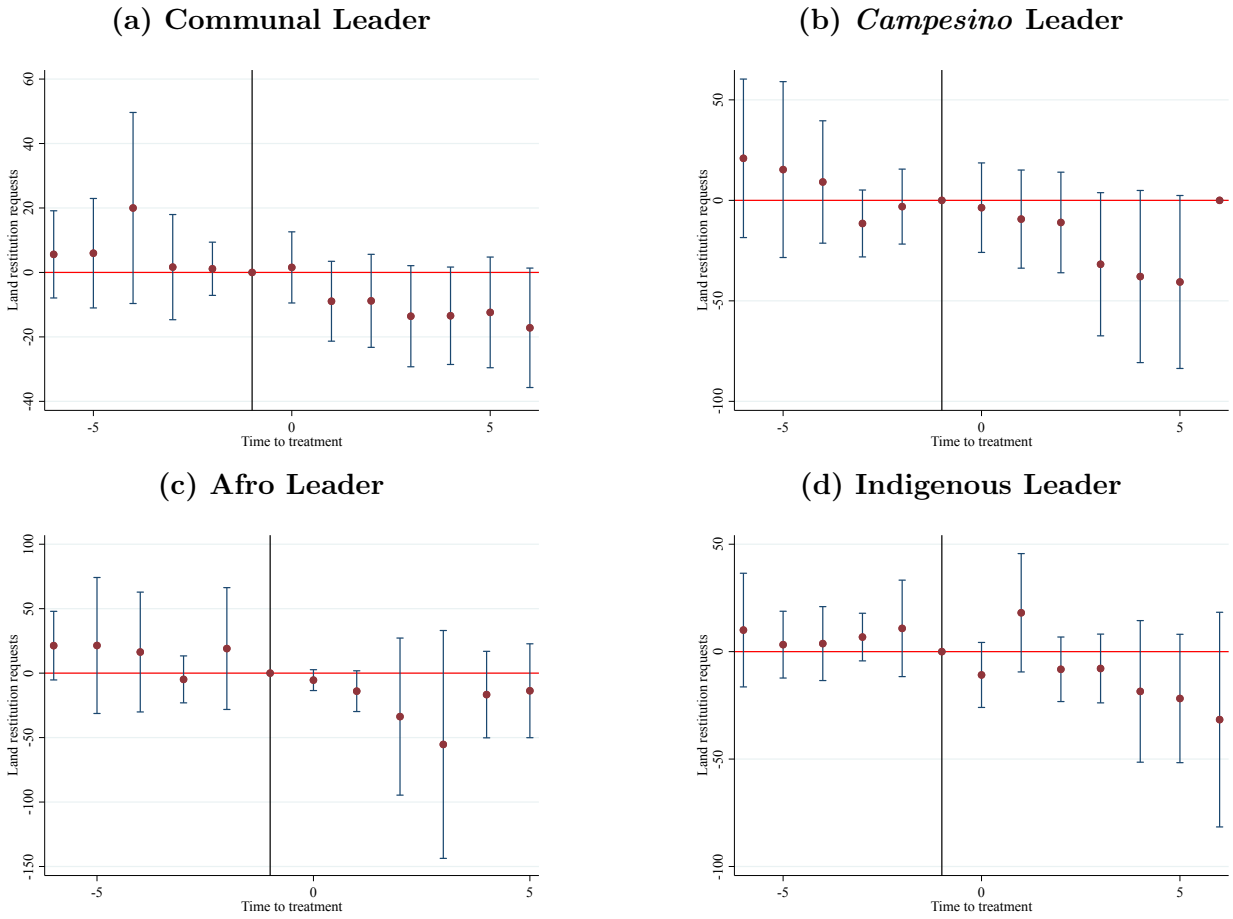
Note: The graph shows the event studies using the Callaway & Sant'Anna (2020) estimation, leaving only the municipalities that did not have violent events (killings) for 2 years before the beginning of the sample period. The graph shows that the results are robust to possible negative weights, heterogeneous treatment effects, and anticipation of 2 years. Regressions estimated with municipality fixed effects, department by year fixed effects, and time-invariant controls in the pre-period. 95% confidence intervals reported. Standard errors clustered at the municipality level are estimated using bootstrap methods. Double robust estimation used.

Figure A14: Effect relative to the first killing by type of leader - Hectares of coca



Note: Regressions estimated with municipality fixed effects, department by year fixed effects, and time-invariant controls in the pre period interacted with year fixed effects. 95% confidence intervals reported. Time -1 relative to the first attack is the omitted category. Standard errors clustered at the municipality level. Sample restricted to municipalities that did not have any killing of a social leader for at least 2 years before the beginning of the sample period.

Figure A15: Effect relative to the first killing by type of leader - Land Restitution Requests



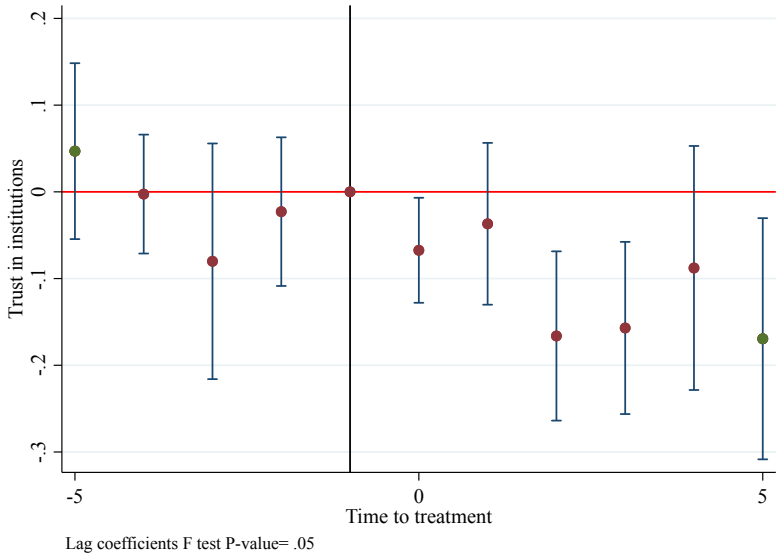
Note: Regressions estimated with municipality fixed effects, department by year fixed effects, and time-invariant controls in the pre period interacted with year fixed effects. 95% confidence intervals reported. Time -1 relative to the first attack is the omitted category. Standard errors clustered at the municipality level. Sample restricted to municipalities that did not have any killing of a social leader for at least 2 years before the beginning of the sample period.

Table A3: Type of Killing

Type of leader	No.	%
Comunal	236	38.8%
Otro	121	19.9%
Indigena	109	17.9%
Campesino	70	11.5%
Afro	28	4.6%
Victimas	27	4.4%
DDHH	17	2.8%
Total	608	100.0%

Note: The table shows the distribution of all kilings frmo 2012 to 2018 by type.

Figure A16: Effect relative to the first killing - Trust in institutions



Note: Regressions estimated with municipality fixed effects, department by year fixed effects. 95% confidence intervals reported. Time -1 relative to the first killing is the omitted category. Standard errors clustered at the municipality level. The mean value of the trust variable is 0.6, indicating effects of at least 11% of the mean. **Source:** Latinobarometro.

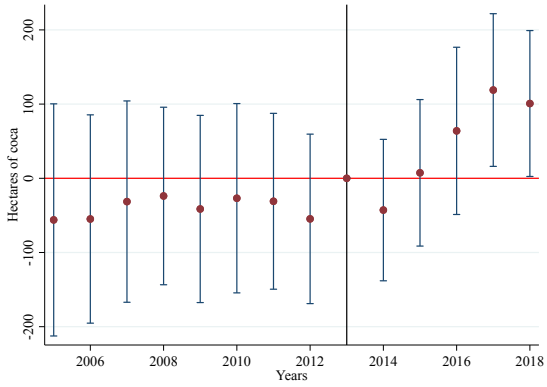
Table A4: General violence does not predict unexpected killings

	First Killing	First Attack
	(1)	(2)
	Panel A	
Homicides	0.002	-0.002**
	(0.001)	(0.001)
	Panel B	
Displacements	0.000	0.000
	(0.000)	(0.000)
	Panel C	
Kidnappings	-0.003	0.007
	(0.008)	(0.008)
Muni FE	✓	✓
Depto X Year FE	✓	✓
Controls	✓	✓
Dep. Var. Mean	0.101	0.042
Dep. Var. SD	.301	.201
Obs	6,398	6,398

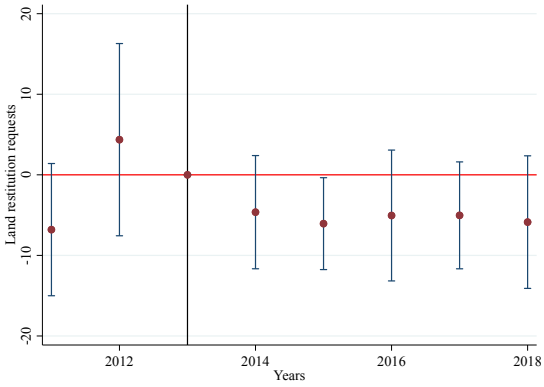
Clustered standard errors at the municipality level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Time invariant controls in the pre period interacted with year fixed effects: rural index, log(population), municipality area, municipality altitude, distance to the department's capital, distance to Bogotá, Guerrilla violent events, Paramilitary violent events, Judicial inefficiency, Ethnic Minorities Presence.

Figure A17: Effect relative to the ceasefire in municipalities with killings of social leaders

(a) Coca Hectares



(b) Land Restitution Requests



Note: Treatment group is defined as municipalities that had at least one killing of a social leader before the ceasefire with FARC, in 2014. Regressions estimated with municipality fixed effects, department by year fixed effects, and time-invariant controls in the pre period interacted with year fixed effects. 95% confidence intervals reported. Standard errors clustered at the municipality level.