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# Perils, Pitfalls & Dilemmas in Responding to Transnational Organized Crime Groups.

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# PERILS, PITFALLS & DILEMMAS IN RESPONDING TO TRANSNATIONAL ORGANIZED CRIME GROUPS

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Juan Del Rio

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To: Dean John F. Stack, Jr.
Steven J Green School of International and Public Affairs

This dissertation, written by Juan Del Rio, and entitled Perils, Pitfalls & Dilemmas in Responding to Transnational Organized Crime Groups, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this dissertation and recommend that it be approved.

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## DEDICATION

This dissertation is dedicated to my family. Especially to my mother, Luz Marina Sierra, who has made a lot of sacrifices and continues to motivate me daily. To my supportive father, my girlfriend who has stuck with me through this endeavor, and my dog Lucas who has accompanied me through many hours of writing. Without all of your love and support, this dissertation would not have been possible.

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ABSTRACT OF THE DISSERTATION

PERILS, PITFALLS & DILEMMAS IN RESPONDING TO TRANSNATIONAL ORGANIZED CRIME GROUPS

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Governments employ several approaches to combat Transnational Organized Crime groups. These groups include drug trafficking organizations and armed-insurgent groups. Tactics such as High-Value Target strikes, Peace Accords, and vigilantism have shown to successfully debilitate criminal networks while at the same time sparking unintended negative outcomes. For example, some of these approaches are associated with an increase in cartel-related violence, terrorist attacks, and the lethality of terrorist attacks. What remains unclear is the degree to which these approaches affect these associations and which of these tactics has the most favorable outcomes in combating Transnational Organized Crime groups. The analyses conducted in this dissertation address these gaps in the literature by separately analyzing the three approaches and ultimately comparing their outcomes. Therefore, this dissertation aims to devise a framework for governments and communities to employ against Transnational Organized Crime groups that will yield positive outcomes while minimizing any unintentional consequences. This dissertation independently explores High-Value Target strikes, Peace

Accords, and vigilantism. Specifically, the first study of this dissertation explores the link between High-Value Target Strikes and cartel-related homicides in Tijuana, Mexico using data from Mexico's National Institute of Statistics and Geography. The second study analyzes the link between High-Value Target strikes and terrorism in Colombian using data from the Global Terrorism Database. This second study also analyzes the effect that Peace Accords have on cartel-related violence by employing data available through Colombia's National Police. The third study evaluates the association between vigilantism and cartel-related violence in Guerrero, Mexico using the same dataset as study 1.

The findings of this study suggest that all three assessed approaches yield positive outcomes but are accompanied by negative effects. However, the most promising results came from study 3, which indicates that the presence of a long-established communitarian police force—a legally recognized vigilante style institution that engages in its own policing and judicial practices—is associated with the smallest increase in cartel-related homicides when compared to other approaches. In terms of terrorism, results from study 2 indicate that Peace Accords are more effective in reducing terrorism than High-Value Target strikes. The dissertation concludes with a comparison of the outcomes of the three approaches, along with a discussion on the implications of these findings and the limitations of the three studies, as well as suggestions for future research in this realm.

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# CHAPTER 1

## INTRODUCTION: TRANSNATIONAL ORGANIZED CRIME

Transnational Organized Crime (TOC) groups pose a significant and developing threat to domestic and international security, with threatening implications for public health, democratic institutions, and economic stability throughout the world (National Security Council, n.d.). The Department of Justice (2008) has identified several characteristics that pertain to TOC groups. This includes committing violence in a portion of their activities, with the intention to intimidate or make authentic or implied threats. TOC groups exploit the political and cultural disparities between countries to promote their goals, while enriching their group, increasing their influence, and/or preventing exposure and detention. These groups also attempt to acquire influence in government, political affairs, and businesses through corrupt and lawful methods. Likewise, their main objective is economic profit, through unlawful activities while also investing in lawful businesses. Lastly, these illegal networks employ measures to prevent the apprehension, and/or prosecution of leaders and members through the group's structural makeup. The crimes that these groups engage in vary from drug trafficking, human trafficking, migrant smuggling, money laundering, and weapons trafficking (FBI, 2016).

Mexican TOC groups, also known as Mexican Drug Trafficking Organizations (DTOs) (Beittel, 2020), significantly affect security in the United States (U.S.) and Mexico. Mexican DTOs are currently the biggest criminal drug threat to the U.S. as no other groups are able to challenge them (DEA, 2019). Mexican DTOs traffic South American cocaine into the U.S. and produce methamphetamine, marijuana, heroin, and

synthetic opioids also bound for illegal entry into the U.S (Beittel, 2020). Within Mexico, these DTOs are to blame for the widespread violence since 2006 that has seen Mexico's homicide rate spike (Beittel, 2020), placing Mexico among the most violent countries in the Western Hemisphere (Calderón, Heinle, Kukertz, Ferreira, & Shirk, 2020). Along with the U.S. and Mexico, these Mexican DTOs present a threat to dozens of regions, as their supply chains are global (Beittel, 2020). For example, a drug raid in the Philippines resulted in the arrest of three affiliates of the Sinaloa Cartel (Shadbolt, 2014), highlighting the links between these transnational criminal groups.

TOC groups are not the only danger. Other types of groups that pose a threat to U.S. interests and its allies are armed insurgents varying from guerilla organizations to terrorist cells. While TOC groups are motivated by the interest of profit, armed insurgents are different in that they use proceeds from crime to support their political goals (Saab & Taylor, 2009). Similarities between TOC groups and armed insurgencies exist, including the use of violence and threats to achieve their goals (Sanderson, 2004), and the trafficking of illicit drugs (Schmid, 2005). It is estimated that before the armed insurgency known as the Revolutionary Armed Forces of Colombia (FARC) was demobilized, the group was earning $267 million a year from the cocaine trade alone (McDermott, 2017). Although the FARC has officially disbanded, some of the insurgency's former members have continued to operate and engage in the same criminal activities that the FARC was previously involved in. The continued operations of former FARC rebels, in addition to other insurgent TOC groups within Colombia, still pose a threat to the U.S. and its Colombian ally.

## Statement of the Problem

States that are faced with the presence of TOC and armed insurgent groups employ a variety of tactics to combat these illegal groups. These approaches include the removal of leaders (by arrest or assassination), the adoption of a peace treaty, vigilantism by non-government actors, the arrest of mid and low-level members, the interdiction of a group's illicit goods in route to a consumer country, the blocking of access to illegal proceeds, military patrols, and the infiltration of organizations just to name a few. However, this dissertation will focus on three specific approaches, used by either governments or communities, to combat these illicit networks. These approaches include 1) the targeted arrest or killing of TOC group leaders; 2) the signing of peace accords with armed insurgent groups, and 3) government sanctioning of vigilante style groups that emerge through nongovernmental stakeholders as a method to combat Drug Trafficking Organizations (DTOs). This dissertation will focus on these three particular approaches both because there is a significant gap in the literature within these areas and because an evaluation of these approaches is extremely timely and relevant.

The U.S. has partnered with the governments of Mexico and Colombia to combat the threat posed by TOC groups and armed insurgents. Since 2008, American taxpayers have supplied Mexico with over $1.6 billion in funds through the Merida Initiative (Seelke & Finklea, 2017). A key objective of the Merida initiative was to disrupt the capacity of Organized Crime groups to operate "by systematically capturing and incarcerating their leaders" (Department of State, 2018). This policy is known as the "kingpin strategy" and is commonly referred to as "decapitation" strikes, "fugitive"

apprehension, or simply, the targeting of high-value targets (HVTs) (Jones, 2016). This policy is not only employed by governments facing threats from Organized Crime groups or DTOs, but Orama (2001) argues that this strategy was previously used in counterterrorism operations before being adopted into counter-narcotics. In the realm of military operations, it is expected that the loss of HVTs will critically damage important enemy functions (Gortney, 2010). However, the implementation of this strategy has come under heavy criticism by scholars as many have indicated that while this approach may debilitate a DTO, often the weakening of the DTO will be followed by unintended consequences that potentially increase overall violence.

Alongside Mexico, Colombia has received over $11 billion in aid from the U.S. through Plan Colombia and subsequent programs since 2000 (Beittel, 2019). Plan Colombia was a collaboration between the U.S. and Colombia to combat drug trafficking and guerilla violence (Shifter, 2012). While combatting guerillas and other armed groups, the Colombian government also targeted HVTs in an attempt to debilitate their groups. Mexico and Colombia are not alone in implementing this strategy. By 2010, the targeted killing of HVTs was utilized by over a dozen countries in ongoing conflicts with diverse non-state opponents (Wilner, 2010). Kingpin strikes have shown to be effective in disrupting both DTOs and terrorist networks, while at the same time they have had unintentional consequences (Johnson, 2010). HVT strikes against DTO leaders have been followed by an increase in violence (Dell, 2011; Guerrero, 2011; Guerrero-Gutierrez, 2011; Osorio, 2015; Phillips, 2015). Against insurgent groups, HVT strikes have shown to increase attacks from the insurgent group in retaliation to the strike (Byman, 2006). Although the unintended and negative consequences of HVT strikes have been

emphasized, both U.S. taxpayers and the taxpayers of countries where these groups are being targeted, continue to fund the implementation of HVT strikes.

In an effort to end the armed conflict in Colombia, the Colombian government entered into a peace agreement with the FARC in November 2016. The FARC was considered the largest insurgent group in Colombia and was engaged in a civil war with the Colombian government for 52 years (InSight Crime, 2017). This comes as a change in tactics to deal with the threat of this insurgent group as Colombian armed forces previously carried out targeted strikes against the FARC. One key example is the assassination of former Chief of Staff of the FARC, Alfonso Cano in 2011. Within the agreements of the peace accord, the FARC has formally transitioned into a political party while some of the former members have declined to cease military operations and have sustained militant and drug trafficking activities under the organization's initial name (Stanford, 2019).

In yet another approach to dealing with TOC groups, certain regions of Mexico have seen the proliferation of vigilante groups to combat DTOs when the Mexican government has failed to do so or do so successfully. It is important to note, that unlike the two other approaches, vigilantism is not a government policy as these groups are typically made up of volunteers from the communities they emerge from. Vigilantes are found in relatively poor areas where state and federal authorities have a marginal presence, and where local authorities are weak and/or vulnerable to influence from TOC groups (Heinle, Molzah, & Shirk, 2015). Several researchers have attempted to identify and understand the factors that lead to the rise of the vigilante phenomenon in areas of Mexico, but only two studies have studied the effect that vigilantism has on crime, with

both studies finding conflicting results (Osorio, Schubiger, & Weintraub, 2016; Del Rio, 2020).

The three aforementioned approaches — 1) the targeted arrest or killing of leaders; 2) the adoption of peace accords, and 3) the rise of vigilantes — have been implemented to combat TOC groups and armed insurgencies in developing countries. Despite the significance of the research that has assessed these policies individually, to date there is no empirical study that compares these frameworks side by side to assist governments in establishing the best course of action in dealing with TOC groups and armed insurgencies.

**Purpose of the Study**

To date, researchers have analyzed the positive, and more importantly, negative effects of HVT strikes against TOC groups and armed insurgents. However, policymakers have only seemingly focused on the positive outcomes while generally ignoring the negative consequences of HVT strikes. At the same time, other policies have been implemented to deal with the threats posed by TOC groups and armed insurgents; namely, peace accords and allowing for vigilantism. Consequently, the purpose of this study is to comparatively evaluate the benefits and consequences of three common responses to TOC groups found in developing countries. This includes 1) strategies that target TOC group leaders, a so-called "kingpin" approach; 2) reliance on peace accords and 3) the role of vigilantism to combat cartel-related homicides. Accordingly, this dissertation will venture to develop an operational framework to provide researchers,

policymakers, and practitioners with a road map on the most effective policy to deal with the threats of TOC groups and armed insurgents.

## The Significance of the Study

This dissertation stands to offer several unique contributions. An analysis of HVT strikes against Drug Trafficking Organizations (DTOs) in Tijuana, followed by a comparison of HVT strikes and a peace treaty against an insurgent group in Colombia, and a culminating investigation on vigilantism in Guerrero, Mexico will allow policymakers stakeholders, and practitioners to understand the most effective policy to combat TOC groups and armed insurgents. These analyses may also lead to the development of a more effective strategy to combat TOC groups and armed insurgents. This study is significant because it will address several gaps in the literature related to these three policies/approaches.

The first investigation will include a case study analyzing the effect that HVT strikes have on cartel-related homicides in Tijuana, Mexico. Most studies that have examined the effect of HVT strikes on violence in Mexico have been analyzed from a macro level perspective (Atuesta & Perez-Davila, 2018; Calderón, Robles, Diaz-Cayeros. & Magaloni, 2015; Phillips, 2015) while one study conducted a case study on HVT strikes in Tijuana between 2006 and 2012 (Jones, 2013). However, this singular study used a qualitative approach. Therefore, to address the limitations of the prior studies, this case study will analyze the effects that two separate HVT strikes against two different DTOs have on cartel-related homicides in Tijuana by employing a time-series design.

Therefore, this investigation will provide a comprehensive outlook of the long-term effects of HVT strikes at the micro-level with the use of quantitative methods, an approach that has not been used before. The unique nature of Tijuana makes this analysis crucial to the literature. Tijuana's geographic location makes it an important transit point for illicit drug smuggling and transnational organized crime (Sánchez Lira; Orozco; Ferreira, & Shirk, 2018), therefore, making it difficult to generalize the observed results of previously mentioned macro level studies to Tijuana.

The second study will analyze and compare the effects of HVT strikes and a peace treaty on terrorist incidents with the same armed insurgent group. Numerous studies have analyzed the effect that HVT strikes have on terrorism in many different areas around the world, while only one study has analyzed the effect of HVT strikes on terrorism in Colombia (Morehouese, 2014). However, this study evaluated HVT strikes against the FARC between 2004 and 2011. While Colombian security forces killed two members of the FARC secretariat in 2010 and 2011, the Morehouse (2014) study could not account for the long-term effects of those strikes. These long-term effects are a gap that the current analysis seeks to address. Additionally, post-peace treaty and crime studies in Colombia have focused on the demobilization of ex-combatants of the United Self-Defense Forces (AUC), or deserters of the FARC and ELN (Kaplan & Nussio, 2018). These studies have focused on the recidivism of ex-combatants during reintegration (Betancourt, 2010; Daly, Paler & Sami, 2017; Kaplan & Nussio, 2018; Peña & Dorussen, 2019), the threat that ex-combatants pose (Nussio, 2017), the association between demobilization of the AUC and homicides (Howe, 2012), and violence at the subnational level following the demobilization of the AUC (Nussio & Howe, 2016).

Conspicuously, no studies have previously analyzed the effect that the peace treaty with the FARC had on terrorism or cartel-related homicides in Colombia. These are two additional gaps that the second study of this dissertation will address by employing a time series design and spatial analyses. More importantly, this second study will similarly compare the effects that HVT strikes and peace accords have on terrorism.

Lastly, the third study in this dissertation will analyze the effect that vigilantism has on cartel-related violence in Guerrero, Mexico. Currently, there are only two studies that have analyzed the effect that vigilantism has on crime in Mexico, both focusing on the state of Michoacán (Osorio et. al., 2016; Del Rio, 2020). It is important to analyze the effect that vigilantism has on cartel-related violence in Guerrero, as the two Michoacán studies had conflicting results. Therefore, an evaluation will be conducted on cartel-related violence in a region controlled by communitarian police and compare it to cartel-related violence in an area with vigilantes and another area without the presence of vigilantes or communitarian police forces. Additionally, this study will use spatial analysis tools to study cartel-related crimes unlike the previous studies on the effect of vigilante presence on crime in Michoacán. By analyzing the three aforementioned approaches in three separate studies, this dissertation will be able to gain insights into the individual differences of the positive and negative consequences of these tactics to deal with TOC and insurgent groups.

## Overview of Chapters

This dissertation will be organized in the following manner. Chapter 2 will review the literature on the three policies analyzed in this study. Likewise, this chapter will explore the use of HVT strikes on different types of criminal networks, i.e., street gangs, DTOs, and armed insurgent groups. A review of the literature demonstrates the results and consequences of using the HVT approach on the aforementioned criminal groups. A review of studies on peace accords with armed groups will follow. This will be followed by a discussion on the factors related to the proliferation of vigilante groups, followed by vigilantism's effect on crime based on previous studies. The literature review of the three policies will conclude with the identification of the gaps in the research for the three strategies and the importance of filling these gaps.

Chapter 3 will explore the effect that two HVT strikes from two different DTOs had on cartel-related homicides in the Mexican border city of Tijuana. To analyze these trends, data from the Instituto Nacional de Estadistica y Geografia (INEGI) will be used. This study will use a time-series design to assess the effect that the two separate HVT strikes had on cartel-related homicides. After conducting the analyses, this study will apply a theoretical explanation from the HVT strikes and violence literature to explain the situation in Tijuana after the HVT strikes. The findings of the time series analyses will be reported, followed by a discussion, conclusion, and limitations of the study.

Chapter 4 will assess the effect that HVT strikes against the FARC had on (1) the number of terrorist incidents and (2) on attack intensities (the lethality of the attacks) perpetuated by the armed insurgent group. To analyze these trends, data from the Global

Terrorism Database (GTD) will be analyzed between 2002 – 2012. Additionally, a follow-up analysis will evaluate the effect that the peace accord with the FARC had on (1) cartel-related homicides, (2) the number of terrorist incidents, and (2) on attack intensities perpetuated by FARC dissidents. Related, the same analysis will investigate the National Liberation Army, which became the largest armed insurgent group in Colombia after the FARC signed the peace deal. To analyze these trends, data from the GTD will be analyzed between 2010 - 2018. While cartel-related homicides will be analyzed using data from the Colombian National Police between 2010 – 2020. This study will use a time series design to assess how terrorist incidents, attack intensities, and homicides were affected by the two policies being analyzed. Coupled with the time series analyses, this chapter will also include a section that will map the spatial distribution of general terrorism and homicide incidents in Colombia using ArcGIS. The findings of the time series and spatial analyses will be reported, followed by a discussion, conclusion, and limitations of the study.

Chapter 5 will analyze the effect of the emergence of vigilantes in Guerrero, Mexico had on cartel-related violence. This portion of the study will compare the trends of cartel-related violence in municipalities occupied with vigilantes to (1) municipalities that were occupied with communitarian police, and (2) municipalities without any vigilantes or communitarian police. To analyze these trends, data from INEGI will be used. This study will use a time series design to assess the effect that the emergence of vigilantes had on cartel-related homicides between 2011 – 2017. Following the time series analyses, this chapter will additionally include a section that will characterize the geography of cartel-related homicide distribution in Guerrero using ArcGIS. The findings

of the time series and spatial analyses will be reported, followed by a discussion, conclusion, and limitations of the study.

The dissertation will conclude with chapter 6. This chapter will discuss the results of the three approaches assessed within the dissertation and position the findings within the existing literature. This chapter will also contain a discussion of policy implications for policymakers and practitioners in the United States, Mexico, Colombia, and all other governments that exhibit threats from TOC groups. Specifically, this discussion will focus on how to best implement these approaches against TOC groups.

# Chapter 2

## LITERATURE REVIEW: HIGH VALUE TARGET STRIKES, PEACE ACCORDS AND VIGILANTISM

This dissertation attempts to expand the understanding of the outcomes associated with policies to debilitate TOC groups and armed insurgent groups. Three branches of literature are explored in this chapter. Before the first body of research is examined, there is a brief discussion on the two different organizational structures of TOC groups and armed insurgencies. Then, the first body of research will include an overview of the application of HVT strikes, including accomplishments and consequences when implementing this policy on street gangs, TOC groups, and armed insurgencies. Second, previous scholarship on post-conflict violence throughout different regions will be discussed. Third, previous research will be discussed regarding the factors associated with vigilantism, factors related to support for vigilantism, and the effect that vigilantism has on crime. Therefore, the goal of this chapter is to identify the gaps in the research related to these policies used to deal with TOC groups and armed insurgencies and to better understand the complexities of these strategies.

### Hierarchical versus Flat Networks

All illicit networks have differing levels of centralization and hierarchy as they, like governments, meet the difficulties of handling the free flow of information and providing security needs (Kenney, 2007). Flat networks are characterized by having fewer layers of management than their hierarchical counterparts (Jones, 2013), allowing these networks to be more adaptive to their needs. Using the example of Colombian DTOs, Kenney (2003) describes these flat organizations as “wheel networks” in which a

core group organized activities among purposefully specific nodes, including cocaine base suppliers, processing labs, transportation groups, and distribution rings that transported cocaine to separate retailers and channeled profits back to network heads and financiers. The core groups were typically based out of Colombia, while their support nodes were operating in other countries, giving these networks a transnational element (Kenney, 2003).

In some cases, groups shift their organizational structure from a hierarchical to a decentralized network. This was the case with al-Qaeda in response to the U.S. occupation of Afghanistan and the elimination of numerous members of its mid-level leadership (Celso, 2012). Therefore, Kenney's (2003) wheel network structure can also be applied to an armed insurgent group such as al-Qaeda, as the network is composed of loosely woven cells spread throughout many countries. Structurally, al-Qaeda is similar to DTOs since they both contain transnational network structures characterized by rather flat decision-making systems and both are organized into separate semi-autonomous cells that carry out varieties of the most hazardous activities of the enterprise (Kenny, 2003). Assadi and Lorünser (2008) indicate that al-Qaeda is a network of connected nodes that can be seen as "cells." While the links between these cells are frail to diminish the risk of infiltration, only a few members of cells communicate with other cells (Stern, 2003).

Within the other continuum of network typologies, is the hierarchical network. Hierarchical networks are made up of interdependent individuals in which there is a well-defined rank among participants that differentiates leaders from other members of the criminal network (UNODC, 2018). Hierarchal networks are comparable to the government or military-like organizations, in which illicit actions are prearranged and

permitted by superiors and executed by lower-level operatives who are part of the network (Albanese, 2015; von Lampe, 2016).

Like the flat network topology, the hierarchical framework applies to both TOC groups and armed insurgent groups. For example, Morehouse (2014) explained that the FARC was a hierarchical network. The insurgent group had a bureaucratic composition with a centralized chain of command comprised of a secretariat at the top of the organization, all the way down to tactical combat units, comparable to an archetypal state's military configuration. Similarly, Privette (2006) detailed the hierarchical nature of La Costa Nostra by describing the command relationships of the New York Crime Families, which include a boss at the top of the organization, followed by an underboss, then lieutenants, and soldiers at the bottom of the command structure.

**Defining the Terms**

This section briefly discusses the definition of a High Value Target Strike and how the policy is implemented to combat drug trafficking organizations (DTOs) and armed insurgent groups. The term that US law enforcement formally uses for the targeted arrest of a DTO's leadership is the "kingpin strategy" (Jones, 2013). However, Jones (2016) pointed out that this policy is also known as a "High Value Target Strike." In the realm of counterterrorism, Harris (2014) indicates that this practice, which includes lethal strikes, direct action raids, and cyber operations, is intended to capture or kill oppositional personnel or resources. The term that will be employed throughout this dissertation is "High Value Target Strike."

**High Value Target Strikes on Gang Leaders**

There are few studies specifically analyzing the effects of gang leadership removal. One of these studies was conducted after the Federal Government targeted the Gangster Disciples (GD) gang of Chicago in its operation titled "Headache" in 1993. Knox (2000) analyzed the effects of the arrest of the GD leader and 38 high-ranking members had on the gang and the neighborhood it operated in. Knox (2000) found that after the prosecution of the GD leadership, there was restored public confidence in law enforcement, while there were long-term negative effects for the GD, which included membership discouragement, organizational decline, collateral impact, a deterrent effect, and the possibility that rival gangs may have benefited due to the displacement effect. Similarly, Papachristos (2001) also examined the effect of arresting the GD leadership and had comparable results to Knox (2000) in finding that the GD's organizational structure was debilitated after the widespread arrests. While both studies made a positive contribution to the literature, they did not examine the extent of violence after the gang's leader was arrested within their territory.

To fill the gap of the two aforementioned studies above, Vargas (2014) conducted a comparative case study of the Latin Kings and 22 Boys street gangs in Chicago to analyze the consequences of arresting a gang's leader. This study revealed the arrest of the 22 Boys' leader augmented violence by prompting violent competition among nearby gangs striving to occupy 22 Boys' territory. However, with the arrest of the Latin King's leader, there were no effects on violent crime after the arrest as the gang's prison leaders swiftly assigned new leadership to maintain its daily operations (Vargas, 2014). Like Knox (2000), Vargas (2014) indicates that interventions may have effects beyond the

targeted gang. This is because law enforcement may have a vital role in the social structure of gang violence. For example, policies targeting gang leadership may elicit events of retaliatory violence by disturbing a neighborhood's social order.

**High Value Target Strikes on DTOs**

Several studies have assessed the effect that HVT strikes have on DTOs in Mexico, ranging from case studies (Jones, 2013; Del Rio, 2020) to macro level studies assessing the association of violence and targeted strikes/captures (Dell, 2011; Medel, 2012; Calderon, Robles, Dıaz-Cayeros, & Magaloni, 2015; Phillips, 2015; Atuesta & Ponce, 2017). Some of these studies indicate that a HVT strike can successfully disturb an illicit network by forcing the group to fragment and repurpose (Jones, Dittmann, Wu & Reese, 2018). However, most studies suggest that the fragmentation and repurposing of these groups come with dire consequences that may increase homicides, extortions, and kidnappings. Specifically, homicides may increase after a successful HVT strike against an organization with a recognizable hierarchy because the removal of a leader can incite internal succession fights. This comes as factions and members of the DTO compete against each other to fill the leadership vacuums left by the removal of a leader (Jones, 2013).

In addition to internal succession battles within the organization, it's been observed that homicides also increase as the fragmentation of the illicit networks that suffer a HVT strike leads to an increase in the number of criminal networks (Atuesta and Ponce, 2018). These networks will then wage war with each other in an attempt to gain hegemony over territory and the illicit economies of that area (Calderon, Robles, Diaz-

Cayeros & Magaloni, 2015; Guerrero Gutierrez, 2010, 2011a, 2011b; Jones, 2013, Jones & Cooper, 2011). Similarly, homicides may also increase following a successful HVT strike as rival groups may perceive the group that lost its leader as being vulnerable, therefore initiating attacks from opponents to contest dominance over trafficking routes and territories (Calderon et al., 2015; Moeller & Hesse, 2013; Rasmussen & Benson, 1994). For example, this was observed in 2009 when Mexican security forces successfully carried out an operation that killed the leader of the Guerrero based Beltrán Leyva Organization (BLO), Arturo Beltrán Leyva (Dudley & Young, 2011). Following Arturo's death, the BLO fragmented into different factions, and these factions engaged in violent competition while rival DTOs like La Familia Michoacána took advantage of the situation and went on an offensive to gain control of areas in Guerrero (Kyle, 2015). Guerrero and the BLO will be further discussed in chapter 5.

Similarly, effective HVT strikes in a specific area disrupt the hegemony of dominant organized crime groups, and this instability sparks a substantial increase in both intra-cartel and inter-cartel violence (Atuesta & Ponce 2017). For example, Pereyra (2012) indicates that following the deployment of Mexican security forces to apprehend or assassinate DTO leaders, violence surged as criminal organizations battled each other to fill the power vacuums that ensued (Guerrero Gutierrez, 2011). In a macro level study of Mexico, Calderon et al. (2015) found that the capture of a leader is associated with an average increase of 36.5% in drug-related homicides and a 34% increase in homicides against the rest of the population following the first six months of capture. At the same time, this study found no evidence that the capture of lieutenants is associated with an increase in violence (Calderon et al., 2015) suggesting lower-level member removal may

come with fewer consequences as compared to targeting leaders. Perhaps the greatest contribution made by Calderon et al. (2015) was to demonstrate that HVT strikes which led to the arrest of DTO leaders increased short-term DTO on DTO violence as inter-DTO and intra-DTO disputes ensued from fragmented networks, while also increasing violence among everyday citizens who are not involved in organized crime.

Another country-wide study by Philips (2015) also supports the position that the removal of a leader can cause a criminal group to fragment, leading to new dynamics of violence as fragmented groups fight. This particular study found that the killing or arresting of a leader is associated with a long-term increase in drug-related homicides. This is not surprising, as a case study of the Fernando Sanchez Organization (FSO, previously the Arellano Felix Organization) in Tijuana, revealed how the group repurposed following HVT strikes to its network. With the pressures of previous HVT strikes on its organization and continuing pressure from rivals and government forces, the group repurposed itself by converting its non-violent business operators into enforcers in order to fight the pressure mounted by government forces and rival DTO (Jones et al., 2018).

Likewise, an increase in homicides has been observed when HVT strikes have been implemented with other strategies. For example, a study that employed a time-series analysis to assess the coordinated effort between vigilantes and government forces to successfully apprehend the leader of the Knights Templar Cartel (KT) in the state of Michoacán, concluded that this collective endeavor was associated with the KT's demise (Del Rio, 2020). However, Del Rio (2020) indicates that the fall of the KT also came with consequences. The downfall of the KT was accompanied by a command from the

Mexican government ordering the vigilantes to demobilize and seize operations, which was then followed by a period of increased homicides as DTOs made their way into the region to fill in the vacuum left by KT and the demobilized vigilantes. Similarly, homicides might also increase following a HVT strike because an eliminated leader can be replaced by younger and less experienced members with a propensity towards violence as they take control of the organizations (Felbab-Brown, 2010; 2011). This may be a result of younger lieutenants of removed kingpins needing to display that they have adequate strength to lead the network and safeguard it from rival organizations.

In sum, there are several causal links between HVT strikes and an increase in violence. First, HVT strikes may lead to internal succession fights as leaders of different factions compete to fill the leadership void. Second, fragmentation may follow a HVT strike, leading to the increase of criminal networks that will compete for the criminal activities of a territory. Third, is the perception that a group that lost its leader is in a weak state, therefore prompting attacks from rival groups. Fourth, when eliminated leaders are replaced by younger members, these younger members may have a higher inclination to implement violent tactics. Lastly, HVT strikes have also been linked to other crimes which will be discussed below.

### *Ancillary Crimes*

Now that the consequences related to an increase in homicides have been covered, this section will focus on the increase in kidnappings and extortions following a HVT strike. When DTOs are interrupted through successful HVT strikes, these groups may need to modify their criminal endeavors to continue generating profits (Calderon et al., 2015; Jones, 2018). For instance, when a DTO leader is removed via a HVT strike, the

hierarchy is ravaged, which may leave local criminal cells recognizing that it is too costly to continue their engagement in the long-distance drug trade, which requires the handling of an extensive criminal organization. Therefore, local criminal cells may begin to carry out other illicit activities, such as kidnapping and extortion to maintain the stream of incoming profits (Calderon et al., 2015). Local criminal groups may lack the trafficking links of a DTO leader which would impede the group from preserving a profitable drug trafficking business. For example, Jones (2013) indicates that the capture of several high-ranking leaders of the Arellano Felix Organization (AFO) is associated with the increased number of kidnappings observed in Tijuana during the period under study.

The studies discussed above indicate that HVT strikes against DTOs are associated with the weakening of these organizations by causing these groups to fragment or by disrupting the chain of command within the group. While HVT strikes may lead to fragmentation and violence among these fragmented groups, another line of research has found that the beheading of an organization can also lead to cooperation among rival organizations. For example, one study points out that DTOs form horizontal alliances for three reasons: (1) to gain control of a territory and acquire protection; (2) to bolster factions weakened after fragmentation; and (3) to challenge a common enemy (Atuesta and Pérez-Dávila 2018). Similarly, cooperation can take place as a vertical association between small and big groups as larger groups may accept smaller groups into their ranks (Polo, 1995).

### *High Value Target Strikes versus Military Police Patrols*

One last line of research, specifically one lone study, compared the outcomes of military police patrols with military HVT strikes in Mexico (Pion-Berlin, 2016). The study found that during the patrols, the armed forces were engaging in abuses against civilians as soldiers were aggravated at not being able to locate cartel operators. This led to instances in which soldiers would accuse anyone, forcefully obtaining confessions out of civilians so that they could show results. This highlights the natural difficulties in placing soldiers in the role of police officers. Conversely, in all of the HVT strikes analyzed, there were zero violations by soldiers reported (Pion-Berlin, 2016). Perhaps more important, is the absence of civilian casualties in the 77 HVT strikes which were analyzed and can be attributed to the extensive training and intelligence collection from the military allowing them to focus their efforts on the pinpointed criminal elements alone, saving the residents in the neighborhood from being victimized during the more arbitrary patrolled operations (Pion-berlin, 2016).

The studies discussed above have indicated that the policy of HVT strikes has positive outcomes which include the weakening of these organizations by causing these groups to fragment or disrupt the chain of command within the group. Another pragmatic aspect of this policy is that it is executed with fewer human rights abuses than regular military patrols. However, the aforementioned studies indicate that even when the DTOs are debilitated by HVT strikes, the strikes are followed by the unintentional consequence of increasing violence, chiefly homicides, or cases in which DTOs begin to cooperate with each other to fend off rivals and future attacks from government forces. The theoretical relationship between HVT strikes and violence is explored in chapter 3.

Chapter 3 will analyze the effect that the apprehension of two separate HVT strikes against two organizations present in Tijuana had on cartel-related homicides.

Although the above studies make a great contribution to the research of the HVT strike policy, there are still gaps in the literature. While Jones (2013) conducted a case study on the AFO in Tijuana, this study used qualitative methods and specifically focused on the effects that the apprehension of the leaders of a regional cartel had on kidnappings within Tijuana, not homicides. This is important because no study has employed quantitative methods to analyze the effect that HVT strikes have on a single region. Similarly, though Del Rio's (2020) time series analysis of vigilantism effects found that the capture of the KT's leader was associated with the demise of the KT in Michoacán, however, the analysis focused on the effect that vigilantism in the region had on cartel-related violence, not specifically on the effect of the leader's capture on violence. This presents the opportunity to quantitatively analyze homicide trends in a region while factoring in the effect of HVT strikes on homicides. Similarly, the macro level Mexican studies discussed in this chapter point to an association between HVT strikes and increased homicides in the post-test period, but it is unclear if this is a general pattern for all types of cartels. For example, some cartels operate in different geographic locations (ports, borders, transport hubs, drug production regions, etc.) and this may impact how a cartel responds to such HVT strikes. The study in chapter 3 will attempt to fill these gaps.

### High Value Target Strikes as a Counter Insurgency Tool

The HVT strike approach has also been implemented against armed insurgent groups. Part I of Chapter 4 will assess the effect that HVT strikes against an armed

insurgent group have on terrorism. Therefore, this section will focus on the HVT strike literature pertaining to armed insurgent groups. In the realm of counterinsurgency, many studies have examined the targeted killing of leaders, while some have assessed the decapitation of mid-management and members of groups with important operational roles. Comparably, few studies have assessed the targeted capture of insurgent leaders. There are four viewpoints in this line of research, the positions are that this policy is either efficient, counterproductive, has no distinct effect, or the capture of leaders is more effective than killing. This is why Carvin (2012) points out that many studies investigate different contexts and have different scopes, as well as conceptualize and/or measure their variables differently; therefore, the literature is both challenging to compare and is divided on the claim of whether the assessed tactics are useful.

The first viewpoint to consider is whether the execution of leaders is effective. From this viewpoint, both the execution and apprehension of insurgent leaders can minimize the resources of the targeted group. However, the tactic of killing is understood to have notable supplementary results which amplify its efficacy while decreasing its weaknesses, particularly the threat to one's own forces (Lehrke & Schomaker, 2016). Most notably, killing leaders may deter actions as targeted groups realize the cost of an action (Hafez & Hatfield, 2006). Therefore, the execution of insurgent leaders diminishes the group's resources, while the risk of being killed increases risks and directs organizations to utilize more resources for self-protection, thus disturbing the efforts to train, plan, and carry out attacks.

Several researchers support the notion that the execution of leaders is an effective strategy to debilitate insurgent groups. For example, Johnston (2012) makes several

arguments in support of this viewpoint; first, military operations are more likely to conclude quickly when insurgent leaders are neutralized; second, military forces who kill or capture insurgent leaders are more likely to defeat insurgent groups than those who neglect to kill or capture insurgent leaders; third, the intensity of a battle is likely to be reduced following the removal of an enemy leader; and lastly, insurgent attacks are expected to decrease after the successful removal of a leader when compared to failed attempts to remove leaders. More importantly, HVT strikes have shown to significantly increase the mortality rate of terrorist groups, however, the effect of leadership killings declines with the age of the group, even to the point where it may have no effect at all (Price, 2012). That is, the use of HVT strikes is more likely to significantly affect a new insurgent group than a long-established group. The findings of both studies are moderately supported in more geographically and temporally defined studies. For example, Israeli-targeted killings have devastated enemy terrorist groups and made it challenging for them to operate effectively. However, this is based on the condition that a rapid pace of attacks against the terrorist group is required for it to be effective (Byman, 2006). Additionally, the use of targeted killings by Israel against Palestinian terrorist organizations has been shown to be effective in hindering the success of Palestinian terrorist organizations where leadership, preparation, and tactical skills are limited to a few vital individuals (David, 2002). This is important because there is a limited number of individuals who have the specialized ability to create explosives and coordinate attacks. Therefore, if these individuals are eliminated, the capability of the group to execute attacks is reduced. This is evidenced by the fact that Israel intercepts over 80 percent of suicide bombers and that a significant number of attacks are poorly planned, or

generate little loss of life, suggesting that there are difficulties within the organization, or those members available to carry out attacks (Eistenstadt, 2001).

Israel is not the only middle eastern country to have been assessed and found targeted executions to be effective. Studies in Iraq and Afghanistan have indicated that leadership targeting is successful against poorly institutionalized groups but has limited effects when carried out against well-institutionalized groups (Long 2014; Jordan, 2014). These are important findings as they suggest that this approach is not effective against groups with a hierarchical bureaucratic structure and communal support, such as the FARC in Colombia, which is the focus of the analysis in Chapter 4. Other research has shifted attention away from the structure of the organization and has argued that leadership targeting is most likely to be efficient when the leader is more essential to the organization. After analyzing targeted killings against Aum Shinrikyo in Japan, the Armed Islamic Group of Algeria, and the Shining Path of Peru, Freeman (2010) maintains that targeting leaders is most effective when leaders are operationally and/or inspirationally important. Hence, in determining whether to target the leader of an organization, stakeholders should assess the importance of the leader to the organization, as well questions related to secondary effects and any practical concerns.

The aforementioned studies find that targeted killings as a sole strategy are effective, however, other researchers have suggested that the targeting of top-tier leadership can be a successful component of a larger counterterrorism plan if applied correctly (Lamb & Munsing, 2011; Hepworth, 2014). For example, Frankel (2010) indicates that the targeting of enemy leaders is not effective unless its part of a broader strategy, pointing out that an overreliance on drone strikes can bring setbacks. Frankel

(2010) highlights this problem with the example of U.S. drone strikes in Yemen and Somalia, indicating that even with successful targeted strikes, there was no larger counterinsurgency approach or collection of intelligence. Therefore, it is imperative that targeted strikes not be considered alone from other associated strategies that differ in their scope of application. From HVT strikes, to drone strikes against mid-level and operational members, to on the ground raids—what level of a group is targeted is vital to consider.

The aforesaid studies focused on the targeted killings of organization leaders; however, another line of research has focused on the importance of targeting mid-level managers and operational leaders. For example, in the case of al-Qaeda, the organization's middle management holds the group together. This comes as mid-level managers provide top leadership with the international reach of lower-level members it needs to execute its terrorist campaign, particularly in North America and Europe (Neumann, Evans & Patucci, 2011). Therefore, these mid-level managers are essential in linking leaders to militants who carry out terrorist operations, demonstrating the debilitating effects that neutralizing middle managers can have on a decentralized organization such as al-Qaeda. The targeting of mid-level managers is also said to be successful because attacks following these successful operations have decreased in lethality. For example, the neutralization of a Taliban operational leader saw improvised explosive device (IED) attacks increase, but the success rate of these attacks also decreased (Wilner, 2010). Implying that the strike was associated with an increase in attacks, but a decrease in the quality of the attacks. In another strike against another Taliban operational leader, suicide bombings rates decreased along with their efficiency

(Wilner, 2010). Therefore, the decreasing levels of success and lethality of attacks seem to reveal that the Taliban organization was deteriorating as it was unable to recruit or preserve leaders and experienced organizers. While Wilner (2010) only analyzed the killings of four Taliban operational leaders, others have analyzed the issue while making more observations by centering their efforts on the specific approach of drone strikes. Targeted drone strikes tend to be utilized against middle management and operational assets, particularly as the insurgent group prepares for large attacks (Lehrke & Schomaker, 2016). For example, Lehrke and Schomaker (2016) point out that the highest spike in drone strikes occurred in the fall of 2010, mainly to counter the looming threat of an attack on a Western European target.

The drone strike campaign has been found to be effective against the Taliban and al-Qaeda as the program has disrupted both groups' ability to operate with impunity in an area of Pakistan considered to be a sanctuary for these groups. In particular, Williams (2010) argues that drone strikes against these operational leaders were the most efficient tool for interrupting insurgent and terrorist threats originating from the hard-to-reach sanctuary region. Williams (2010) comes to this conclusion by highlighting that "dozens" (p.887) of operational leaders from both organizations were killed in the six-year period which was analyzed, and more importantly, indicates that the loss of key personnel has disrupted future attacks against the U.S. and allies in Afghanistan. Similarly, Jordán (2014) also found that drone strikes against al-Qaeda reduced the intricacy and deadliness of terrorist attacks, particularly attacks directed against Europe and the United States. Accordingly, targeted killings of this kind can be theorized to decrease sophisticated

attacks, which suggests there will be fewer deaths and attacks further away from the terrorist's core base of operations.

The aforesaid studies postulated that the targeted killing of leaders is an effective tactic to weaken insurgent groups and their operations. However, the second set of studies suggest targeted killings are not only ineffectual but are probably counter-productive. For instance, reducing a group's resources (for example, through targeted killings) is viewed as pushing a group to reorganize, innovate, and collaborate more with other terrorist organizations, therefore killing leaders may simply reinforce the aforementioned tendencies in terrorism (Moghadam, 2013). For example, innovation may be stimulated by problem-solving, mainly as a means to respond to government pressures and/or protective government responses (Dolnik, 2007). Moreover, insurgent leaders executed through a targeted killing approach may become martyrs, which helps a group market itself to its society thus enhancing the group's recruitment ability and inspiring retaliatory attacks (Francisco, 1995; Byman, 2005; Hafez & Hatfield, 2006). Apart from this, targeted killings that are unfair and unfit—those carried out during peace negotiations, a ceasefire, or deemed to be excessive in comparison to the group's actions, as well as more visible—causes backlashes to be more likely. Taking into consideration that current technology amplifies visibility, the negative impact of targeted killings can potentially be greater (Jordan, 2014). Although the study by Williams (2010) mentioned earlier considers reasons why targeted strikes are effective, the same paper also noted that backlash effects may be more severe in faraway areas than in areas where the strike occurred. For example, Jordán (2014) discusses numerous planned attacks against the U.S. mainland partly provoked by drone strikes, while Williams (2010) explains that the

Taliban attack on a Central Intelligence Agency (CIA) base in Afghanistan was in retaliation for a targeted drone killing executed in Pakistan.

Some studies have pointed out that strikes against middle and operational leaders of religious groups are likely to be counterproductive (Jordan, 2009; 2014). Similarly, in a comparison of targeted strikes against several types of terrorist groups, Mannes (2008) indicates that religiously motivated terrorist groups increase the intensity of deadly force significantly when subject to HVT strikes, while also raising doubts about the overall effectiveness of targeted strikes. In a study assessing suicide bombings in Israel, Kaplan and associates (2005) find that the killing of terror suspects inspires recruitment to the targeted group, thus augmenting instead of reducing the rate of suicide bombings. Likewise, Spencer (2006) implies that an increase in the number of attacks is caused by the elimination of leaders, thus making way for younger members, who are inclined to engage in riskier behaviors. The policy proposition of these investigations implies that targeted killings should be merged with a broader counterterrorism strategy against the general group if the decrease in attacks is to be consequential.

The studies discussed above indicate that the targeted killing of insurgent leaders is either effective or counterproductive, we now turn to the viewpoint that the use of targeted capture is a better alternative than targeted killings. One reason for this is that the risk of incarceration may discourage even the most devoted combatant (Lehrke & Schomaker, 2016), for instance, as Gearson (2012) shrewdly explains “death yes, boredom no” (P.185). Advocates of this strategy frequently refer to the famous examples of the Kurdistan Workers’ Party, Red Brigades, and the Shining Path as evidence of the efficiency of specifically arresting leaders (Lehrke & Schomaker, 2016). For example, in

their assessment of targeted capture against the leader of the Shining Path, D'Alessio, and associates (2013) indicate that targeted capture demonstrates some potential as an efficient counterterrorism tactic, particularly for terrorist groups with a hierarchical structure such as the Shining Path.

Additionally, several researchers have indicated that detained individuals may supply intelligence that facilitates subsequent counterterrorism actions that can disrupt terrorist campaigns and decrease their resources for upcoming actions (Kaplan et al., 2005; Byman, 2006; Frankel, 2010). Other researchers have suggested that observing one's colleagues and leaders incarcerated and controlled by the state can cause discouragement within an organization (Cronin, 2006; Hutchinson & O'Malley, 2007). However, there is disagreement on who should be targeted. For example, Cronin (2006) contends that capturing leaders is the more efficient counterterrorism strategy. Conversely, Jordan (2009) indicates that the highest leader should not be targeted; instead, the wider category of high-ranking members should be prioritized as they are the members that provide top leadership with the international reach of lower-level members it needs to execute its terrorist campaign. Similarly, in their study of Israel, Kaplan and associates (2005) found that lower-level captures, not killings, led to a decline in suicide bombings as arrests allow the interrogation of suspected terrorists, which may lead to the detection of contacts to more nodes in the insurgent group.

Though the last perspective of targeted capture is more limited than empirical studies on targeted killings, an even smaller body of literature has concluded that targeted captures may be counterproductive. For example, both Jenkins (1987) and Frankel (2010) suggest that witnessing colleagues incarcerated may encourage a group to participate in

more actions with the purpose of gaining negotiating influence to pressure the state for the liberation of their associates. Likewise, several researchers have emphasized the possibility of radicalization within prisons of younger, minor offenders. Once freed, such offenders strive to participate in an advanced level of terrorist actions (Frankel, 2010; Neumann, 2010; Mulcahy, Merrington & Bell, 2013; Hepworth, 2014).

The studies discussed above inquired into the effect of targeted killings on armed insurgent groups. These studies measured the outcome of different variables and indicated that the policy of targeted killings has yielded both effective and counterproductive results, in some cases varied results (i.e., attacks increase after targeted killings, but attacks become less lethal). Some researchers have found that targeted killings (of leaders or operational and mid-level members) are effective in debilitating a group (David, 2002; Byman, 2006; Williams, 2010; Wilner, 2010; Neumann et al., 2011; Price, 2012; Jordán, 2014), while others specifically found that they are only effective against groups without a bureaucratic structure (Jordan, 2014; Long, 2014), and others have advocated for the use of targeted killings as part of a wider counterterrorism strategy (Frankel, 2010; Lamb & Munsing, 2011; Hepworth, 2014). On the other hand, several researchers found targeted killings to be counterproductive (Kaplan et al., 2005; Hafez & Hatfield, 2006; Spencer, 2006; Moghadam, 2013; Jordan, 2014; Jordán, 2014), specifically with religiously motivated groups (Mannes, 2008; Jordan, 2009; 2014). Lastly, some scholars have found targeted capture to be more efficient than killings (Jenkins, 1987; Frankel, 2010; Neumann, 2010; Mulcahy, Merrington & Bell, 2013; Hepworth, 2014). The theoretical relationship between targeted killings and a backlash

effect is explored in Chapter 4, along with the targeted strikes against insurgent groups in Colombia.

The aforesaid studies have made a significant impact on the literature related to targeted strikes against armed insurgent groups. However, with the varying results from numerous studies, this area of research can benefit from further investigations into the topic. None of the previously mentioned studies have compared the long-term outcomes of targeted strikes against peace-related tactics. The study in Chapter 4 will attempt to fill this gap by analyzing the effect of targeted strikes against the FARC on terrorism and violence, with a subsequent analysis of the effect of the 2016 peace accord between the Colombian government and the FARC on the same independent variables.

**Post-Peace Treaty Literature**

Having reviewed what we know about the effectiveness of HVT strikes on TOC and insurgent groups, this subsection will review the literature related to the second approach to deal with TOC and insurgent groups; peace accords. Specifically, this section will review studies that have analyzed violence and crime in post-conflict societies. Post-conflict studies have assessed many different settings and regions, such as Latin America following the 1987 Nicaraguan peace agreement (Brune and Bossert 2009; Chamorro 2015; Marti Puig 2002, Rodgers 2002; 2013; Rodgers and Jensen 2015), El Salvador after the 1992 Chapultepec Peace Accords (Zinecker, 2007; Hume, 2009; Hume, 2009; Fernandez de Soto, 2017), and Guatemalan after the 1996 peace agreement (Gaviria & Pages, 1999; Londoño & Guerrero, 2000; McNeish and López, 2009; Bueno-Hansen, 2010; Fernandez de Soto, 2017). European countries such as Northern Ireland have also

garnered attention with the signing of the Belfast Agreement of 1988 (Mac Ginty et. al, 2007; Burgess, Ferguson & Hollywood, 2007; Deglow, 2016), and the Balkans after the Dayton Peace Accords (Berdal, Collantes-Celador & Zupcevic Buzadzic, 2003). Asian countries such as Bangladesh have also been assessed following the 1997 Chittagong Hill Tracts Peace Accord (Panday & Jamil, 2009; Amnesty International, 2020), and Indonesia (Barron, 2014). Additionally, African countries such as the Democratic Republic of Congo have also been studied following the Luanda Agreement of 2002 (Autesserre, 2006), along with post-apartheid South Africa (Schuld, 2013), and Southern Sudan following the 2005 Comprehensive Peace Agreement (McMichael, 2014). Other studies have analyzed post-conflict violence from a macro level perspective (Archer & Gartner, 1976; Enders & Sanders, 1999; Collier & Hoefler, 2004). With the extensive selection of post-conflict literature, there are several themes of research linked to an increase, continuation, or decrease in violence following the signing of peace accords. Most of the research related to post-conflict violence explores the causes of violence and types of violence experienced in post-war societies. Moreover, many of the studies that will be discussed employ a qualitative analytical approach, thus leaving out several important conflict regions such as Darfur, Chechnya, and Burma since these sites are not as accessible to researchers as other regions (Mac Ginty, Muldoon, & Ferguson, 2007). The end of civil war does not automatically lead to a decrease in violence, as recent research has shown that post-violent societies occasionally exhibit rates of violence analogous to those in times of civil war (Schuld, 2013). Although combat may cease and even include peace-building plans in place, for countries such as Guatemala, Bangladesh, and Indonesia, research has reported a persistence in crime after the culmination of a civil

war (Panday & Jamil, 2009; Bueno-Hansen, 2010; Barron, 2014) and in the cases of El Salvador, South Africa, and Northern Ireland, an increase in crime (Collier & Hoeffler, 2004, Zinecker, 2007; Deglow, 2016, Schuld, 2013). Types of violence generally associated with post-conflict situations are kidnappings, robberies, domestic violence, sexual abuse, riots, homicides, revenge killings, and gang violence frequently continue (Aguirre 2012; Barron 2014; Peña & Dorussen, 2020).

To begin with, post-conflict societies with social and economic setbacks are prone to a rise or a continuation of the violence experienced during times of conflict. These impediments, along with the presence of criminal groups, have been linked to violence in post-war periods. For example, post-war Nicaragua has experienced a significant surge in urban crime associated with high unemployment, specifically among urban youths, low social levels of social capital, and the presence of drug trafficking routes (Brune and Bossert 2009; Chamorro 2015; Marti Puig 2002, Rodgers 2002; 2013; Rodgers & Jensen 2015). Similarly, the presence of poverty, gangs, organized, crime and clandestine groups, are responsible for the ongoing violence in post-conflict Guatemala (McNeish & López, 2009), whereas post-war crime in El Salvador has been attributed to poverty, youth, connections to U.S. gangs, and broken families (Hume, 2009).

Similarly, when governments experience economic and social hardships in combination with not properly reinstating former insurgent combatants back into society, ex-combatants will find that joining criminal organizations is an attractive option. This was exhibited in both Guatemala and El Salvador as the ineffective implementation of reintegration and reconciliation programs led to the marginalization and barring of particular groups of society (Fernandez de Soto, 2017). More importantly, Fernandez de

Soto (2017) highlights that the absence of a strong social fabric, shortage of opportunities, easy accessibility to weapons, and the presence of a feeble economy and institutions, make the pathway to enlisting in criminal organizations or engaging in criminal acts, an appealing one. Suggesting that economic opportunities and investing in social capital may present a post-war society, especially ex-combatants, with the view of joining a criminal network as less appealing as these citizens may gain the opportunity to participate in the legitimate labor force.

Conversely, post-war societies with robust economies and trust in government institutions appear to experience a decline in violence. For instance, since the Belfast Agreement of 1988, Northern Ireland has witnessed its levels of violence decrease, along with the growth of the local economy, a reduction in security, and an increase in public confidence (Mac Ginty et al., 2007). Therefore, signifying that in addition to focusing on economic opportunities and investments in social capital, post-conflict governments need to invest resources to boost public confidence. However, lack of economic opportunities and social capital are not always elements that lead to violence in post-war societies. For example, in the case of Indonesia, it's been argued, that post-conflict violence is not directly or definitively created by weak state institutions, poverty, or broken social relations (Barron, 2014). Additionally, Barron (2014) indicates that violence is used by different groups to influence decisions on the distribution of power and resources, therefore, groups use violence principally for purposes of accumulating political influence. While groups will support the use of violence if the expected benefits of that violence outweigh nonviolence.

Another line of research has focused on the nature of increased or continued

violence in post-conflict societies. An evaluation of post-war El Salvador found El Salvador to have the highest levels of violence in Latin America, in which the violence was almost entirely identified as criminal in nature, rather than political (Zinecker, 2007). Similarly, an investigation conducted in San Salvador, the capital of El Salvador, found that the sense of order was changed by a new discourse, a phenomenon which the author terms as "code-switching" (Moodie, 2011, p.59). Moodie (2011) indicates that before the peace accords were signed there were two leading narratives about violence. One narrative in which the government disseminated the National Security policy's account that the state was being assaulted by unreasonable communist groups, in which militarization and human rights abuses were justified. And the other narrative was characterized by the left in which all violence was labeled as politically driven by the government, in which the human rights of innocent civilians were being violated as they demanded political and economic opportunity. Therefore, before the peace accord was signed, both narratives indicated that violence was constantly political and justified against the struggle with the rival political group. However, similar to Zinnecker's (2007) findings, Moodie (2011) indicates that after the peace accords were signed, crime came to be characterized by the government and media as individual and random acts which were not associated with political or social conditions. Other research has suggested that violence perpetrated by the Salvadorian government during the war was validated in the name of national security, while the hard-line policies to combat violence after the war were in the name of protecting citizens from delinquency (Hume, 2009). Although the signing of the peace accords may have brought the Salvadorian civil war to an official end, some have suggested that no tangible change has taken place regarding violence.

Accordingly, England (2012) explains that for many citizens within El Salvador, “things are just as bad or worse than the war” (p. 250).

The change in the characterization of the continued or increased crime as shifting in label from political to criminal is not limited to the Salvadorian or Latin American post-war experience. For example, in the case of the post-apartheid South African province of KwaZulu-Natal, the specific types and patterns of violence observed during the era of political conflict did not conclude with apartheid; what did change is the label given to that violence as it was considered to be “political violence” (p. 62) prior to the 1994 elections and then “ordinary violence” (p.60) once the conflict was resolved (Schuld, 2013). Related to the characterization of post-war crime is research inquiring on the characteristics of violence before and during the peace period. An examination of violence against women in Guatemala indicates that even though the war officially came to an end, the remains of women found dead after the war displayed the features of many of the same forms of violence and torture during wartime (Bueno-Hansen, 2010). Therefore, directing the women’s groups interviewed in the study to draw a direct association between forms of violence acquired during the war and those enacted during peacetime. This emphasizes the importance of measuring homicides in Colombia before and after the peace accord. First, to determine if violence has increased, continued, or decreased. Second, to characterize and compare violence before and after the peace accord. Lastly, to determine if there is any association between forms of violence acquired during the war and those enacted during peacetime as observed in the Bueno-Hansen (2010) study.

Furthermore, other studies have analyzed post-war regions in which insurgent groups continue to be active. These studies suggest that if these insurgent groups continue to have grievances against the government they went into a peace accord with, then violence will ensue. For example, following the 1997 Chittagong Hill Tracts Peace Accord between the Bangladeshi Government and the Parbatya Chattagram Jana Saghati Samiti (United People's Party of the Chittagong Hill Tracts), violence persisted after the signing of the Peace Accord because (1) there continued to be confrontations between insurgents and government security forces, and (2) because of human rights violations committed by Bengali settlers and law enforcement agencies against the indigenous people of the Chittagong Hill Tracts area (Panday & Jamil, 2009). Insurgent groups may continue to have grievances against the government if such government has not adequately implemented the reforms outlined in the peace accord. Specifically, Amnesty International (2020) has expressed concern over the sluggish pace of the Bengali's implementation of the peace accord and points out that in 2013, the organization produced a comprehensive report on how the assurances for the reforms concerning the regional autonomy and the economic, cultural, civil, social, and political rights of the indigenous people in the Chittagong Hill Tracts region continued to be unsatisfied. This particular report from Amnesty International (2020) once again brings to light the importance for a government to carry out the agreements outlined in a peace accord, in addition to ensuring economic opportunity and social capital in order to increase the possibility for the society to transition into a peaceful post-conflict society. This is evident in cases where insurgents have not been demobilized and are ready to confront

these grievances by combatting government forces, as in the case of Bangladesh (Panday & Jamil, 2009).

Likewise, post-war regions in which insurgent groups are still active while illegal economic resources are available will experience a continuation of violence as insurgent groups compete against each other for hegemony over illicit economies. In three eastern provinces of the Democratic Republic of Congo during the transition from war to peace between 2003 and 2006, violence continued as armed insurgent groups such as the Democratic Forces for the Liberation of Rwanda (FDLR) and the Rally for Congolese Democracy – Goma (RCD-G) continued their involvement in illegal mining (Autesserre, 2006). Similarly, this same study found that the continued presence of rebel groups such as the RCD-G in the east allowed for conflicts to persist between the armed insurgent groups and government forces. This is of grave importance in Colombia following the signing of the Peace Accord with the FARC as there are still many active DTOs and insurgent groups within the country, such as the National Liberation Army (ELN), the Popular Liberation Army (EPL), and the Gulf Clan (Colombia Reports, 2020).

Another line of research has assessed post-conflict regions with diverse ethnic groups. In some cases, post-war societies have experienced violence along ethnic lines while others have managed relative peace in a diverse society. To begin with, in post-war Juba, Southern Sudan after the 2005 Comprehensive Peace Agreement, internally displaced people, refugees, and ex-soldiers returned to Juba and put pressure on growing informal settlements in the city leading to injustices among ethnic lines (McMichael, 2014). In particular, land violence, which took the form of threats, gun violence, physical violence, and sexual violence became an instrument to access land by soldiers who acted

with immunity inside these settlements (McMichael, 2014). This particular case in Juba brings to light the importance of third-party observers during the transition to peace for post-war societies, as these third parties may be more effective in deterring potential wrongdoers from committing violence as is observed in the following case. Following the Dayton Peace Accords in Bosnia and Herzegovina, violence was a considerable part of the early post-war setting, seeing that the Peace Accord was followed by more than three years of civil war amongst the Serb, Croat, and Bosniak populations within the country (Berdal, Collantes-Celador, & Zupcevic Buzadzic, 2003). However, these researchers indicate that the general situation nevertheless compares positively to other cases of war-to-peace transitions where civil wars were also formally ended through a negotiated resolution, and levels of explicit physical violence in post-war Bosnia were relatively low for two reasons. First, each ethnic group had independent control over its own territory. Secondly, and perhaps most importantly, unlike in Juba, South Sudan, there was a large-scale international military and police presence providing the conditions to prevent the setback of ethnic division, thus allowing for the preservation of stability in the post-war setting (Berdal et al., 2003).

One researcher has focused on comparing violence within areas that previously experienced conflict. This research has indicated that areas that exhibited more violence during the time of war will continue to exhibit violent crime at higher levels in the post-war setting than areas where the conflict did not take place. Specifically, an analysis of post-war violent crime in Northern Ireland found that the more violence an area experiences during a conflict along with the greater the proportion of violence perpetrated by anti-government groups, the more violent crime such areas will experience once the

war has come to an end (Deglow, 2016). Consequently, and according to Deglow (2016), anti-government groups can exhibit certain targeting patterns which may reduce the legitimacy of law enforcement agencies required to prevent violent crime in a post-war arena. These findings suggest that post-war governments need to focus their resources and efforts more aggressively in the areas which exhibited violence during the conflict.

The last line of research has linked post-conflict societies with an increase in homicides from a macro level perspective. For example, in a comparison of countries that exhibited wars compared to countries that did not, Archer and Gartner (1976) found that most of the countries that experienced war exhibited a considerable post-war surge in their homicide rates, with particular consistency among countries with a substantial number of combat deaths. Similarly, in a comparison of 31 countries, Collier and Hoefler (2004) specify that civil wars temporarily increase homicide rates. Signifying that the violence experienced during times of war is a long-term reality that post-war societies need to address.

The abovementioned studies indicate that violence has persisted or even increased in post-conflict arenas throughout several regions around the world (Brune and Bossert 2009; Chamorro 2015; Marti Puig 2002, Rodgers 2002; 2013; Rodgers and Jensen 2015; Zinecker, 2007; Guatemala Gaviria & Pages, 1999; Londoño & Guerrero, 2000; Bueno-Hansen, 2010; McNeish & López, 2009; Berdal, et al., 2003; Deglow, 2016; Panday & Jamil, 2009; Barron, 2014; Autesserre, 2006; Schuld, 2013; McMichael, 2014). Although none of these studies reviewed the post-conflict literature of Colombia (the focus of Study 2 of this dissertation), these studies make a noteworthy contribution to the literature, specifically by focusing on particular regions and identifying the underlying

factors related to the increase, continuation, or decrease in violence in post-war societies. Chapter 4 will specifically review the post-conflict literature related to Colombia. Most importantly, none of the studies presented in this section, or the ones that will be presented in chapter 4 have assessed post-conflict violence in Colombia after the peace accord was signed with the FARC in 2016. Perhaps, because the peace accord was reached a short time ago. Nevertheless, enough time has passed to assess violence after the 2016 peace accord was reached. Chapter 4 will fill this gap in the literature by assessing and comparing levels of terrorism and violence within Colombia before and after the 2016 peace accords were reached.

**Themes Related to Vigilantism**

The literature addressing the first approach (HVT strikes) and the second approach to deal with TOC and insurgent groups (peace accords) has now been covered in the two subsections above. This subsection will review the literature related to the third approach to deal with TOC groups; vigilantism. Vigilantism has been recently undertaken in several regions of Mexico as a tactic to combat TOC groups. Chapter 5 will analyze the effects of vigilante style groups on cartel-related violence. The vigilante phenomenon is not limited to Mexico and has been studied in many contexts and throughout various regions, such as Africa (Fleisher, 2000; Harris, 2001; Anderson, 2002; Baker, 2002; Sekhonyane, & Louw, 2002; Adinkrah, 2005; Plyler, 2007; Smith, 2007; Burr, 2008; Pratten, 2008; Tankebe, 2009; Smith, 2015), Asia (Sundar, 2010; Tyson, 2013; Gazit, 2015; Bakker, 2016), Latin America (Rosenbaum & Sederberg, 1974; Huggins, 2000; Ungar, 2007; Zizumbo-Colunga, 2010; Nivette, 2016; Osorio et al., 2016; Del Rio, 2020), North America (Rosenbaum and Sederberg, 1976) and the web (e Silva, 2018).

With the wide array of research on vigilantism, there are numerous themes of research linked to the topic.

To begin with, the development of this phenomenon is commonly justified by the existence of high crime rates and weak governments (Philips, 2017). For example, Baker (2004) points out that in Africa, the combination of the perceptions of a deteriorating state police and growing crime produced a condition where a significant amount of non-state policing groups have surfaced. Accordingly, Silke (2001) indicates that vigilantism is related to the opinion that there is a considerable problem with deviancy. In his study of vigilantism in Kenya, Anderson (2002) found that the increased occurrence of vigilante groups is associated with the strive for political hegemony and more relevantly, the development of criminal undertakings, principally extortion.

Likewise, in his study of Ghana, Adinkrah (2005) found several factors to be associated with the development of vigilantism: a weak rapport between civilians and police, a growing rate of crime, an escalated public concern regarding crime, a sluggish and congested judicial system, an under-funded police force, and a collapse in established ways to solve disagreements. In a post-apartheid South Africa, Martin (2012) suggests that the poverty and disorder which was produced by apartheid not being dealt with in the two decades after the democratic transition is associated to the rise of vigilantes as one of the rare alternatives for security. In the American context, Rosenbaum and Sederberg (1976) specify that vigilante activity is a result of the concern that is generated by the nature and repetition of criminal behavior and an absence of confidence in traditional institutions, indicating that in New York City, police precincts which displayed the greatest crime rates were also subjected to vigilante activity.

Secondly, several authors have inquired into the relationship among public support and vigilantism. In a historical analysis of vigilantism in America, Brown (1969) explains that vigilantism draws support from areas with a high risk of victimization. Moreover, in his study of the Guardian Angels (GAs) vigilante group in Toledo, Ohio, United States, Perry (1984) found that in neighborhoods with high crime, men were more supportive than women of the GAs, while low-income citizens were also slightly more supportive than high-income citizens. In Ghana, Tankebe (2009) observed that public support for vigilantism is associated with the community's view towards the integrity of the police; indicating that individuals who thought the police were not trustworthy were more likely to support vigilantism than individuals who believed the police were trustworthy. Likewise, in Mexico, citizens who do not have faith in local government institutions are likelier to express support for vigilantism (Rojo Mendoza, 2015; Zizumbo Colunga, 2015). Comparably, in her review of vigilantism in 18 Latin American countries, Nivette (2016) found that punitive mindsets, personal victimization, and institutional illegitimacy are the greatest predictors for support of violent vigilantism. Regarding participation in vigilantism, Abrahams (1998) has indicated that with few exceptions, vigilantism is usually undertaken by males.

Another line of research has investigated the use of violence by vigilantes and the influence it has on crime. Several authors point out that vigilante groups have consistently been accountable for serious human rights violations, and their acts can lead to revengeful intensifications of violence (Abrahams, 1987; Conway, 2004; Romero, 2003; Phillips, 2017). Accordingly, in her report of South Africa's transition from apartheid to democracy, Harris (2001) found that vigilantes often engaged in retributive

justice, in which vigilantes operated in the public domain applying the use and threat of aggression for threats and justice. In a case study analyzing the effect that the Mapago vigilante group in a northern province of South Africa had on crime, Sekhonyane and Louw (2002) uncovered mixed results. The researchers indicated that violent crime rose during the period of inquiry, particularly incident assault, common assault, grievous bodily harm and rape, although murder and attempted murder declined. Moreover, robbery declined over time, while incidents of property crime grew. Likewise, an ethnography conducted by Smith (2015) revealed an association between the rights provided by South Africa to the validation on growing assaults on alleged criminals by the Mapago vigilante group. In Tanzania however, Plyler (2007) found that the presence of vigilantes and their acts is associated with an effective decrease in crime in some of the regions where they operate.

Additionally, Tyson (2013) analyzed Muslim vigilante groups in Lombok, Indonesia, indicating that violence by Muslim vigilantes is associated with the spiritual growth of Hindus, and a strained relationship with other groups. Additional inquiry within Indonesia by Bakker (2016) reveals that the technique of some vigilantes' groups is not necessarily the employment of violence, rather it is to exhibit the capacity to execute acts of violence in establishing themselves as representatives of the local society. Other researchers have analyzed the relationship between governments and vigilante groups. For example, Bowden (1978) documented the concept of "state vigilantism" with incidents of vigilante death squads, which have frequently been composed of government employees. These vigilante groups include off-duty police officers, which has left others doubtful as these unofficial government groups engage in violence while disguising

themselves as a grass-roots crime control program (Abrahams, 1988).

The studies considered above investigated several topics within the domain of the vigilantism phenomenon. Numerous inquiries, from several diverse regions revealed many different factors related to the development of vigilante groups. Although, the one common underlying factor among these studies is the association of vigilantism and high levels of crime (Rosenbaum & Sederberg; 1976; Silke, 2001; Anderson, 2002; Baker, 2004; Adinkrah, 2005; Martin, 2012; Philips, 2017). Similarly, another set of studies found that support for vigilante groups usually comes from areas where the population has minimal trust in its police force and other state institutions (Tankebe, 2009; Rojo Mendoza, 2015; Zizumbo Colunga, 2015; Nivette, 2016). Perhaps more important, some researchers investigated the effect that vigilantes had on crime, with several studies indicating that the presence of vigilante groups and their actions increase levels of crime (Abrahams, 1987; Conway, 2004; Romero, 2003; Phillips, 2017). Conversely, Plyler (2007) found that the presence of vigilante groups and their actions decrease crime, while Sekhonyane and Louw (2002) had mixed findings indicating that some crimes increase while others decrease with the presence of vigilantes. The relationship between vigilante presence in Mexico and its effect on crime will be explored in Chapter 5.

The abovementioned studies bring to light important findings related to vigilantism. Nevertheless, with the mixed results from the numerous studies on the effect of vigilantism on crime, it is unclear whether vigilantism improves the safety of local inhabitants. Related, two recent studies by Osorio et al. (2016) and Del Rio (2020) analyzed the effect that vigilantes have on crime within the context of Michoacán, Mexico. Both studies came to different conclusions on crime levels and will be discussed

in greater depth in Chapter 5. The study in Chapter 5 will contribute to the literature within Mexico by integrating a timeseries design with crime mapping techniques which were not previously employed by the Osorio et al. (2016) or Del Rio (2020) studies.

## Conclusion

This chapter explored the relevant research on the implementation of HVT strikes, post-conflict violence, and vigilantism. The chapter began by presenting an overview of the results and consequences of applying HVT strikes on street gangs, TOC groups, and armed insurgent groups. This section revealed that while HVT strikes against DTOs may debilitate the network, unintended consequences such as an increase in violent crimes follow the successful strike. Similarly, in discussing the use of HVT strikes against insurgent groups. It was revealed that there is much debate concluding whether the approach is effective, ineffective, or counter-productive. Moreover, debate persists on whether strikes against mid-level managers are a better approach than strikes against leaders, while several researchers have advocated for the use of targeted capture than targeted strikes. Then, a section followed with several case studies in different countries around the world that have experienced post-conflict violence, and the factors related to the continuing or increased violence. Factors related to an increase or continuation in violence in post-conflict societies include poverty, high unemployment, weak social capital, failed implementation of reintegration, the presence of criminal networks, and the continued presence of insurgent groups. The last section reviewed elements related to vigilantism and the link between vigilantism and crime. This review found an association between the emergence of vigilantism and high levels of crime. More importantly, this section uncovered that there is a dispute about whether the presence of vigilante groups

and their actions increase or reduce crime.

This review found several significant gaps in the research related to the three underlying themes/policies (HVT strikes, post-conflict/post-peace accord violence, & vigilantism). Specifically, previous research has assessed the link between violence and HVT strikes against TOC groups from a macro level, which is a serious limitation as the findings of macro level studies cannot always be applied to specific areas. Moreover, no study has yet to assess this link at an individual level (i.e., specific city) with a HVT strike against the leader of two different groups. Similarly, prior research has assessed the association of targeted strikes against insurgent groups and the group's subsequent ability to continue carrying out attacks, and the propensity of those attacks. Previous research has also investigated trends of violence in post-war societies (after the signing of a peace accord). On the other hand, no study has yet to assess and contrast violent outcomes by comparing the policy of targeted strikes with the policy of a formal peace accord. For this reason, Chapter 4 will examine terrorism incidents and their lethality following the implementation of HVT strikes against the FARC. This same chapter will similarly examine terrorism incidents, their lethality, and homicides following the 2016 Peace Accord between the FARC and the Colombian government. Likewise, prior research has also assessed the effect that vigilantism has on cartel-related violence in Mexico, with differing results. In Chapter 5, the effect that vigilantism has on cartel-related homicides will be analyzed. Thus, this dissertation seeks to expand the literature on these three fundamental approaches/topics (HVT strikes, peace accords, and vigilantism). To fill this gap in the literature, Chapters 3, 4, & 5 will attempt to individually investigate these three

tactics to assess which of these policies is best to combat TOC groups and armed insurgents.

# CHAPTER 3

## Do High Value Target strikes reduce cartel-related violence?

This chapter will assess the first approach in combatting Transnational Organized Crime (TOC) groups, the use of High Value Target (HVT) strikes. Specifically, the implementation of this approach against Drug Trafficking Organizations (DTOs). While Chapter 2 explained that this approach has been used in counter-terrorism operations and to combat DTOs, it is important to point out the prevalence of the implementation of this tool to combat DTOs. For example, in October 2021, the Mexican government executed several successful HVT strikes that saw the targets of this approach either get killed or arrested. In the first case, one of the Sinaloa Cartel's top operatives was captured by the Mexican military after a shootout (El Paso Times, 2021). In another case, authorities apprehended the leader of the Santa Rosa de Lima Cartel (SRL), known as "El Panther" in the state of Guanajuato (Mexico News Daily, 2021). This comes as another blow to the SRL Cartel as El Panther's predecessor was apprehended in April 2020 (Sieff, 2020). In the third example of a HVT strike being employed in October 2021, the Mexican army killed one of the Gulf Cartel's Plaza bosses in Matamoros, Tamaulipas.

Mexican authorities are not alone in recently implementing this approach against a DTO. This comes as Colombian security forces similarly captured the country's most-wanted drug kingpin in October 2021 after evading authorities for over a decade (NPR, 2021). Thus, the widespread use of this approach underscores the importance of undertaking this study. Similarly, as seen with the capture of the two SRL Cartel leaders in an 18-month span, it is important to evaluate the effect that arresting or killing a DTO leader has on the DTO. At the same time, chapter 2 highlighted several studies that have

linked the use of a HVT strike to an increase in violence. As a result, this study will 1) analyze the effect that HVT strikes have on cartel-related violence and 2) assess the effect that HVT strikes have on DTOs.

To date, researchers have analyzed both the positive and negative effects of HVT strikes against DTOs. However, policymakers have only seemingly focused on the positive outcomes while generally ignoring the negative consequences of this policy. This study is not a persuasion against the implementation of HVT strikes, instead, it is a balanced examination of HVT strikes to further comprehend the positive and negative outcomes linked with this approach. As a result, this study makes an important contribution to the literature for several reasons. First, most studies that have analyzed the effect that HVT strikes have on violence have been employed from a macro level perspective (Atuesta & Perez-Davila, 2018; Calderón, Robles, Diaz-Cayeros & Magaloni, 2015; Phillips, 2015) which might miss violence dynamics at a more micro-level. Secondly, and related, only one micro level study has been published on the topic and was limited to a qualitative methodology (Jones, 2013). This study is significant because it will provide a comprehensive outlook of the long-term effects of HVT strikes at the microlevel, as the study will analyze the effects that two HVT strikes against two different DTOs have on cartel-related homicides in Tijuana, Mexico using quantitative methods. The unique nature of Tijuana's geographic location makes this analysis crucial to the literature. This is because Tijuana's position makes it an important transit point for illicit drug smuggling and transnational organized crime (Sánchez Lira; Orozco; Ferreira, & Shirk, 2018). Tijuana's position on the U.S – Mexico border makes it difficult to generalize the results of the previously mentioned macro level studies to this border city.

## Chapter Overview

This chapter specifically analyzes the effect that HVT strikes have on cartel-related homicides. What follows is a brief recap of the literature on HVT strikes against DTOs discussed in Chapter 2. Then the following section includes a theoretical discussion on the link between HVT strikes and violence. The theory section is then followed by the following sections: methods, variables, findings, a discussion on the findings, and a conclusion.

## High Value Target Strikes Against DTOs

This section will recap the studies that were discussed in Chapter 2 related to this particular topic. The studies discussed in Chapter 2 indicated that the HVT strike approach has positive outcomes which include the weakening of DTOs by causing the groups to fragment or by disrupting the chain of command within the group. Another pragmatic aspect of this tactic is that it is executed with fewer human rights abuses than regular military patrols. However, the studies reviewed in Chapter 2 indicate that even when DTOs are debilitated by HVT strikes, the strikes are followed by the unintentional consequence of increasing violence, chiefly homicides, or cases in which DTOs begin to cooperate with each other in order to fend off rivals and future attacks from government forces.

Although the above studies discussed in Chapter 2 are a great contribution to the literature on the HVT strike approach, there remains several gaps in the literature. First, the macro level studies examined in Chapter 2 point to a link between HVT strikes and increased homicides. However, macro level studies need to be supplemented by studies at an individual level as the findings from large-scale studies may not be generalizable to

areas with distinct geographic features. Cities with distinctive geographic characteristics include a port city, border city, transport hub, and a drug production region. Thus, making the border city of Tijuana the perfect case to be studied. Secondly, the only microlevel analysis on HVT strikes in Tijuana employed qualitative methods to link the apprehension of the leaders of the AFO with an increase in kidnapping and homicides (Jones, 2013). Similarly, the study period of the aforementioned study was conducted while the AFO was the chief DTO in Tijuana and its surrounding area. With this in mind, there is a need to analyze the effect of a HVT strike in Tijuana against a regional group like the AFO and a DTO with a more largescale presence throughout Mexico, such as the Sinaloa Cartel.

Another shortcoming in the literature is observed in the analysis by Jones et al. (2018) of the Fernando Sanchez Organization (FSO), the authors briefly discussed El Ingeniero's capture in 2014 and speculated on the possible reasons why violence escalated after his capture. However, the authors did not link that rise in violence to any theoretical explanations that explain why violence increases after the successful implementation of a HVT strike. Nor did the study employ a statistical analysis on homicides before and after the HVT strike was undertaken as that was not the purpose of their study. Therefore, the purpose of this study is to fill those gaps by employing quantitative methods at the microlevel to analyze the effect that two separate HVT strikes has on cartel-related violence, the first strike that will be assessed is the capture of the leader of a regional DTO (AFO) while the second strike to be analyzed is the capture of the leader of a DTO with presence throughout many parts of Mexico (Sinaloa cartel). This study will clarify if findings of previous qualitative microlevel studies (Jones, 2013)

were limited to that period and type of DTO targeted, or part of a broader pattern that Tijuana experienced after two HVT strikes.

**Linking HVT Strikes to Violence**

A noteworthy number of studies have linked the implementation of HVT strikes with an increase in violence through various explanations (see Figure 3.1). The removal of a HVT, either by killing or capture is related to an increase in violence for several reasons. First, a leader who has been eliminated can be replaced by younger and less experienced members with an inclination towards violence as they take control of the organizations (Felbab-Brown, 2010; 2011). For example, Felbab-Brown (2010) indicates that young "narcojuniors" and lieutenants of the removed capos may need to demonstrate that they have sufficient power to control the organization and defend it from outside groups.

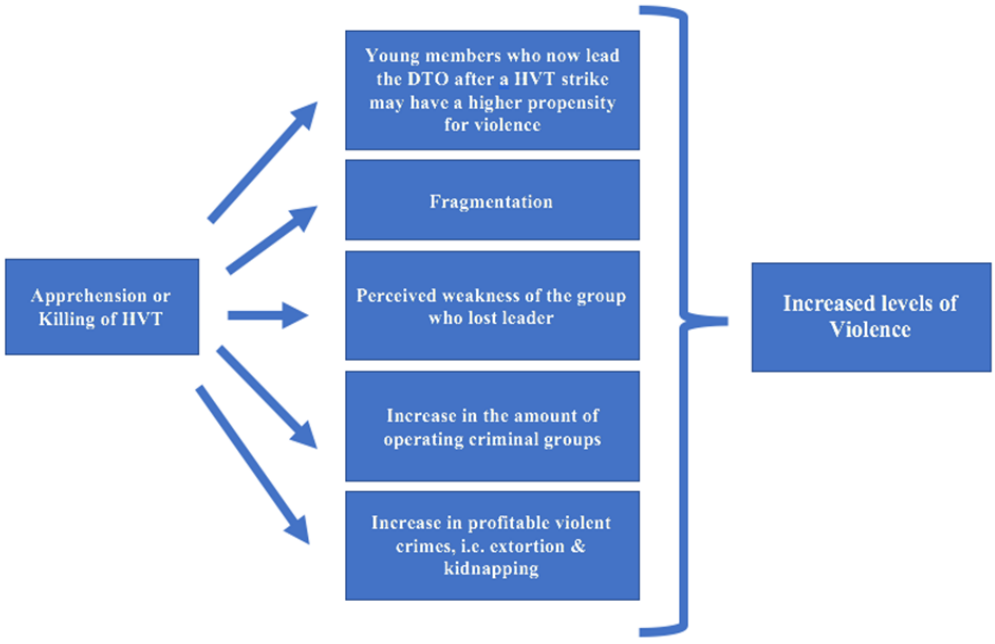


**Figure 3.1:** Sequence of possible outcomes related to the implementation of High Value Target Strikes.

Second, the successful application of a HVT strike can lead to fragmentation which may lead to violence as splintered groups compete against each other. Studies by Phillips (2015) and Atuesta and Ponce (2017) explain that when law enforcement takes down a criminal organization's management through elimination or arrest, divisions are triggered from within the organizations. This division thus intensifies violence amid criminal groups as fractured groups participate in intense succession skirmishes (Calderon, Robles, Diaz-Cayeros & Magaloni, 2015; Guerrero Gutierrez, 2010, 2011a, 2011b; Jones, 2013, Jones & Cooper, 2011). This has become the norm amongst the many targeted DTOs as violence escalates after the apprehension of essential leaders (Guerrero Gutierrez, 2010; Jones 2011a; Jones 2011b).

The third reason that HVT strikes are associated with violence is because of the perceived vulnerability of the group that lost its leader, therefore sparking an assault by another group to dispute hegemony over trafficking routes and territories (Calderon et al., 2015; Moeller & Hesse, 2013; Rasmussen & Benson, 1994). Atuesta & Ponce (2017) maintain that HVT strikes in a specific area disrupts the status quo of organized crime, and this instability sparks a substantial increase in both intra-cartel and inter-cartel violence. Thus, it seems that the removal of a DTO leader is an invitation for a rival DTO to make its way into the scene and challenge the group that lost its leader

Fourth, the application of confrontational enforcement strategies such as HVT strikes expands the number of operating criminal groups, and thus affects the intensity of violence among these groups (Atuesta & Ponce, 2018). This is an outcome of other groups emerging into an area with illicit markets with the goal of establishing control over an area that may no longer be under the hegemony of a particular DTO. Another

reason that HVT strikes are linked to an increase in violence is due to what Jones and colleagues (2018) described as the "diversification of criminal activities" (p. 3). Similarly, Calderon et al. (2015) explain that strategies such as the HVT strike policy have interrupted DTOs, leading these groups to diversify their criminal portfolio. For instance, when a DTO leader is removed by apprehension or killing, the hierarchy is ruined, which may leave local criminal cells in the realization that it is too costly to maintain their involvement in the long-distance drug trade, which involves the handling of an expansive criminal network. As a result, local criminal cells may commence performing other criminal activities, such as kidnapping and extortion to maintain the stream of incoming profits (Calderon et al., 2015).

Related to the previous reason, Jones (2013) explains that as groups are weakened by the removal of their leader they may become profit-starved, Kenney (2007) explains that this may be due to a deficiency in trafficking links which would hinder the group from maintaining a highly profitable drug trafficking business. The AFO, for example, was weakened by several successful HVT strikes leading to a rise in kidnappings and extortions in Tijuana (Medel, 2012; Jones 2013). Therefore, as high-ranking leaders with important occupational connections are arrested remaining members of the group may turn to alternate criminal opportunities to generate revenue.

In sum, several studies have successfully linked the implementation of HVT strikes with an increase in violence, chiefly homicides, for numerous explanations (Dell, 2011; Guerrero Gutierrez, 2011a, 2011b; Osorio; 2015; Espinosa & Rubin, 2015; Phillips, 2015). Younger members who step in to lead a DTO after the loss of its leader may have a higher propensity for violence (Felbab-Brown, 2010; 2011). A power vacuum

may follow a HVT strike, leading to splintering within the group who lost its leader (Guerrero Gutierrez, 2010; 2011a; 2011b; Jones & Cooper, 2011; Jones, 2013; Calderon et al., 2015; Phillips, 2015; Atuesta, 2017). Rival groups may perceive that the group who lost its leader may become weaker, therefore sparking an attack from competitors to challenge for territory (Rasmussen & Benson, 1994; Guerrero Gutierrez, 2011; Pereyra, 2012; Moeller & Hesse, 2013; Calderon et al. 2015; Atuesta & Ponce, 2017). Other studies have also found that the removal of HVTs may interrupt a group's trafficking network, therefore, increasing violent crimes, like extortion and kidnapping, to offset for the loss in trafficking proceeds (Kenney, 2007; Medel, 2012; Jones, 2013; Calderon et al., 2015). Generally, these studies display a common outcome when government forces remove HVTs from a DTO. However, none of the aforementioned studies have analyzed the influence that HVT strikes have on violence in a specific area when various strikes are implemented against different DTOs. Consequently, the purpose of this study is to evaluate the effect of HVT strikes on cartel-related homicides in one geographic area—Tijuana, Mexico.

**Tijuana, the Arellano Felix Organization and other DTOs**

Located at the most western point of the U.S. – Mexico border, Tijuana is the largest Mexican city on the border (Sánchez Lira, Rodríguez Ferreira & Shirk, 2018). The city has a successful manufacturing economy, therefore making it critical for the lively cross-border region known as "Cali-Baja," one study estimated that the area accounts for 40% of all audio-visual manufacturing in North America (Region, 2014). However, because of its geographic situation, Tijuana has become one of the most strategically important Mexican border cities for trafficking drugs into the United States (Insight

Crime, 2018a). Historically, Tijuana is a significant transportation point for illicit drug trafficking and transnational organized crime that dates back to the smuggling of alcohol during prohibition, followed by marijuana and heroin (Sánchez Lira et al., 2018). This has allowed for the proliferation of robust local cross-border organized crime networks in the region.

For almost two decades, Tijuana was ruled by the AFO (Dudley, 2011). The origins of the AFO began when the leader of the Guadalajara Cartel, Miguel Ángel Félix Gallardo was arrested in 1989 for the murder of DEA Special Agent Enrique "Kiki" Camarena, prompting him to divide most of Mexico and give out areas to his subordinates, in order to thwart a breakup of the organization he had created (Corcoran, 2013). From prison, Miguel Ángel Félix Gallardo handed territorial monopoly over Tijuana to his nephews, the Arellano Felix brothers (Beittel, 2020).

The AFO (sometimes referred to as the Tijuana Cartel) was considered one of, if not, the most prominent Mexican DTO at its height in the 1990s (Blancornelas, 2002). The AFO has been described as a regional "tollgate" organization that has historically managed the drug smuggling between Baja California and California (Bailey, 2014). The Mexican government and U.S. authorities undertook strong enforcement action versus the AFO in the early 2000s by arresting and killing the five Arellano brothers implicated in the drug trade, with Eduardo Arellano Felix being the last brother apprehended in 2008 (Beittel, 2020). Following Eduardo's arrest, the AFO fragmented into two rival factions, one side led by Eduardo's nephew, Fernando Sanchez Arellano, "El Ingeniero" (Wells, 2013), this faction is known as the FSO. While the other faction was led by a former lieutenant of the FSO, Eduardo Teodoro "El Teo" Garcia Simental, who broke away from

El Ingeniero as a result of the FSO's weakening from government crackdowns and allied himself with the Sinaloa Cartel (Jones et al., 2018). Thus, in 2008, Tijuana turned into one of the most violent cities in Mexico as a bloody feud between the rival groups ensued (Beittel, 2020). However, after the arrest of El Teo in 2010, the two factions appeared to unite under El Ingeniero (InSight Crime, 2016) and an arrangement between the AFO/FSO and the Sinaloa Cartel was made to decrease violence in the Tijuana trafficking corridor (Felbab-Brown, 2011; Jones, 2013, 2016; Jones et al., 2018).

Some observers indicate that El Teo's 2010 arrest generated a vacuum for the Sinaloa Cartel to acquire control of the Tijuana trafficking corridor (Castillo & Spagat, 2014). However, regardless of its weakened state, the AFO seemed to have retained control of Tijuana through the arrangement it made with the Sinaloa Cartel requiring the Sinaloa DTO and other DTOs to pay a tax when trafficking through the Tijuana corridor (Jones, 2013). Though, in June of 2014, El Ingeniero's reign came to an end as he was captured in Tijuana by the Mexican Army, leaving his mother, Enedina Arellano Felix (sister of the 5 captured or killed Arellano Felix brothers) in command of the DTO (Insight Crime, 2016). Beittel (2020) indicates that it is uncertain whether the AFO has maintained enough authority through its own trafficking and other illicit activities to continue to function as a "tollgate cartel." Others have pointed to a more recent alliance between the AFO and the Cartel Jalisco Nueva Generacion (CJNG) as an effort to combat the remaining presence of the Sinaloa DTO in the Tijuana trafficking corridor (Heinle et al., 2017). With these developments following El Ingeniero's capture in mind, this study seeks to empirically analyze the impact of El Ingeniero's apprehension on homicides in Tijuana and theoretically explain the shifting criminal dynamics in Tijuana since his

arrest. Additionally, taking into consideration the link between HVT strikes and violence that was discussed in the previous section, I hypothesize that El Ingeniero's capture is positively associated with the number of cartel-related homicides in Tijuana.

***Research question [Q1]: Did El Ingeniero's capture increase violence in Tijuana?***

**The Sinaloa Cartel**

Like the AFO, the Sinaloa Cartel's origins begin with the breakup of the Guadalajara Cartel into several factions following the arrest of Miguel Ángel Félix Gallardo. While the Arellano Félix brothers were setting up their organization in Tijuana, Joaquin Guzman Loera aka "El Chapo" and his partner, Héctor Luis Palma Salazar, remained in the Sinaloa area (Insight Crime, 2019a) and became the leaders of their respective DTO (Tikkanen, 2019). The Sinaloa DTO is one of Mexico's oldest and most influential DTOs (CFR, 2021), consisting of a network of smaller groups (Beittel, 2020), with a firm grip in northwest Mexico and along the country's Pacific Coast, the organization has a superior international footprint compared to any of its rivals (CFR, 2021). As one of Mexico's most recognized organizations, three of its chief leaders were specified as kingpins in the early 2000s, including El Chapo, Ismael Zambada Garcia (El Mayo), and José "El Azul" Esparragoza Moreno (Beittel, 2020).

Before his designation as a kingpin, El Chapo was arrested and imprisoned in 1993 (Insight Crime, 2019b). From prison, he continued to play a central role in the organization (Tikkanen, 2019) and escaped in 2001, subsequently assuming a central leadership role in the organization (Insight Crime, 2019b). During the first decade of the

2000s, the Mexican government increased its efforts to capture suspected kingpins, El Chapo evaded arrest while other DTO leaders were captured and imprisoned, leading to the decline of some organizations and giving an emergence to fragmented groups (Tikkanen, n.d.). According to Tikkaden (2019) a wave of turf wars followed in which Sinaloa acquired territory from the Tijuana and Juárez DTOs in which the Sinaloa DTO hardened its position as one of the world's most influential DTOs.

In 2014, El Chapo was apprehended for the second time and escaped from prison once again in July of 2015 (Beittel, 2020). El Chapo's second capture will not be analyzed in this study as a report that analyzed violence in Mexico through 2014, by Heinle, Molzhan & Shirk (2015) found that El Chapo's apprehension was followed by "the absence of a flare-up in violence" (p.28) for reasons that will be discussed in the sections below. However, in January of 2016, El Chapo was apprehended for a third time, and a year later he was extradited to the United States (Insight Crime, 2019b). The Sinaloa DTO took another blow with the alleged death of "El Azul" in June of 2014 (Gurney, 2014), with both El Chapo and El Azul out of the picture, some consider Ismael Zambada Garcia to have obtained the top spot in the Sinaloa DTO (Insight Crime, 2019c). Beittel (2020) indicates that presently, Sinaloa cartel operatives have hegemony over certain areas, and are composed of a decentralized network of managers who conduct business and engage in violence through coalitions with each other and local gangs. During the time of El Chapo's second and third apprehensions, Tijuana was one of the territories in which the Sinaloa DTO had an established presence (Woody, 2017). With this in mind, this study will also empirically analyze the impact of El Chapo's third capture on homicides in Tijuana and likewise apply theoretical explanations to examine

the criminal dynamics displayed in Tijuana since his arrest. Accordingly, bearing in mind the association between HVT strikes and violence, I hypothesize that El Chapo's third capture is positively associated with the number of cartel-related homicides in Tijuana.

***Research question [Q2]: Did El Chapo's third capture increase violence in Tijuana?***

## Methodology

### *Data*

This study examines data obtained from the Instituto Nacional de Estadistica y Geografia (National Institute of Statistics and Geography), an autonomous Mexican governmental organization known in short as INEGI. INEGI provides data on deaths by homicides and other violent crimes and is Mexico's national statistical agency operating autonomously from any law enforcement agency (Shirk & Wallman, 2015). Mortality data is provided by INEGI by reporting the sum of individual homicide victims recognized by medical examiners at the state, municipal, and federal level (Heinle, Molzhan, & Shirk, 2017). Data on reported crimes are available monthly at the state and municipal level for the period under study, 1st January 2012 – 31st December 2017. Since Mexico is a federal republic, municipalities are similar to counties in the United States.

This study analyzes whether HVT strikes have an impact on cartel-related homicides by observing homicides in the municipality of Tijuana, where two individual HVT strikes took place. A subsequent analysis will analyze cartel-related homicides in three comparison cities. Ciudad Juárez, Nuevo Laredo, and Reynosa were used as comparison cities because 1) they are also located along the U.S – Mexico border, 2) they

also exhibit the presence of DTOs, and 3) they similarly serve as entry points for illicit drug trafficking into the U.S. Therefore, the three comparison cities have similar characteristics to the experimental city of Tijuana. ArcGIS software was used to depict the experimental municipality of Tijuana and the three comparison municipalities (Figure 3.2). Analyzing data on three comparison groups, as opposed to the area of interest only, allows for generalizable deductions on the settings that may increase violence.

The variable of interest that was analyzed is intentional homicides with a firearm (will be referred to as 'homicides' for remainder of study). Organized crime related homicides typically involve the use of high-caliber or automatic firearms (Espinal-Enríquez & Larralde, 2015), therefore making homicides with a firearm the best proxy to measure cartel-related homicides. Conversely, using this proxy would eliminate many homicides that are non-cartel related. However, for two of the comparison cities (Nuevo Laredo and Reynosa), "other" homicides were added to the count of homicides with a gun. This is because the number of homicides "with a gun" that INEGI accounted for did not corroborate the amount of cartel-related homicides reported by media outlets for these two cities. On the other hand, homicides categorized as "other" for these two cities were consistent with cartel-related homicides verified by media reports. This was not necessary for Tijuana and Juárez as the homicide data, specifically homicides "with a firearm" in these two municipalities were validated by media and government reports to correspond to cartel-related homicides. Therefore, adding "other" homicides to "homicides with a gun" for Nuevo Laredo and Reynosa demonstrated a more accurate count of cartel-related homicides.

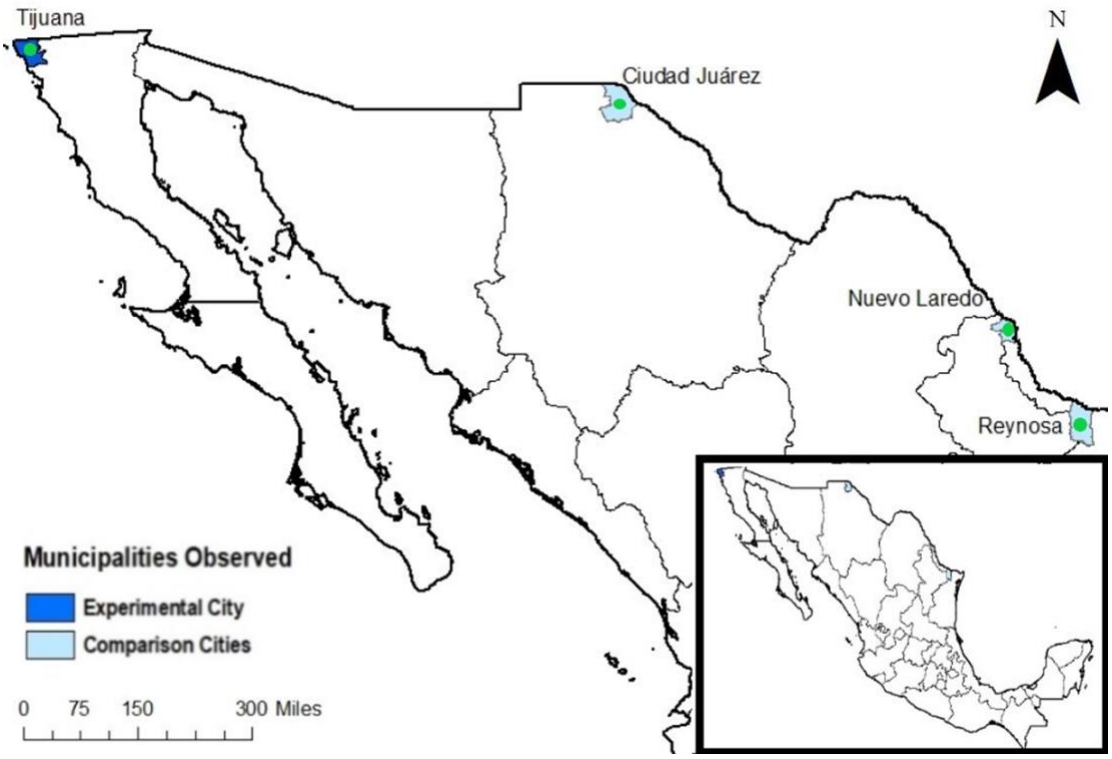


**Figure 3.2:** Experimental municipality (Tijuana) and comparison municipalities within Mexico.

The dependent variable was the number of monthly homicides reported by INEGI. The independent variable of interest was the intervention of a HVT strike and was coded as a dichotomous step-function with all months preceding the intervention coded as 0 and months post-intervention coded as 1 because it was theorized that the intervention would have a direct, lasting effect on the dependent variable, instead of a short temporary effect. The first intervention that was analyzed was the arrest of AFO leader, El Ingeniero in June of 2014, while the second separate intervention that was analyzed was the arrest of Sinaloa Cartel leader, El Chapo in January of 2016.

### *Analysis*

To provide a vigorous statistical methodology to link such causal relationships related to the effect of a HVT strike on violence, an AutoRegressive Integrative Moving Average (ARIMA) model was generated to model possible preceding trends in the pre-intervention period from intervention effects. Though an interrupted time series ARIMA model is suitable for interpreting aggregate change, a minimum of 50 pre-intervention periods are needed for trend and seasonality to be correctly modeled (Box, Jenkins, Reinsel & Ljung, 2008), otherwise, ARIMA results maybe unsound (McCain & McCleary, 1979). However, the first intervention that was analyzed (the capture of El Ingeniero, referred to as intervention 1) consists of 30 pre-intervention periods and 18 post-test periods, while the second intervention that was analyzed (the capture of El Chapo, referred to as intervention 2) was composed of 48 pre-intervention periods and 24 post-intervention periods. Given that both interventions do not meet the minimum number of required pre-intervention period, a supplemental analysis will be employed and is described below.

SPSS was used to create two separate ARIMA models (one for each intervention) through its iterative model-building strategy to verify whether the series had a constant variance over time, whether they were trended or drifted in either direction, or whether they exhibited seasonal fluctuations (IBM, 2015). The model for intervention 1 exhibited stationary variance throughout the series and a natural logarithmic transformation was not necessary. The intervention 1 model indicated that there was no seasonal variation, had one autoregressive parameter, and was not differenced. Therefore, the best-fitting model was determined to be ARIMA (1,0,0). The model for intervention 2 also exhibited

stationary variance throughout the series and a natural logarithmic transformation was not necessary either. The intervention 2 model indicated that there was no seasonal variation, did not contain an autoregressive parameter, and was not differenced. Therefore, the best-fitting model was determined to be ARIMA (0,0,0).

Since both interventions did not meet the minimum number of pre-intervention periods required for trend and seasonality to be correctly modeled (Meidinger, 1980), a secondary analysis was employed to support the findings of the interrupted time series ARIMA model. The supplementary analyses employed maintained a robust statistical test to identify casual relationships (Rasch & Guiard, 2004). Two independent-sample t-tests were generated to examine pre-intervention cartel – related crime trends in the INEGI data and identify intervention effects for intervention 1 and 2. These are the same two time series and intervention points analyzed in the interrupted time series ARIMA models. Like the interrupted time series, there are two periods of interest for the t-tests, the first t-test will analyze intervention 1 – the capture of El Ingeniero, (1) pre-intervention (January 2012 - June 2014; 30 months), and (2) intervention (July 2014 – December 2015; 18 months). The second t-test will analyze intervention 2 – the capture of El Chapo, (1) pre-intervention (January 2012 - December 2015; 48 months), and (2) intervention (January 2016 – December 2017; 24 months).

The supplementary analysis will analyze homicides in the three comparison cities as well; Ciudad Juárez (comparison city 1) which will be referred to simply as “Juárez” for the remainder of the study, Nuevo Laredo (comparison city 2), and Reynosa (comparison city 3). Note that the intervention period for El Ingeniero’s capture (intervention 1) ends on December 2015. The reason for this, is to avoid an overlap

between El Ingeniero's and El Chapo's capture for the first t-test (intervention 1). While the pre-intervention period for the second t-test (intervention 2) will include the point in time before and after El Ingeniero was captured as this event falls within the designated pre-intervention dates prior to El Chapo's capture. The number of homicides within that time frame serve as a baseline to measure the effect that El Chapo's capture had on cartel-related homicides within Tijuana. It is important to note that the overlapping periods may impact the results of the second intervention. This comes as possible elevated levels of violence following intervention 1 will appear appear during the pre-intervention period of the intervention 2 analysis. Therefore, any effect that El Chapo's third arrest had on violence might not appear as robust due to possible elevated levels associated with El Ingeniero's capture.

**Descriptive Analysis**

Evaluation begins with a descriptive analysis of the time series data by constructing two figures. The first figure depicts the frequency of homicides in Tijuana and the three comparison cities over the 48 - month period (see Figure 3.3)[1]. The vertical solid line represents the capture of El Ingeniero in June 2014. While the red solid line represents homicides in Tijuana. A visual examination of Figure 3.3 shows that the trends in homicides did not remain stable over time. A comparison of the period before and after El Ingeniero's capture, reveals an increase in homicides. The overall mean of homicide incidents during the period before El Ingeniero's capture period was 18 homicides per

[1] Surge in homicides in Nuevo Laredo between August and November 2013 is associated with the arrest of the Zetas Cartel leader, Omar Treviño Morales, known as "Z-42." Increase in homicides appeared to be related to lower-ranking members of the organization attempting to fill power vacuums, while rival DTOs take the opportunity to attack the disrupted network (Heinle et al., 2015).

month in Tijuana. However, following El Ingeniero's capture, the average number of incidents was increased to 28 homicides per month in Tijuana.

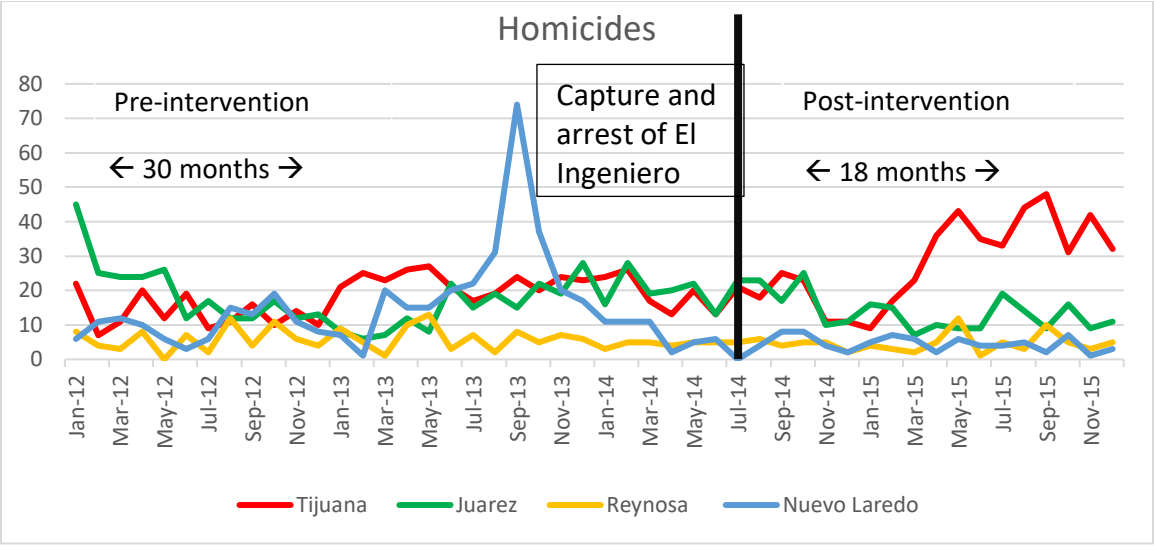


**Figure 3.3:** Homicides in Tijuana and four comparison cities as reported by INEGI (*N* = 48 months, 2012 – 2015).

The second figure depicts the frequency of homicides in Tijuana and the three comparison cities over the 72 - month period (see Figure 3.4). The vertical solid line represents the capture of El Chapo in January 2016. While the red solid line represents homicides in Tijuana. A visual examination of Figure 3.4 shows that the trends in homicides did not remain stable over time. A comparison of the period before and after El Chapo's capture, also reveals an increase in homicides. The overall mean of homicide incidents during the period before El Chapo's capture period was 22 homicides per month in Tijuana. However, following El Ingeniero's capture, the average number of incidents was increased to 73 homicides per month in Tijuana. These initial findings seem to suggest that the capture of both El Ingeniero and El Chapo ensued a substantial increase in the number of homicides in Tijuana. Nonetheless, while these preliminary

findings seem to support the view that El Ingeniero's and El Chapo's captures prompted an increase in homicides in Tijuana, one must acknowledge that these findings are merely suggestive. Further empirical corroboration is necessary before accepting these findings as statistically significant. Therefore, to investigate this matter, the two sophisticated intervention analysis that were undertaken are discussed below.

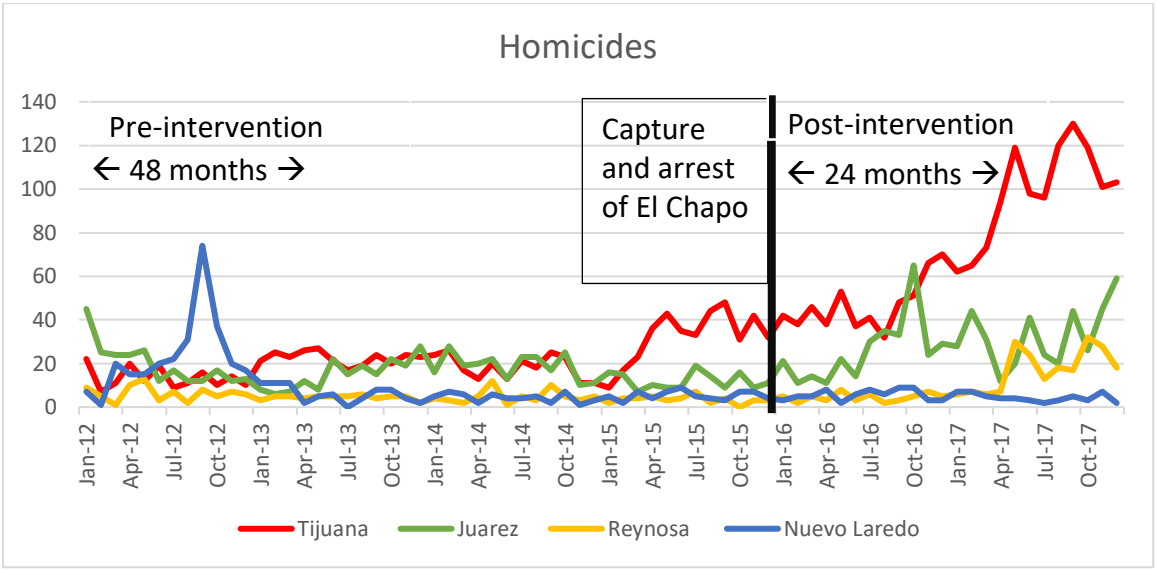


**Figure 3.4:** Homicides in Tijuana and four comparison cities as reported by INEGI (*N*=72 months, 2012 – 2017).

**Results**

To provide a more vigorous statistical approach to identify causal relationships, two interrupted time series ARIMA models were generated to identify intervention effects. Table 3.1 indicates that the capture of El Ingeniero had a positive statistically significant effect on the number of homicides in Tijuana, showing that after El Ingeniero's capture, homicides increased by 9 incidents per month. Table 3.2 specifies that the capture of El Chapo had a positive statistically significant effect on the number of

homicides in Tijuana, indicating that after El Chapo's capture, homicides increased by 50 incidents per month.

**Table 3.1.** Maximum-likelihood coefficients predicting the impact of El Ingeniero's capture on the number of homicides in Tijuana (*N*= 48 Months, 2012 – 2015).

| Model Parameter | Estimate | Standard Error | *t*-value | *p*-value |
|---|---|---|---|---|
| Auto Regressive Lag 1 | .655 | 3.175 | 5.885 | .000 |
| Ingeniero Capture Numerator Lag 0 | 9.323 | 4.545 | 2.051 | .046 |
| Model Description: ARIMA (1,0,0). Ljung-Box Q Statistic (18) = 10.193 ($p$ = *.895*). | | | | |

**Table 3.2.** Maximum-likelihood coefficients predicting the impact of El Chapo's capture on the number of homicides in Tijuana (*N*= 72 Months, 2012 – 2017).

| Model Parameter | Estimate | Standard Error | *t*-value | *p*-value |
|---|---|---|---|---|
| El Chapo Capture Numerator Lag 0 | 50.792 | 4.949 | 10.252 | .000 |
| Model Description: ARIMA (0,0,0). Ljung-Box Q Statistic (18) = 263.702 ($p$ = .000). | | | | |

Additionally, a supplementary analysis was utilized to support the casual relationships identified in the two interrupted time series ARIMA models. Monthly averages, t-test scores and percentage change for both interventions are displayed in Table 3.3. The city of Tijuana experienced a significant increase in the monthly average of homicides by 54% when comparing the periods before and after El Ingeniero was captured (intervention1) ($t$ = - 3.191, p > .001). While comparison city 1 (Juárez) displayed a nonsignificant 22% decrease in homicides ($t$ = - 1.967). Comparison city 2 (Nuevo Laredo) exhibited a significant 71% decrease in homicides ($t$ = 4.006, p > .05). Comparison city 3 (Reynosa) saw a non-significant, 18% decrease in homicides ($t$ = 1.183).

Similarly, the city of Tijuana experienced a significant increase in the monthly average of homicides by 233% when comparing the periods before and after El Chapo was captured (intervention 2) ($t$ = - 7.706, p > .001). Comparison city 1 (Juárez) exhibited a significant, 78% increase in homicides ($t$ = - 4.076, p > .001). Comparison city 2 (Nuevo Laredo) experienced a significant, 49% decrease in homicides ($t$ = 2.623, p > .01). Lastly, comparison city 3 (Reynosa) saw a significant, 127% increase in homicides ($t$ = -3.100, p > .001).

**Table 3.3. Results of the T-test analysis and mean number of homicides by city reported by INEGI.**

| | Pre | Post | *t*-test | Percent Change |
|---|---|---|---|---|
| Ingeniero Capture | | | | |
| N of Months | 30 | 18 | | |
| Tijuana | 18.13 | 27.89 | - 3.191*** | +54% |
| Juárez | 17.93 | 14.06 | 1.967 | -22% |
| Nuevo Laredo | 14.83 | 4.33 | 4.066* | -71% |
| Reynosa | 5.73 | 4.72 | 1.183 | -18% |
| | | | | |
| El Chapo Capture | | | | |
| N of Months | 48 | 24 | | |
| Tijuana | 21.79 | 72.58 | -7.706*** | +233% |
| Juárez | 16.48 | 29.29 | -4.076*** | +78% |
| Nuevo Laredo | 9.73 | 4.96 | 2.623** | -49% |
| Reynosa | 4.77 | 10.83 | -3.100*** | +127% |

Note: El Ingeniero Capture, Pre = January 2012 – June 2014, Post = July 2014 – December 2015. El Chapo Capture, Pre = January 2012 – December 2015, Post = January 2016 – December 2017.
*$p$ < .05; **$p$ < .01, ***$p$ < .001 (Two-tailed test).

## Discussion

Results imply that the capture of El Ingeniero and El Chapo's third capture are both associated with elevated levels of homicides in Tijuana as previously observed (Dell, 2011; Guerrero Gutierrez, 2011a, 2011b; Osorio; 2015; Espinosa & Rubin, 2015; Phillips, 2015). This study indicates that the answer to *RQ1* and *RQ2* is yes — the capture

of El Ingeniero and El Chapo's third capture are both associated with an increase in violence in Tijuana. Although other factors may surely influence homicide levels, the prospect that implementing HVT strikes against a DTO can contribute to a significant, long-term increase in homicides is worth deliberating (see Figure 3.3 and 3.4).

In light of other studies finding that HVT strikes increased homicides (Rasmussen & Benson, 1994; Kenney, 2007; Felbab-Brown, 2010; 2011; Guerrero Gutierrez, 2010, 2011a, 2011b; Jones & Cooper, 2011; Medel, 2012; Jones, 2011a, 2011b, 2013; Pereyra, 2012; Moeller & Hesse, 2013; Calderon, et al., 2015; Osorio; 2015; Osorio; 2015; Espinosa & Rubin, 2015; Espinosa & Rubin, 2015; Atuesta & Ponce, 2017; Atuesta & Ponce, 2018; Jones et al., 2018), the findings of this study are consistent with the previous literature. Particularly, homicides significantly increased during the period after the capture of El Ingeniero and continued to dramatically increase in the period after the capture of El Chapo. However, before discussing the reasons for the increased levels of violence following the capture of the two kingpins, it is worth reviewing why El Chapo's 2014 capture was not followed by increased levels of violence like his 2016 capture.

Heinle et al. (2015) point to several reasons as to why there was an absence in violence following El Chapo's 2014 capture. First, when El Chapo was captured in 2014, his certain successor was El Mayo, who co-founded the Sinaloa DTO. Second, the overall composition of the DTO remained largely unbroken with its capabilities unaffected. And third, El Chapo's prospects of being extradited at the time were seemingly unlikely. It seems that El Chapo's 2014 capture is not connected to any of the five possible outcomes related to the apprehension or killing of a HVT as violence did not increase after the kingpin's apprehension. To begin with, since El Mayo was El Chapo's acknowledged

successor, there was no possibility for a younger and more violent member to step in and lead the DTO. Similarly, given that El Mayo is one of the DTO's co-founders, it seems that rival groups did not perceive the Sinaloa DTO under his leadership to become weakened, therefore attacks from rival DTOs were absent. Correspondingly, Gagne (2015a) points out that under El Mayo's command, trafficking operations of the Sinaloa DTO were hardly affected following El Chapo's arrest, thus the DTO did not need to engage in other profitable violent crimes as proceeds continued to be generated from drug trafficking operations. Gagne (2015a) also indicates that El Chapo's arrest drew speculation of a possible surge in violence amongst mid-level Sinaloa captains fighting for control of the DTO, however, violence actually decreased in the 12-month period following his 2014 capture. It appears that El Mayo's ability to run the Sinaloa DTO efficiently permitted the group to avoid fragmentation, hence there was not an increase of operating criminal groups battling for control of the DTO.

On the other hand, the capture of El Ingeniero was followed by an increase in homicides in Tijuana, while the three comparison cities all saw a decrease in homicides. This prompted the Tijuana homicide rate to jump from 28 per 100,000 residents in 2012 to 39 per 100,000 in 2015 (Woody, 2016). It is worth considering that the increased levels of violence in Tijuana after El Ingeniero's capture is linked to at least one of the five possible outcomes related to the apprehension or killing of a HVT. To begin with, Dibble (2016) indicates that the surge in homicides in spring of 2015 (see Figure 3.3) coincides with the arrival of the Cartel Jalisco Nueva Generacion (CJNG) to the Tijuana trafficking corridor. Sánchez Lira et al. (2018) explain that the CJNG looks to have developed a partnership with the AFO in order to combat the Sinaloa DTO's presence in

Tijuana. Similarly, Dibble (2016) explains that with the CJNG presence in Tijuana, the group has gone as far as to recruit former AFO members and has persuaded Sinaloa operators to join their organization. In this case, it appears that both the perceived weakness of the group whose leader was captured along with the increase in the number of criminal groups took place in Tijuana after El Ingeniero's capture. The number of criminal groups increased in the region as the CJNG moved in to contest the region against the Sinaloa DTO. Also, it seems that the AFO's perceived weakness after the capture of its leader took a different form than previously observed because the AFO was not attacked by the new organization that showed up in the Tijuana area. Instead, it seems that the AFO's perceived weakness made the group vulnerable to creating an alliance that required the group to share its territory and ally itself with the CJNG, as the group emerged into the Tijuana trafficking corridor. This is also directly related to the creation of an alliance for the purpose of challenging a common enemy and controlling territory as an alliance with a promising DTO such as the CJNG would represent the best gamble for the AFO to maintain its dominance (Bargent, 2016; Atuesta & Pérez-Dávila ,2018).

Other outcomes, such as fragmentation (Phillips, 2015; Atuesta & Ponce; 2017), the emergence of a young violent leader or an increase in profitable violent crimes do not seem to be an applicable justification for the increased levels of violence after El Ingeniero's capture. The AFO seems to not have exhibited fragmentation or the progression of a young violent leader to its command after El Ingeniero's arrest because his undisputed successor was his mother (Gagne, 2015b). It is also conceivable that the AFO's partnership with the CJNG kept the DTO strong enough to prevent any major splintering. Moreover, Sánchez Lira et al. (2018) indicate that Tijuana did not experience

an increase in the number of lucrative violent crimes, as the number of kidnappings and extortions in Tijuana remained low following El Ingeniero's capture. To conclude the discussion related to El Ingeniero's capture, it is important to remember that the AFO has been described as a regional "tollgate" organization that is only present in the Mexican state of Baja California. This is likely why Tijuana, which is the only city analyzed that is located in Baja California, saw an increase in homicides following El Ingeniero's capture, while the three comparison cities exhibited a decrease in homicides.

Likewise, in 2017 Tijuana became the city with the most homicide cases in Mexico as the city exhibited an 85% increase in homicide cases from 2016 to 2017 (Calderón, Ferreira & Shirk, 2018). This pattern was evident following El Chapo's January 2016 arrest. However, Tijuana is not alone, as the comparison cities of Juárez and Reynosa also exhibited an increase in homicides during this period. It is important to note, of the three cities that exhibited an increase in homicides following El Chapo's arrest, Tijuana saw the greatest increase. With this in mind, it is also worth exploring how El Chapo's capture is associated to any of the five possible outcomes related to HVT strikes and an increase in violence. To begin with, Bargent (2016) has noted that following El Chapo's capture, several factions of the Sinaloa cartel engaged in intragroup violence. In February 2017, Dámaso López Núñez, alias "Licenciado," who lead the "Los Dámaso" faction of the Sinaloa DTO attempted to kill Ismael Zambada who at the time, was the leader of another Sinaloa group. In addition, Los Dámaso were also in conflict with a faction lead by El Chapo's sons, known as "Los Chapitos," over operational control in several regions of the state of Sinaloa (Insight Crime (2018b).

Even though these confrontations between Los Damaso and other factions of the Sinaloa DTO did not taken place in Tijuana, several researchers have indicated that well-known knowledge of the Sinaloa Cartel's internal problems has emboldened other criminal groups to challenge the Sinaloa DTO for established trafficking corridors in Baja California, Juárez (comparison city 1), and most importantly Tijuana (Felbab-Brown, 2017; Calderón et al., 2018). It appears that the conflicts that El Licenciado engaged in against Ismael Zambada and Los Chapitos are analogous with the fragmentation that takes place after a kingpin is captured (Phillips, 2015; Atuesta & Ponce, 2017). Additionally, it seems that the realization of the Sinaloa Cartel's fragmentation by rival DTOs coincides with the idea that groups who lose their leader are perceived to be weak and subsequently attacked, as can be observed by the fact that enemies of the Sinaloa DTO have been encouraged to challenge the group over control of its territory.

Though it's not entirely clear if the CJNG made its way into Tijuana precisely after the capture of El Ingeniero or El Chapo, it is evident that following the periods after the capture of both kingpins, homicides increased. It is probable that the CJNG appeared in Tijuana following El Ingeniero's capture to ally itself with the AFO and begin its assault against the Sinaloa Cartel, and later intensified its attacks against the DTO once it was perceived to be weakened by the fragmentation that ensued from El Chapo's arrest. The outcome of a new young member with a propensity for violence taking over the Sinaloa DTO was not initially exhibited. This is due to the fact that El Licenciado and Ismael Zambada, who are veteran members of the organization attempted to gain control of the DTO. However, El Licenciado was arrested by Mexican authorities in May 2017 (Gagne, 2017), leaving Ismael Zambada in control of the DTO as he oversaw the

organization's procedures and supervised Los Chapitos (Insight Crime, 2019c).

Nevertheless, fragmentation was subsequently exhibited for a second time, along with the outcome of a new young and violent member taking over the Sinaloa DTO to some degree, as Los Chapitos initiated a violent conflict with Ismael Zambada for control of the Sinaloa DTO by summer of 2020 (Michael, 2020). In this case, we can see that the Sinaloa DTO fragmented as a result of young members from one faction attempting to violently eliminate established members from another faction. Conversely, the arrest of El Chapo did not compel the organization to diversify its criminal activities and carryout violent profitable crimes. A report by Verza and Stevenson (2019) points out that even after the arrest, extradition, and conviction of El Chapo, the Sinaloa DTO continues to carry out multi-drug shipments and has not seen its international reach curtail. Therefore, the group continues to profit from its trafficking - oriented business model, which is why the organization has not found the need to employ a business model to profit from violent crimes.

More recently, reports of Tijuana and the surrounding area reveal the existence of an AFO group who has keenly withstood any partnership with the CJNG. This group is led by Huerta Nuño and is devoted to maintaining the AFO as an independent organization (Ramos, 2021). This has developed into a multilateral battle in Tijuana between the CJNG, Nuño's independent AFO, and Sinaloa Cartel factions (El Sol de Mexico, 2021; Ramos, 2021). Moreover, fragmentation of the DTOs operating in greater Tijuana has persisted as Nuño's AFO has exploited difficulties within the CJNG by enlisting former operatives who defected from the group in the nearby municipality of Tecate (SinEmbargo, 2020), and also recruited dissatisfied hitmen and drug dealers of the

group in Tijuana and Ensenada (Ramos, 2021). Ramos (2021) indicates that Nuño's AFO is currently not as robust as it was in its prime, but that the organization has resumed its capability to noticeably influence criminal dynamics in the greater Tijuana region. Specifically, as the fighting between Los Chapitos and Zambada persists, it is reported that Los Chapitos have allied themselves with Nuño's AFO in order to target both Zambada's Sinaloa factions and the CJNG in greater Tijuana (Ramos; 2021; Vanguardia, 2021).

With the observed trends in mind, it appears that the capture of El Ingeniero and El Chapo somewhat debilitated the AFO and the Sinaloa Cartel. However, it seems that with the weakening of these two organizations, other groups, mainly the CJNG, have benefited from the removal of these two leaders. First, the apprehension of El Ingeniero seems to have presented the CJNG with the opportunity to create an allegiance with the weakened AFO to battle against the Sinaloa Cartel in Tijuana. Second, El Chapo's arrest appears to have bolstered attacks against his organization in Tijuana and other areas where the Sinaloa Cartel is present. Although the AFO and the Sinaloa Cartel were weakened by the apprehension of its leaders, it appears that the removal of these leaders shifted the criminal dynamics in Tijuana and prompted a substantial increase in homicides that still persists. This situation has prompted Tijuana to be considered Mexico's most violent city as it has consecutively endured the highest number of homicides in Mexico since 2017 (Justice in Mexico, 2020).

By the same token, it seems that the rise in homicides seen in Juárez, comparison city 1, is also associated to El Chapo's third arrest. While it appears that the Sinaloa Cartel and the Juárez Cartel's armed wing, "La Linea" were already in a conflict over the

local methamphetamine trade. The CJNG's arrival to the Juárez trafficking corridor, sometime in 2016, came with an evident surge in homicides (Woody, 2017a). The CJNG and La Linea have created an alliance to confront the Sinaloa DTO (Jones, 2018). And according to Woody (2017a), the purpose of this alliance is to defeat the deeply fragmented Sinaloa DTO and achieve hegemony over the profitable Juárez-El Paso trafficking corridor. The situation in Juárez with the CJNG and La Linea resonates with the situation in Tijuana, in which the CJNG appeared in Tijuana and allied itself with the AFO to take on the Sinaloa Cartel following El Chapo's third arrest. It is not surprising that El Chapo's third arrest seems to be associated with the elevated levels of homicides in both Tijuana and Juárez as the Sinaloa DTO has an expansive territorial reach throughout Mexico.

Moreover, the increase in homicides in Reynosa, comparison city 3, does not appear to be related to El Chapo's arrest. However, the surge in violence exhibited in the city does seem to be related to one of the theoretical implications related to HVT strikes. In April of 2017, Mexican Marines killed Julian Loisa Salinas, the local leader of the Gulf Cartel in Reynosa (CBS, 2017). It appears that with Salinas' death, the Gulf Cartel has persisted to fragment, leading to a surge in homicides as these splintered groups compete with one another for dominance of the Reynosa-McAllen trafficking corridor (Woody, 2017b). Although, not related to El Chapo's capture, the consequences of the targeted strike against the Gulf Cartel leader, are similar to those observed in Tijuana and Juárez following El Ingeniero's and El Chapo's captures.

Lastly, it is important to keep in mind that the nature of the violence perpetrated among the competing DTOs exhibited in Tijuana, Juárez and Reynosa during the period

that was analyzed is specific to these three cities. For example, the state of Guanajuato has exhibited a surge in violence that is unrelated to the arrests of kingpins. In the case of Guanajuato, the Cartel de Santa Rosa de Lima and the CJNG have been engaged in a violent turf war since 2017 for hegemony over some of the most lucrative fuel theft territories in Mexico. The two DTOs are attempting to gain control over an area that contains one of the main PEMEX refineries and numerous storage and distribution stations so that they can expand their illicit fuel theft (Henkin, 2020). In another case, the state of Michoacán has become the world's top producer of avocados, prompting DTOs such as the CJNG, the Nueva Familia Michoacána, the Tepalcatepec Cartel, and the Zicurián Cartel to compete for hegemony over this lucrative region (Henkin, 2020a). In one last differing case, the state of Guerrero has exhibited a surge in violence as self-defense forces have directly confronted criminal groups in attempt to rid areas of Guerrero of any criminal elements (Crisis Group, 2020). The last example will be the focus of the study in chapter 5.

**Limitations**

Researchers have previously described INEGI data as the most consistent, comprehensive, and trustworthy source of knowledge regarding crime in Mexico (Heinle et al., 2017). Nevertheless, it is worth mentioning that this dataset has some flaws. Since the dataset only includes reported crimes, there is a chance that unreported homicides in Tijuana are not accounted for in the data that was analyzed. However, it is important to note that in contrast to other violent crimes, homicides have a relatively high rate of reporting, in part because it is a difficult crime to conceal when compared to other violent crimes (Calderon, Heinle, Rodriguez Ferreira & Shirk, 2019).

Another limitation of the data employed in this study is that incidents of homicide were disaggregated to include only "intentional" homicides "with a firearm" and "other homicides" for the cities of Reynosa and Nuevo Laredo. Therefore, allowing the possibility that not all of the intentional homicides with a firearm, or the "other" homicides that were analyzed were linked to the violence that ensued from the capture of either kingpin. However, because of the absence of available data on cartel-related homicides, the use of intentional homicides with a firearm as a substitute for cartel-related homicides is the most precise data accessible at this time as it excludes homicides categorized as "negligent," "unknown" and those perpetrated with a "cold weapon" as cartel related violence is probable to include the use of firearms (Espinal-Enriquez and Larralde, 2015). Although this study employed data from INEGI, it is suggested that the Mexican government and nongovernmental groups attempt to collect and publicize data on cartel-related homicides to better assess violence related to DTOs.

Related to the interrupted time series ARIMA model, the available data did not have the minimum number of suggested pre-intervention periods to conduct both analyses. Similarly, the ARIMA model generated for intervention 2 (El Chapo's capture) indicated that there was a significant *p*-value for the Ljung box test, implying that there is the possibility that the model may not have met all of the assumptions or that it may have not fit the data (Minitab, n.d.), conceivably a consequence of not having enough pre-intervention data. Therefore, it is important to remain cautious when interpreting the results of the interrupted time series ARIMA models and to infer the results alongside the results of supplemental t-tests analyses that were conducted in support of the primary interrupted time series ARIMA models.

## Conclusion

The analyses in this chapter answered Jones' (2013) call to further investigate the relationship between decapitation strikes and homicide rates in regions in which illicit networks operate, by being the first to analyze the effect that the apprehension of two leaders from separate DTOs had on homicides in Tijuana. This chapter has presented valuable insights into the unintentional outcomes of HVT strikes that authorities and security forces should contemplate when apprehending or killing leaders of DTOs. Future research should examine the effects of leadership apprehension on violence in other areas to observe if these findings are limited to the situation in Tijuana or shared by other areas where a DTO leader has been captured. Similarly, forthcoming microlevel analyses should also investigate how the capture of leaders of street gangs, insurgent groups, and other organized crime groups outside of Mexico affects levels of violence. Additionally, future studies on the topic should investigate any diffusion and/or displacement effects on violence as a result of the apprehension of a leader of a DTO. Scholarship of this kind can assist in growing our comprehension of the unintentional outcomes of HVT strikes and how to get ready for them.

High Value Target strikes can efficiently debilitate a DTO. However, this study saw that the weakening of a DTO can be severe in the regions where these groups are present, which may lead to unintended consequences. As observed in this study, homicides escalate when DTOs who have their leader apprehended fragment and appear weak to their rivals. This is linked to an increase in the number of criminal groups as other groups emerge in the illicit market to either attack the weakened group or create an allegiance to wage war against other groups present in the region. Similarly, homicides

may increase after DTOs are weakened because DTOs are susceptible to fragmentation after a leader is apprehended. This is followed by factions of the DTO engaging in intra-cartel violence for control of the organization.

Another consequence related to the weakening of a DTO is that rivals of the weakened DTO benefit from the disruption that's caused by the apprehension of a leader. As a DTO fragments and deals with the loss of its leader, competing organizations see an opportunity to move in on the established territory of the weakened DTO and compete against the weakened organization to gain control of its territory. Therefore, the weakening of an organization who lost its leader may indirectly empower a rival organization as the rival group is presented with the prospect of establishing new territory to conduct illicit drug activity in.

As several DTOs continue to operate in Tijuana and attempt to consolidate their power of the Tijuana trafficking corridor (Vanguardia, 2021), Mexican authorities need to approach the fight against these organizations in a matter that will minimize the consequences that arise from the weakening of these groups. While it is in the governments best interest to dismantle these organizations, authorities and security forces should be cognizant of the fact, that the future apprehension of a leader of any one of the many DTOs currently present in Tijuana may further shift the criminal dynamics in the region. This could ensue another surge in violence as the debilitated group may exhibit an internal strife as members attempt to secure leadership in the power vacuum ensued by the apprehension. Or rival groups in the region can exploit the capture of a group's leader by initiating attacks against the group.

The HVT strike tactic is the first approach to deal with TOC groups that was evaluated in this dissertation. This chapter focused on the effect that this tactic has on DTOs. The following chapter will similarly assess this approach. However, part 1 of chapter 4 will evaluate the effect that HVT strikes have on armed insurgent groups who are different than traditional DTOs. Part 2 will analyze the effect that the signing of a peace accord with an armed insurgent group has on terrorism and cartel-related violence. The concluding portions of chapter 4 will compare the HVT strike approach with a peace accord in dealing with armed-insurgent groups. Following chapter 4, chapter 5 will assess the last approach to be analyzed in this dissertation to combat TOC groups vigilantism.

# CHAPTER 4

## Targeted Killings, Negotiations and Peace Accords: The FARC, FARC dissidents, and the ELN in Colombia

Having examined HVT strikes against DTO leaders in Mexico, Chapter 4 seeks to explore the effect that HVT strikes have against armed insurgent groups. Additionally, this chapter will analyze another approach to deal with TOC groups: peace accords between sovereign states and armed insurgents. With the case of Colombia, the country has experienced the lengthiest ongoing armed conflict in the Western hemisphere as government forces have engaged in continuous waves of conflict against TOC groups, specifically, armed insurgent groups (ICTJ, 2009). This civil war began in the 1960s when communist guerrillas took up arms against the government and is said to be responsible for the death of over 220,000 people, the disappearance of 25,000 and the displacement of 5.7 million (Felter & Renwick, 2017). Several organizations have waged war with the Colombian government, although the two most well-known groups during the conflict have been the Revolutionary Armed Forces of Colombia (FARC) and the National Liberation Army (ELN). When these two-armed insurgent groups were established, their objective was to overthrow the Colombian government in an effort to institute social and political change within the country (JFC, 2021).

Both the FARC and the ELN have engaged in schemes that harm the security of Colombia and the United States alike. Throughout the civil war, these groups have carried out attacks against infrastructure and government employees and have financed their activities through their involvement in the drug trade, and other illegal undertakings such as kidnappings and extortion (Mackenzie Institute, 2015; Sullivan & Beittel, 2016).

The Colombian government has employed many counterterrorism strategies to combat armed insurgent groups throughout the period of armed conflict. One approach has been to kill or capture leaders and high-ranking members of armed insurgent groups. While the other approach has been the demobilization, disarmament, and reintegration of these organizations through negotiated peace accords. The Colombian government has previously reached an accord of this nature with four different armed insurgent groups. The first organization that the Colombian government reached a peace deal with, was the left-wing M-19 guerilla organization in November 1989, which saw the group demobilize and transition into a political party (Boudon, 2015). Two years later, another left-wing organization known as the Popular Liberation Army (EPL) also demobilized and likewise transitioned into a political party (Mapping Militant Organizations, 2018). The third group that went through demobilization was the right-wing organization known as the United Self-Defense Forces of Colombia (AUC), who demobilized in 2006 (Mapping Militant organizations, 2018a). Lastly, the most recent group to reach a peace deal with the Colombian government was the FARC in August of 2016, which subsequently saw the group demobilize (McDermott, 2016).

With these two particular approaches in mind, this chapter will investigate the outcome of these two tactics when employed against an armed insurgent group. Therefore, part I of this chapter will analyze the HVT strike policy employed by Colombian government to wage war against the FARC. While Part II of this chapter will evaluate the signing of a peace accord between the Colombian government and the FARC in 2016 (McDermott, 2016). Studying these two policies together will make several contributions to the literature. First, while the peace accord reached with the

FARC was not the first peace accord that the Colombian government reached with a rebel group, no previous studies have analyzed the overall long-term homicide and terrorism trends following the implementation of a peace treaty in Colombia. Second, no studies have compared the effects that HVT strikes and peace treaties have on homicides and terrorism. Therefore, this will be the first study to compare the two approaches, while simultaneously analyzing the long-term trends of homicides and terrorism following the peace accord.

## Part I: High Value Target Strikes against the FARC

This section of the chapter will specifically analyze the effect that targeted killings against the FARC's leadership had on the number of terrorist incidents and the lethality of the incidents. Before discussing the targeted strikes and their effect on terrorism, there is a segment on the history of the FARC, from its inception through the moment it reached the peace accord in 2016. Followed by a section outlining the FARC's hierarchy and leadership. This is followed by a brief literature review of the HVT strike literature in Colombia, a theoretical discussion on HVT strikes against armed insurgent group leaders, methods, variables, findings, and a discussion on the findings.

### The Revolutionary Armed Forces of Colombia

The Revolutionary Armed Forces of Colombia (FARC) was the largest armed rebel group in Colombia before they demobilized (Ware, 2016). The leftist insurgent group was involved in drug production and trafficking, it was responsible for terrorist attacks against infrastructure, and engaged in kidnapping, extortion, and illegal mining (Sullivan & Beittel, 2016). The FARC's origins begin in 1964 as the armed wing of the Colombian Communist Party (PCC) (Britannica, n.d.). After a decade of civil war from

1948 to 1958, referred to as “La Violencia” (The Violence), members of the PCC organized groups of individuals who felt ignored by the Colombian government and guided them to inhabit the countryside and establish their own communities (Mapping Militants, 2019). One of the PCC members, Pedro Antonio Marin, who went by the aliases of Manuel Marulanda or Tirofijo (Sureshot) because of his marksmanship (Romero, 2008), directed a group to inhabit a rebellious enclave in the central Andean Mountain range known as Marquetalia (Yale, n.d.). The objective of this enclave was to create a society where the needs and concerns of rural people would be focused on (Osterling, 1988). This group led by Tirofijo would later turn into the FARC (Mapping Militants, 2019).

In May of 1964, the Colombian military launched an offensive against the rebel stronghold of Marquetalia (Insight Crime, 2013). Following the attack, Tirofijo and his rebels met with other communities, planned, and united in what would be termed the First Guerilla Conference, where over 300 rebels participated and officially announced themselves a guerilla groups and assumed the name the Southern Bloc (Mapping Militants, 2019). The ideology of the Southern Bloc advocated for land reform and improved conditions for people living on the countryside. Moreover, the group swore to protect the communities of followers from the Colombian government (Mapping Militants 2019).

In 1966, the Second Guerilla Conference took place and the Southern Bloc rebranded itself as the Revolutionary Armed Forces of Colombia (Insight Crime, 2013). Along with the group’s new name, this second conference outlined a change in strategy for the guerilla group. While the Southern Bloc was principally a defense group, now, as

an alternative of only defending from government strike, the FARC would supply educational and medical services to faithful communities, train militants for battle, and execute attacks (Mapping Militants, 2019). To finance its training camps and social service stipulations, the FARC initially depended on ransoms from kidnapping Colombia's elites (Gus, 2011). However, to continue financing its operations they implemented new criminal tactics. In the mid-1970s they began taxing marijuana cultivators, followed by the taxing of coca leaf plantations, then they began kidnapping en masse and extorting large and small businesses (Insight Crime, 2013). By the late 1970's the group began trafficking cocaine (Mapping Militants, 2019) and by the early 1980's the group began taxing cocaine laboratories that operated in the territory they controlled. (Insight Crime, 2013). These new activities enabled the FARC's growth in the 1980s, as its recently established wealth from these activities and the social services it offered appealed to a large number of new recruits who wanted an escape from poverty within Colombia (Leech, 2015). The FARC's dependence on drug trafficking hurt the group's status as the United States and Colombian government, along with news networks began to refer to the guerrilla group as a drug cartel and its leaders as traffickers (Mapping Militants, 2019).

By 1982, the group modified its formal name to the Revolutionary Armed Forces of Colombia – People's Army (FARC-EP) although the Colombian, and U.S. government, along with the media continued to refer to the group simply as the FARC (Osterling,1989). More importantly, that same year, the Colombian government and the FARC initiated peace talks for the first time (Mapping Militants, 2019). An agreement known as the Uribe Accords was reached in May of 1984 which organized a bilateral

ceasefire between 1984-1987 (Restrepo, 2013). One of the components of the arrangement allowed the FARC to co-create the Patriotic Union (UP) political party in partnership with the Colombian Communist Party (PCC) (Mapping Militants, 2019). Although a small party, the UP was successful in the 1986 elections as the party acquired 350 local council seats, along with 15 seats in Congress and its presidential candidate earned 4.6% of votes (Colombia Reports, 2014). However, the quick success of the party caused the party's opposition to react instantly—right-wing paramilitary groups, drug traffickers and the Colombian Army systematically killed UP leaders and forced their disappearance immediately after. The UP's 1986 presidential candidate was assassinated in 1987 by a perpetrator with ties to the Medellin Cartel (Colombia Reports, 2014). It is estimated that up to 6,000 UP members were killed, including the UP's presidential candidate and four congressmen (Colombia Reports, 2014), leading many remaining members to flee to the countryside.

During the period of the Uribe Accords, the FARC continued to engage in kidnappings by targeting wealthy landowners. This triggered the landowners to establish militia groups, such as the United Self-Defense Forces of Colombia (AUC) which were associated with the Colombian military in the 1980s to remove guerrilla presence from the countryside (Mapping Militants, 2019). In cooperation with the Colombian government, these Paramilitary groups assassinated innocent civilians and reported them as FARC combatants or sympathizers in order to portray the image that the paramilitary groups were successfully suppressing FARC influence throughout the country (Palau, 2020).

The Uribe Accords period saw the FARC double in size and by 1999 the group's membership expanded to 18,000 members, which coincided with over 3,000 incidents of kidnappings and a homicide rate that climbed to almost 60 deaths per 100,000 people that same year (Insight Crime, 2013; Mapping Militants, 2019). The late 1990s saw the Colombian government and the FARC enter peace negotiations once again. In this round of negotiations, President Pastrana ceded land to the FARC in Southern Colombia in an effort to persuade the group to enter into formal negotiations (Britannica, n.d.). However, the group used this territory to detain kidnapping victims while overseeing large coca plantations and to rearrange, enlist, prepare, and launch attacks on neighboring towns (Insight Crime, 2013). These peace talks coincided with the commencement of policies outlined in Plan Colombia—an $11 billion U.S. aid package intended to assist the Colombian government in combatting guerilla violence and drug trafficking (Shifter, 2012). There is ongoing debate on the success of Plan Colombia as the program did not eradicate guerilla violence or drug activity. However, some have attributed the increased strength of the Colombian government and military, along with the commencement of the FARC's decline to Plan Colombia (Smith, 2010; Arsenault, 2015).

Following the commencement of Plan Colombia, the second round of peace talks came to an end in 2002 when newly elected President Uribe remilitarized the previously ceded territory after the FARC hijacked a plane and took captive a Senator who was a passenger on the flight (Britannica, n.d.). President Uribe took the FARC head on by strengthened the army, bolstering police intelligence, positioning security forces in practically all municipalities and establishing incentive programs for rebels to turn themselves in to the authorities (Insight Crime, 2013). Uribe's offensive against the

FARC is attributed to a reduction in violence within Colombia and a significant decrease in FARC membership alongside the group's weakening (Leech, 2015).

In 2010, a new President took office. Juan Manuel Santos and his government announced in August of 2012 that it initiated exploratory talks with the FARC (BBC, 2012). During the peace talks, the FARC publicly rejected kidnapping, although it continued to implement the practice, therefore leading the Colombian government to postpone the cease-fire in November of 2014 (Mapping Militants, 2019; BBC, 2014). This was followed by a declaration of a unilateral ceasefire by the FARC in July 2015, which prompted the Colombian government to stop conducting air strikes on the FARC's base camps (Mapping Militants, 2019). A final agreement was reached between the two parties in August 2016 (McDermott, 2016). According to the Center of International Security and Cooperation's Mapping Militants Project at Stanford University (2019), the accords had five chief points of emphasis:

> (1) creating "Comprehensive Rural Reform;" (2) regaining "Political Participation;" (3) demobilizing in a "Bilateral and Definitive Ceasefire and Cessation of Hostilities and Laying down of Arms" that assures the "Reincorporation of the FARC-EP into civilian life" and finds a "Solution to the Illicit Drug Problem;" (4) affirming a "Victims" agreement with a "Comprehensive System for Truth, Justice, Reparations, and non-Recurrence;" and (5) formalizing "implementation and verification mechanisms."

In June of 2017, the FARC formally concluded its disarmament process, which saw United Nations observers monitor the abdication of over 7,000 weapons (BBC, 2017). While the FARC have formally withdrawn from the areas they controlled, not all

members followed the terms of the accords and have instead maintained their criminal undertakings. Estimates by Posada (2018) indicate that as of December 2018, there were up to 3,000 FARC dissidents who continued to use the FARC's identity for their drug trafficking and militant operations. The ex-FARC Mafia, a term used to refer to the FARC dissidents, are said to be present in both Colombia and Venezuela (Mapping Militants, 2019). The effect of the Peace Accords signed by the Colombian government and the FARC will be evaluated in part II of this chapter, while part I of this chapter will focus on HVT strikes against the FARC.

**Leadership**

Before the group demobilized, the FARC was considered to be a hierarchical group with a well-defined arrangement and line of command (Insight Crime, 2013). The group was led by a general secretariat made up of seven senior military members (Aftergood, 2008). The secretariat led seven territorial blocs; the smaller blocs made up of four to five fronts — the specific groups that engage in combat. While the larger blocs were made up of 15 to 20 fronts as each front was composed of columns containing up to one hundred militants (Rabasa & Chalk, 2011). In an effort to debilitate the FARC during the conflict, the Colombian government dealt several major setbacks to the rebel group's leadership.

In March 2008, the Colombian military conducted an air strike that killed secretariat member, and second in command of the FARC, Luis Édgar Devia Silva, alias "Raúl Reyes" and several other guerrilla combatants (Romero, 2008). Two and a half years later, the Colombian military dealt another blow to the FARC's leadership by successfully carrying out another air strike that killed Víctor Julio Suárez Rojas alias

"Mono Jojoy" (BBC, 2010). This was another significant blow to the FARC as Mono Jojoy had become the group's second in command and was the group's Eastern Bloc Commander at the time of his death. A year and two months after Mono Jojoy's killing, the FARC was dealt its biggest blow. In November 2011, the leader of the FARC at the time, Guillermo León Sáenz Vargas alias Alfonso Cano was killed in a military raid (BBC, 2011). With the death of Alfonso Cano, Rodrigo Londoño Echeverry, alias "Timochenko" became the group's leader (Insight Crime, 2013) and remained the group's leader through the peace negotiations with the Colombian government. With the successful targeted strikes against the FARC leaders by the Colombian government in mind, part I of this chapter seeks to analyze the effect that eliminating these leaders had on terrorist incidents perpetrated by the group.

**HVT Strikes Against Armed Insurgents in Colombia**

Chapter 2 reviewed the literature on the implementation of targeted strikes against insurgent group leaders in many arenas. This section will focus specifically on the lone study that has previously analyzed the use of HVT strikes against the FARC. Morehouse (2014) analyzed the effect that HVT strikes against the FARC had on the amount and severity of attacks perpetrated by the FARC following successful strikes against its leaders. Using daily data with 2,922 observations between 2004 – 2011, and a zero-inflated negative binomial model, this study found that the targeted killing of eight leaders, six of which were considered HVTs, was associated with a decrease in the number of FARC attacks while having no impact on the severity of attacks perpetrated by

the group. It is important to note that of the six HVTs that were targeted, only three were members of the Secretariat.

The study conducted by Morehouse (2014) is the first statistical test of the effectiveness of Colombia's targeted killing program. The study presented here will be the second study that assesses the efficacy of Colombia's targeted killing program and will address several important factors that were not possible for Morehouse (2014) to evaluate. Since the Morehouse (2014) study employed data through 2011, the analysis was not capable of assessing the long-term effects of FARC Secretariat members killed in late 2010 or 2011 as is the case of the targeted killings of former Bloc Commander, Jorge Briceño Suárez (killed on September 22, 2010) and former Chief of Staff, Alfonso Cano (killed on November 4, 2011). To address this shortcoming, this study will analyze data through 2012 in order to assess the long-term effects that HVT strikes had on the amount and intensity of attacks perpetrated by the group after a HVT was killed — the methods section will elaborate on the need to limit the analysis to July 2012. Similarly, this study will evaluate the effect that the targeted killing of Secretariat members alone has on terrorist incidents and attack intensities, unlike Morehouse (2014) who also analyzed strikes against HVTs who were non-Secretariat members. In addition, this evaluation of the efficacy of Colombia's targeted killing program will be compared to the efficacy of the peace accords signed between the Colombian government and the FARC from part II of this chapter. A comparison of this sort has never been done before, therefore this study will address a relevant and significant gap in the Colombian conflict literature.

**Outcomes of HVT Strikes Against Armed Insurgent Groups**

Chapter 2 reviewed the literature of targeted strikes against armed insurgent groups and revealed the different outcomes of this policy. This section will discuss the theoretical explanations for the different outcomes of HVT strikes against armed insurgent groups. A noteworthy number of studies have found an association between HVT strikes against armed insurgent leaders and different types of outcomes (see Figure 4.1.1). The neutralization of a HVT, either by killing or capture is related to four specific outcomes: deterrence, the disruption effect, the backlash hypothesis and the substitution effect. First, related to deterrence, repressive actions by government officials increases the harm of collective action to challengers and operates as a careful discouragement to participate in hazardous activism (Hafez & Hatfield, 2006). Several researchers indicate that rational actors subject to set controls will determine the costs and benefits of different methods and select those that are probable to amplify their expected function (Sandler et al. 1983; Mason 1984; Muller and Opp, 1986). Cost-benefit calculations are influenced by the significance of the tactics being employed, the likelihood of triumph, and the observed significance of personal participation to attaining the general objectives of the organization (Finkel et al. 1989; Muller et al. 1991). Hafez and Hatfield (2006) point out that repression by government forces that minimizes the probability of an organization's success or the ability of individuals within the group to make a difference, will deter others from engaging in hazardous activism. Moreover, when a government engages in highly repressive tactics, it is probable that chances for collective actions will remain minimal, the likelihood of success will be insignificant, and the sacrifices will be elevated (Muller & Weede, 1990). Therefore, rational actors who wish to confront the government will way their options before they act.

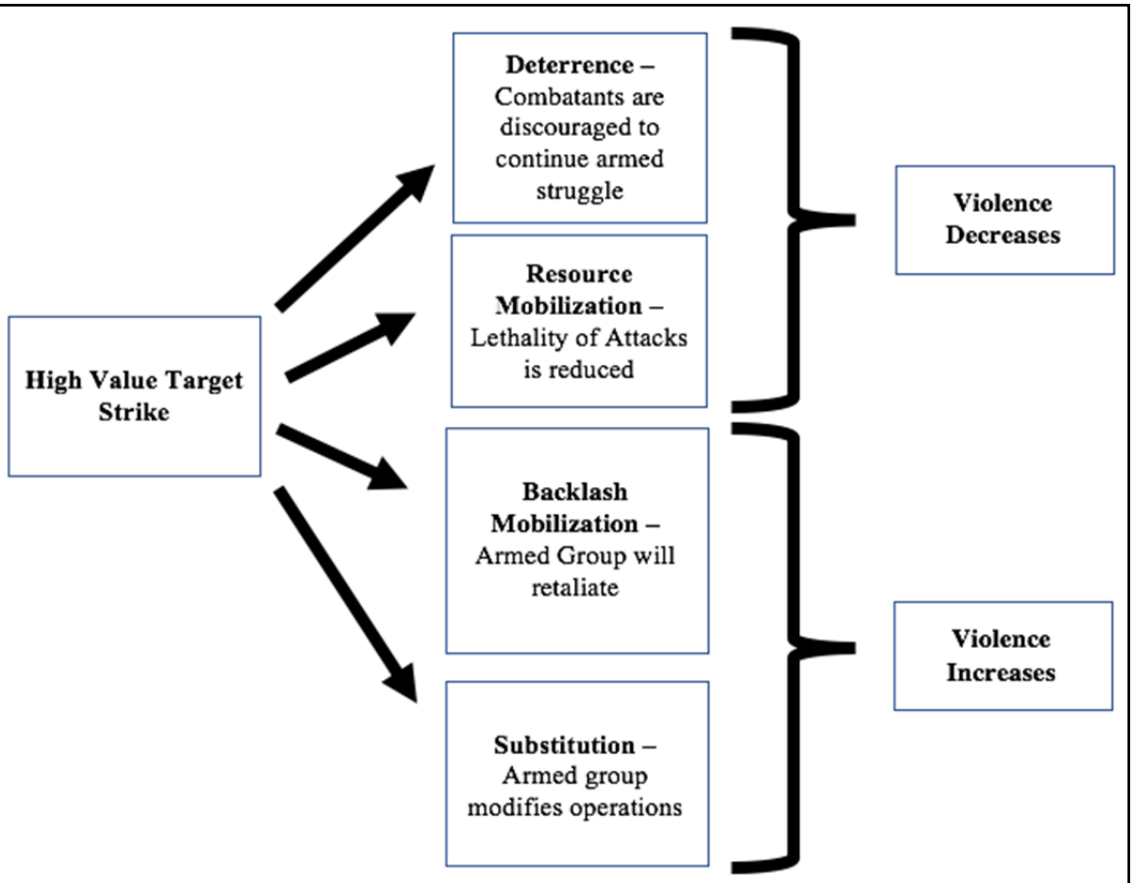


**Figure 4.1.1**: Sequence of possible outcomes related to the implementation of High Value Target Strikes against Armed Insurgent Groups.

Lichnach (1987) focused on the steadiness of repressive tactics and its link to accommodative tactics. According to Lichnach (1987), if regimes engage in repressive tactics against violent approaches and accommodate nonviolent tactics, then armed insurgent groups will replace violent actions for nonviolent ones to evade the excessive harms of violent actions and pursue more effectual methods to realize their goals. Thus, the constant use of repressive techniques that do not yield to violent tactics will increase harm to armed insurgent groups and will fail to provide any significant advances to the rebel group's goals. Because of this, violent tactics by the insurgent group will decrease in the long run as the groups adjusts to a more rewarding approach.

In terms of the Colombia – FARC conflict, the aforesaid studies would postulate that the constant implementation of HVT strikes against known FARC leadership will increase the cost of violence and deter combatants from ensuing the struggle, or at the very least, encourage the group to replace its approach. The increased use of targeted killings against the leadership of the FARC sends a message to rebel groups in Colombia that the government is committed to continue its military campaign while rejecting to give into the demands of rebel groups – i.e., adopt a Marxist-style government. Therefore, as repressive tactics endure, the government communicates a commitment to not give into the terror perpetrated by rebel groups. Lastly, targeting specific leaders with significant occupational roles within rebel organizations responsible for terrorist attacks against the state decreases the prospect of enticing the general population into the fight and highlights the vainness of violent tactics by rebel groups to potential combatants.

Second, the disruption effect indicates that repressive tactics by government forces disrupt the ability of armed insurgent groups to mobilize and plan attacks. This idea is rooted in the resource mobilization theory, which asserts that groups need a degree of organizational competence and material resources to coordinate and rally aggrieved individuals as grievances alone are inadequate to generate rebellious collective action (McCarthy & Zald 1973, 1977; Tilly, Tilly & Tilly, 1975). Therefore, repressive tactics eliminate important movement resources or makes it challenging for the group to obtain them (Hafez & Hatfield, 2006), consequently disrupting the mobilization of insurgents to take actions, or in this case of the FARC, coordinate and execute attacks.

In the case of the Colombia – FARC conflict, the resource mobilization theory suggests that targeted killings may decrease the amount and lethality of attacks over time

as insurgent groups undergo the loss of veteran combatants and high-ranking officials and reassign valuable resources to keep the continuing management safe. As Hafez and Hatfield (2006) indicate, instead of insurgent groups investing their time and money on recruiting, training, and transporting combatants to execute operations, such as attacks, they now have to devote their resources on acquiring safe houses, exchanging vehicles, and means of communication to evade exposure, and rearranging the cells that have been interrupted by the targeted strike. Furthermore, removing high ranking leaders responsible for the logistics of attacks will decrease the intensity of future acts of violence as the skills necessary to plan and coordinate sophisticated attacks are not instantly learned. Therefore, the aggregate long-term effect is to decrease violence, or at the very least, diminish the intensity of violent attacks. Given the link between the disruption of a group and the group's ability to plan attacks, I hypothesize that HVT strikes against the FARC will reduce the lethality of the group's attacks.

***Research questi*on [Q3]: *Did the targeted killings of Alfonso Cano, El Mono JoJoy and Raul Reyes decrease the intensity of terrorist attacks perpetrated by the FARC?***

Third, the backlash theory is the idea that repressive tactics by the state leads dissident groups to "backlash" with elevated levels of violence (Francisco 1995, 1996). Francisco (1995) explains that backlash is the rapid, immense, and increasing deployment in reaction to severe repression. According to Francisco (2004), when government forces engage in acts of harsh coercion, these acts serve as pivotal junctures for backlash mobilization if (1) the repressive tactics are disseminated to the general public; (2) there

is permanency in leadership or new leadership develops; and (3) rebels can come up with new tactics that decrease the danger of similar repressive actions in the future. Under these conditions, repressive tactics generate backlash.

Regarding the Colombia – FARC conflict, unlike the two previous outcomes, the backlash theory suggests that targeted killings will escalate violence. Specifically, targeted killings against armed insurgent groups such as the FARC do not remove the entire leadership of the group in one operation, therefore sustaining Francisco's circumstance of permanency in leadership. Leadership that does not fall victim to a targeted strike can undertake more safeguards to decrease the risk of targeted killings in the future, therefore allowing leaders to organize further attacks in revenge of previous ones (Hafez & Hatfield, 2006). Hafez and Hatfield (2006) also point out that established rebel groups are prone to cast a targeted killing as a deceitful and unlawful act that mandates an adequate vengeful reaction. Consequently, targeted killings may generate an increase in violence and encourage conditions that allow for the future enlistment of insurgents. Given the relationship between repressive tactics by government forces and backlash by armed insurgent groups, I hypothesize that HVT strikes against the FARC will increase the number of attacks perpetrated by the group.

***Research question [Q4]: Did the targeted killings of Alfonso Cano, El Mono JoJoy and Raul Reyes increase terrorism perpetrated by the FARC?***

Lastly is the concept of the substitution effect, which asserts that insurgent groups modify their operations to carry out attacks that are less difficult to execute in terms of relative risks to previous operations (Hafez &Hatfield, 2006). If the secondary method is

equivalent in desired objectives as the original methods, and if counterterrorism strategies do not attempt to intensify the relative costs of the new methods, then insurgent groups will swap the second, less risky activity for the more hazardous original attack methods. If security forces are only attacking combatants and fail to attack their source of revenue and resources, insurgent groups will adjust to the repressive tactics employed by government forces and modify their tactics to fairly less hazardous activities. Therefore, a decrease in one violent approach does not automatically indicate that violence in general has been reduced.

In the case of the Colombia – FARC conflict, the substitution effect indicates that targeted killings of important leaders and combatants without supplementary tactics impacting the general revenue and resource stream of the organization will result in the FARC making an adjustment, in which the group will modify their methods to execute more attacks in the long-haul. However, when merging targeted killings with other military operations that weaken the FARC's ability to carry out attacks, kill or arrest their combatants, and obstruct their ability to amass weaponry, not only does this deny the group of important members, but it will also take away the group's ability to carry out future attacks.

Numerous studies have found the use of HVT strikes against the leaders of armed insurgent groups to be a successful tool while others have found it to be unsuccessful. Some theorize that repressive tactics, such as targeted killings against rebel leaders will function as a cautious discouragement for other members to participate in hazardous activism (Sandler et al., 1983' Mason, 1984; Muller & Opp, 1986; Muller & Weede, 1990). An observed outcome that is also favorable to the government at odds with an

armed insurgent group is that targeted killings disrupt a group's ability to carry out attacks or may diminish the success rate of future attacks (David, 2002' Byman, 2006; Williams, 2010; Wilner, 2010; Patucci, 2011; Johnston, 2012; Jordan, 2014; Long, 2014). A detected outcome that is not favorable to the governments at odds with insurgent groups is that groups who are attacked will retaliate with greater levels of violence (Kaplan et al., 2005; Hafez & Hatfield, 2006; Spencer, 2006; Mannes, 2008; Williams, 2010; Wilner, 2010; Jordan, 2014). Other studies have found that the targeted killings of leaders may lead groups to adjust and innovate new ways to continue carrying out their militant campaign (Moghadam, 2013) which is why several researchers have advocated for the use of targeted killings to be accompanied by other military strategies (Frankel, 2010; Lamb & Munsing, 2011; Hepworth, 2014).

These studies display varying outcomes when government forces carry out targeted killings against armed insurgent groups which is why more studies of this nature are needed. Moreover, none of the aforementioned studies have compared the outcomes of targeted killings with the signing of a peace accord, in terms of their effect on violence. Consequently, the purpose of this study is to evaluate the effect that targeted killings have on terrorist incidents and the intensity of the attacks and compare it to the results of the results analyzing the effect of the peace accords on terrorist incidents and attack intensities.

## Methods

### *Data*

This study analyzes data drawn from the Global Terrorism Database (GTD) made available by The University of Maryland's National Consortium for the Study of Terrorism and Responses to Terrorism (START). The GTD provides data on domestic and international terrorist attacks around the world from 1979 through 2018 and is considered to be the most comprehensive unclassified database on terrorist attacks in the world (START, 2021). This study analyzes whether HVT strikes have an impact on terrorist incidents and the intensity of terrorist incidents. The variables of interest that were analyzed are the frequency of terrorist incidents and attack intensity of terrorist incidents. In order to assess the attack intensity of terrorist incidents, the following formula will be used A = *(F+I)/T* in which A= the attack intensity rating, *F* = fatalities, *I* = injuries, and *T* = total incidents. Therefore, there are two GTD-based dependent variables, (1) the number of terrorist incidents, and (2) the attack intensity rating of those terrorist incidents. The independent variable of interest was the intervention of a HVT strike and was coded as a dichotomous step-function with all months preceding the intervention coded as 0 and months post-intervention coded as 1 because it was theorized that the intervention would directly affect the dependent variable. There will be two interventions analyzed, first is the targeted strike that killed Raul Reyes in March of 2008, while the second intervention that was analyzed is the period which will be referred to as "period of killings" as there were three several high-ranking FARC members (Raul Reyes, Jorge Briceño Suárez, and Alfonso Cano) that were killed within a three-year span beginning with the 2008, March killing of Raul Reyes. The period of strikes ends in July of 2012 because the FARC and

the Colombian government began exploratory peace talks in August 2012. These exploratory peace talks were subsequently followed by a ceasefire by the FARC the following November. Since ceasefires have been shown to produce a significant decline in violence (Williams et al., 2020), including the period following the announcement of the ceasefire would affect terrorism trends during the period of strikes.

### *Analysis*

To offer a robust statistical methodology to link such causal relationships related to the effect of a HVT strike on terrorist incidents and their intensity rating, an AutoRegressive Integrative Moving Average (ARIMA) model was generated to model possible preceding trends in the pre-intervention period from intervention effects. This type of analysis requires a suggested minimum of 48 pre-intervention periods to successfully establish a dependable model (McCleary & Hay, 1980), making it idyllic for the amount of pre and post intervention data points included in the current analysis. The first intervention that was analyzed, the targeted killing of Raul Reyes, consists of 98 pre-intervention periods and 30 post-test periods, while the second intervention that was analyzed, "the period of killings" is composed of 98 pre-intervention periods and 53 post-intervention periods. The first intervention is limited to 30 post-test periods so that there is no overlap with the post-test period of intervention 2.

Four separate ARIMA models were created: Model 1 analyzes terrorist incident count related to the intervention of killing Raul Reyes (March, 2008), Model 2 examines attack intensity rating of terrorist incidents related to the intervention of killing of Raul Reyes, Model 3 analyzes terrorist incident count related to the "period of killings"

intervention (March, 2008), and Model 4 evaluates attack intensity rating of terrorist incidents related to the "period of killings" intervention. SPSS was used to create the four ARIMA models, through its iterative model-building strategy to verify whether the series had a constant variance over time, whether they were trended or drifted in either direction, or whether they exhibited seasonal fluctuations (IBM, 2015). Model 1 and 2 are both related to the intervention of killing Raul Reyes. Model 1 (number of terrorist incidents) specified that there was a stationary variance throughout the series and a natural logarithmic transformation was not necessary. The model showed that the series was trended, thus, the series was differenced once to smooth the entire series. Lastly, the model showed that the data displayed one moving average parameter. Therefore, the best-fitting model for Model 1 was determined to be ARIMA (0,1,1). Model 2 (attack intensity rating of terrorist incidents) also indicated that there was a stationary variance throughout the series therefore a natural logarithmic transformation was not necessary. The model did not require first-order differencing as the series was not trended and the model indicated that the data did not show seasonal variation. Thus, the best-fitting model for Model 2 was determined to be ARIMA (0,0,0).

Both Model 3 and 4 are related to the "period of killings" intervention. Model 3 (number of terrorist incidents) denoted that there was a stationary variance throughout the series which made a natural logarithmic transformation not necessary. The model showed that the series was trended, thus the series was differenced once to smooth the entire series. Finally, the model showed that the data displayed one moving average parameter. As a result, the best-fitting model for model 3 was determined to be ARIMA (0,1,1). Model 4 (attack intensity rating of terrorist incidents) similarly indicated that there was a stationary

variance throughout the series therefore making a natural logarithmic transformation unnecessary. The model indicated that the series was not trended and did not display seasonal variation, thus first-order differencing was not required. Consequently, the best-fitting model for Model 4 was determined to be ARIMA (0,0,0).

***Data for Spatial and Temporal Analysis of HVT Intervention against the FARC***

The GTD terrorist incident data for FARC attacks in Colombia, January 2000 – July 2012 used in the time series analysis of HVT strikes was also employed for the spatial and temporal analysis of terrorist incidents. The GTD dataset includes information about the date of attack, the region, country, state/province, city/municipality, perpetrator characteristics, event type, facility, deceased count, injury count, hostage count, victim type, subject (brief description of the event), and an event summary. Using ESRI's ArcMap 10.8 software, the Colombia terrorist incident dataset was joined with a Colombia municipality location dataset provided by GeoNames. Once the preparation of the dataset was complete, spatial analysis techniques were employed to the terrorist incident dataset to identify clusters of terrorist incidents and to visualize the development and evolution of these clusters over the twelve-year study period. First, choropleth maps of the number of terrorist incidents were created for the twelve-year study using the Jenks natural breaks optimization method. One map was created for the pre-test period and one for each post-test (the killing of Reyes and the period of strikes), while two maps were created indicating the percentage change in terrorist incidents perpetrated by the FARC between both pre/post-test analyses. Then, using GeoDa 1.18 software, the local indicator of spatial association (LISA) and Getis-Ord Hot Spot Analyses were conducted on the data.

***Research question [Q5]: Did the targeted killings of Alfonso Cano, El Mono JoJoy and Raul Reyes change the geography of the general incident distribution of terrorist incidents perpetrated by the FARC??***

### *Spatial and Temporal Analysis*

The LISA analysis employing the Local Moran's I tool identified areas with clusters and spatial outliers in the dataset. This instrument allows for the categorization of significant locations as High-High and Low-Low spatial clusters, and High-Low and Low-High spatial outliers (Anselin, 2020). Additionally, Hot-spot analyses utilizing the Getis-Ord $G_i^*$ identified cities with high or low concentrations of terrorist incidents in Colombia. The $G_i^*$ statistic recognizes either clustering of above average values (hot spots) or below average values (cold spots). Individual municipalities in Colombia were used as spatial units in this analysis, and data values were aggregated for each municipality (the number of incidents in the municipality). The queen criterion of contiguity was employed for both spatial analyses as this spatial weight is recommended for polygons with irregular shapes (Anselin, 2020a), as is the case for the shapes of municipalities in Colombia. The queen criterion is more encompassing than other spatial weights and delineates neighbors as spatial units with a common edge or a common vertex (Anselin, 2020a). Detection of terrorist hot spots was necessary to reveal the spatial core of terrorist activity spaces, particularly to identify if activity spaces shifted after the targeted killing of an insurgent leader or period in which several leaders are

targeted and killed by government forces. Maps employing the local moran's I and the hot-spot analyses were generated for the pre-test period and both post-test periods.

## Results

### *Summary of Time Series*

To provide a vigorous statistical approach to identify causal relationships, four interrupted time series ARIMA models were generated to identify intervention effects. Figures 4.1.2 and 4.1.3 display the entire time series data (pre-test, killing of Raul Reyes, and period of killings). Tables 4.1.1 and 4.1.2 are related to the killing of Raul Reyes. Table 4.1.1 indicates that the killing of Reyes had a positive statistically significant effect on the number of terrorist incidents, showing that after Reyes' killing, terrorist incidents increased by 6 incidents per month. Table 4.1.2 specifies that the killing of Reyes had a negative statistically significant effect on the attack intensity of terrorist incidents, indicating that following the intervention, the attack intensity rating of terrorist incidents decreased by 4 per month.

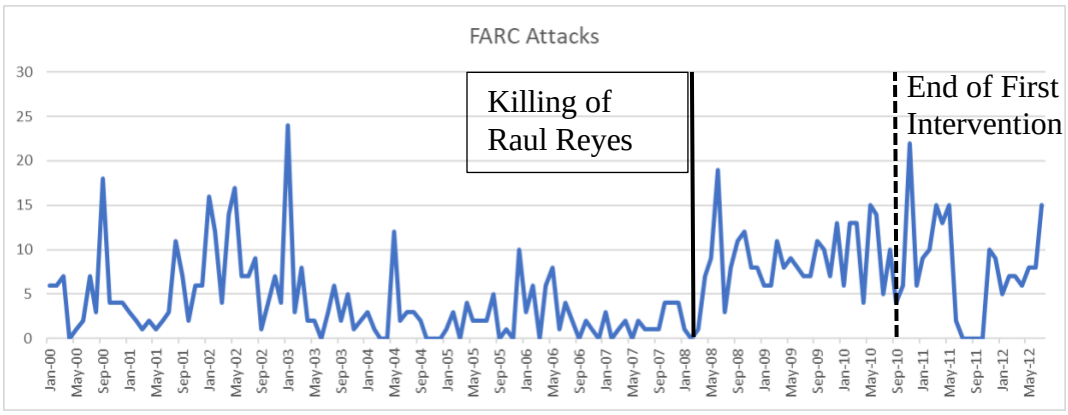


**Figure 4.1.2:** FARC terrorist incidents over time (N=151 months, January 2000 – July 2012). Note: Black solid line represents start of intervention 1 and intervention 2. The black dotted line represents the finalization of intervention 1. Intervention 2 is finalized in July 2012.

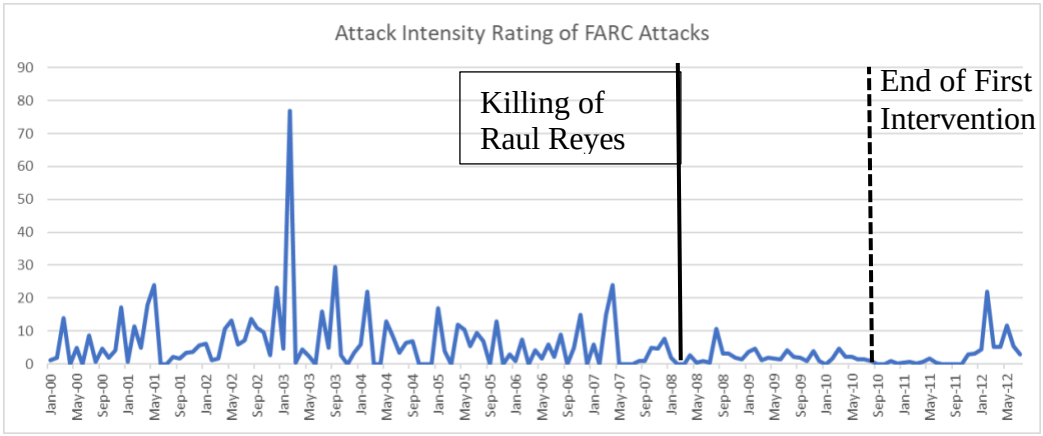


**Figure 4.1.3:** Attack Intensity Rating terrorist incidents by the FARC over time (N=151 months, January 2000 – July 2012). Note: Black solid line represents start of intervention 1 and intervention 2. The black dotted line represents the finalization of intervention1. Intervention 2 is finalized in July 2012.

**Table 4.1.1.** (Model 1) Maximum-likelihood coefficients predicting the impact of Reyes' killing on the number of Terrorist incidents perpetrated by the FARC in Colombia (N= 128 Months, January 2000 – August 2010).

| Model Parameter | Estimate | Standard Error | *t*-value | *p*-value |
|---|---|---|---|---|
| Moving Average Lag 1 | .872 | 0.046 | 19.035 | .000 |
| Reyes' Killing Numerator Lag 0 | 6.250 | 2.009 | 3.112 | .002 |

Model Description: ARIMA (0,1,1). Ljung-Box Q Statistic (18) = 15.711 ($p = .544$).

**Table 4.1.2.** (Model 2) Maximum-likelihood coefficients predicting the impact of Reyes' killing on the Attack Intensity Rating of Terrorist incidents perpetrated by the FARC in Colombia (*N*= 128 Months, January 2000 – August 2010).

| Model Parameter | Estimate | Standard Error | *t*-value | *p*-value |
|---|---|---|---|---|
| Attack Intensity Rating Constant | 6.661 | 0.864 | 7.711 | .000 |
| Reyes' Killing Numerator Lag 0 | -4.396 | 1.784 | -2.464 | .015 |

Model Description: ARIMA (0,0,0). Ljung-Box Q Statistic (18) = 15.712 ($p = .613$).

Tables 4.1.3 & 4.1.4 are related to intervention of the period of killings. Table 4.1.3 indicates that the period of killings had a positive statistically significant effect on the number of terrorist incidents, showing that during this period, terrorist incidents increased by 6 incidents per month. Thus, the response to research question *[Q4]* is yes — the targeted killings of Alfonso Cano, El Mono JoJoy and Raul Reyes increased terrorist incidents perpetrated by the FARC. Table 4.1.4 specifies that the period of killings had a negative statistically significant effect on the attack intensity of terrorist incidents, indicating that during this period, the attack intensity rating of terrorist incidents decreased by 4 per month. Therefore, these results indicate that the answer to research

question *[Q3]* is also yes — the targeted killings of Alfonso Cano, El Mono JoJoy and Raul Reyes decreased the intensity of terrorist attacks perpetrated by the FARC.

**Table 4.1.3.** (Model 3) Maximum-likelihood coefficients predicting the impact of the period of killings on the number of Terrorist incidents perpetrated by the FARC in Colombia (*N*= 151 Months, January 2000 – July 2012).

| Model Parameter | Estimate | Standard Error | *t*-value | *p*-value |
|---|---|---|---|---|
| Moving Average Lag 1 | .875 | .041 | 21.110 | .000 |
| Period of Killings Numerator Lag 0 | 6.243 | 2.134 | 2.926 | .004 |

Model Description: ARIMA (0,1,1). Ljung-Box Q Statistic (18) = 14.777 ($p = .612$).

**Table 4.1.4.** (Model 4) Maximum-likelihood coefficients predicting the impact of the period of killings on the Attack Intensity Rating of Terrorist incidents in Colombia perpetrated by the FARC (*N*= 151 Months, January 2000 – July 2012).

| Model Parameter | Estimate | Standard Error | *t*-value | *p*-value |
|---|---|---|---|---|
| Attack Intensity Rating Constant | 6.661 | .818 | 8.142 | .000 |
| Period of Killings Numerator Lag 0 | -4.095 | 1.381 | -2.965 | .004 |

Model Description: ARIMA (0,0,0). Ljung-Box Q Statistic (18) = 15.865 ($p = .602$).

***Summary of Spatial Terrorist Clusters***

The results of the Jenks classification for the raw number count of terrorist incidents perpetrated by the FARC for every time period, in addition to the percent change by municipality are displayed in Figure 4.1.4. Results indicate that before the Reyes strike was undertaken, Bogota was the only municipality that exhibited the amount of terrorist incidents within the top tier (n=30), followed by Cali (n=18) and Medellin (n=15) who were both in the second highest classification. In the period following

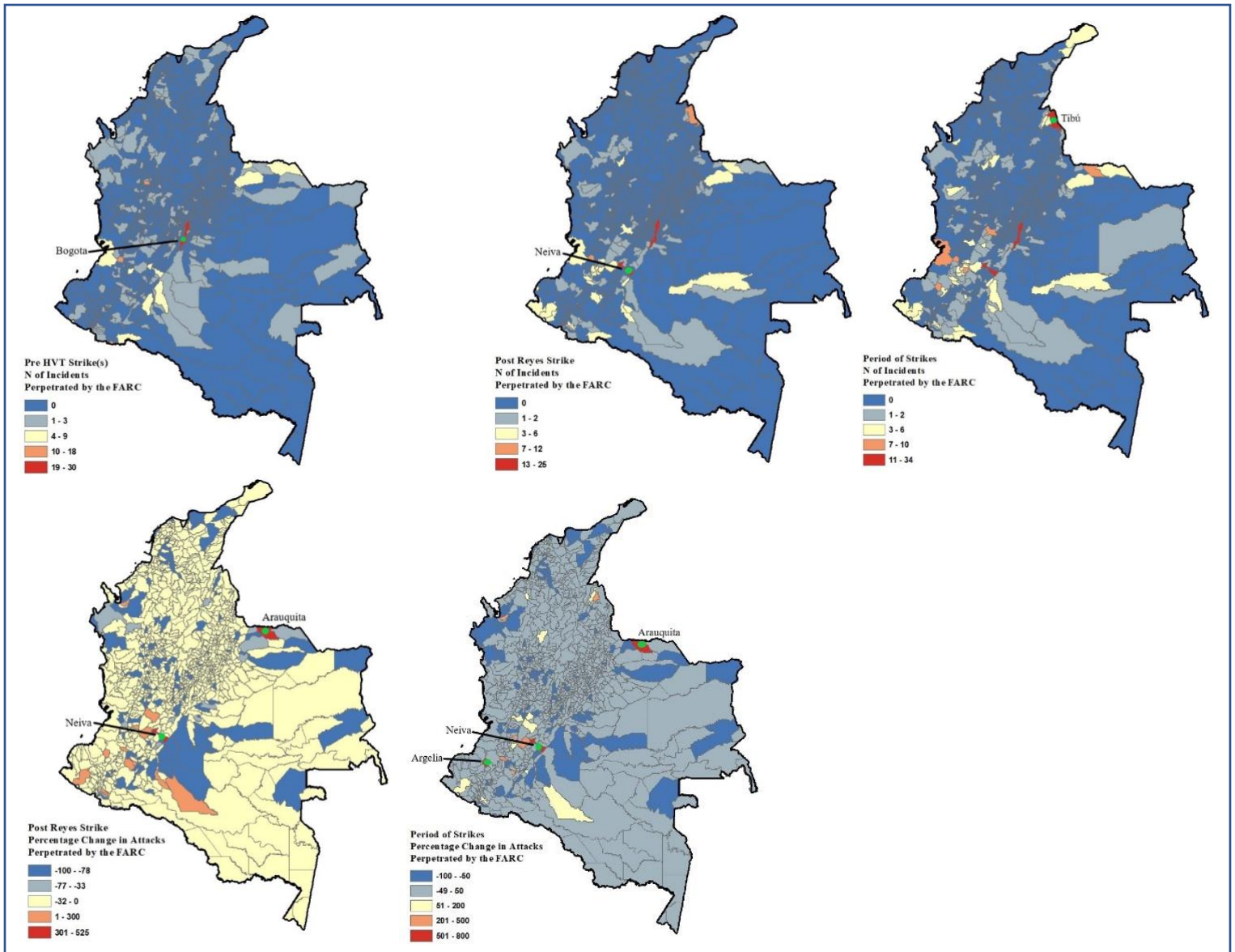


**Figure 4.1.4:** N and percentage change in terrorist incidents by municipality perpetrated by the FARC before Reyes Strike, after Reyes strike, and during period of strikes (N=151 months, January 2000 – July 2012).

the Reyes strike, Neiva (n=25) and Bogota (n=22) were the two municipalities that fell into the highest classification. Cali maintained itself in the second category of incidents (n=10) along with Tibú (n=12). During the period of strikes, Neiva (n=34), Bogota (n=25), and Tibú (n=25) made up the top category of incidents. The second tier of incidents consisted of Cali (n=10), Arauquita (n=9), Ibagué (n=8), Toribio (n=7), Buenaventura (n=7), and Argelia (n=7). The three municipalities that exhibited the highest increase in terrorist attacks were Neiva, Arauquita, and Argelia (Tables 4.1.5 & 4.1.6). Appendix A displays the municipalities that exhibited an increase in terrorist incidents and those that began to exhibit attacks following the Reyes strike. Table 4.1.6 displays the 20 municipalities that exhibited an increase in terrorist incidents between the pre-intervention period and the period of strikes. Appendix B displays the municipalities that exhibited an increase in terrorist incidents and those that began to exhibit attacks during the period of strikes.

| Municipality | Attacks (N) Pre-Reyes Strike | Attacks (N) Post-Reyes Strike | Percent Change Total N |
|---|---|---|---|
| Neiva | 4 | 25 | — |
| Arauquita | 1 | 6 | — |
| Planadas | 1 | 4 | — |
| La Montañita | 1 | 3 | — |
| San Agustín | 1 | 3 | — |
| Barbacoas | 1 | 3 | — |
| Florida | 1 | 3 | — |
| Isnos (San José de Isnos) | 1 | 3 | — |
| Popayán | 1 | 3 | — |
| Cartagena del Chairá | 1 | 2 | — |
| Chaparral | 1 | 2 | — |
| Funes | 2 | 4 | — |
| Puerres | 2 | 4 | — |
| Apartadó | 1 | 2 | — |
| Argelia | 1 | 2 | — |
| TOTAL | 20 | 69 | 245% |

**Table 4.1.5:** Municipalities that exhibited an increase in the N of FARC attacks following the Reyes strike.

| Municipality | Attacks (N) Pre-Period of Strikes | Attacks (N) Post-Period of Strikes | Percent Change Total (N) |
|---|---|---|---|
| Neiva | 4 | 34 | — |
| Arauquita | 1 | 9 | — |
| Argelia | 1 | 7 | — |
| Planadas | 1 | 6 | — |
| El Tarra | 1 | 5 | — |
| Funes | 2 | 5 | — |
| Puerres | 2 | 5 | — |
| Apartadó | 1 | 4 | — |
| Florida | 1 | 4 | — |
| Isnos | 1 | 4 | — |
| Popayán | 1 | 4 | — |
| Teorama | 2 | 4 | — |
| Anorí | 1 | 3 | — |
| Barbacoas | 1 | 3 | — |
| Tuluá | 1 | 3 | — |
| Cartagena del Chairá | 1 | 2 | — |
| Chaparral | 1 | 2 | — |
| Guadalupe | 1 | 2 | — |
| Roncesvalles | 1 | 2 | — |
| San Carlos | 1 | 2 | — |
| TOTAL | 26 | 110 | 323% |

**Table 4.1.6**: Municipalities that exhibited an increase in the N of FARC attacks during the Period of Strikes.

Getis-Ord hot-spot analyses and Moran's I tests were conducted on the pre-intervention incident data and both post-intervention incident data. These results are displayed in Figures 4.1.5 & 4.1.6. Hot spot $G_i^*$ tests indicate an increase in the number of clusters when comparing the pre-intervention period and the Reyes strike period. The pre-intervention period includes 83 municipalities with a high concentration of incidents and increased to 97 following the Reyes strike — a 17% increase. During the post-

intervention period of the Reyes strike, three clusters emerged that include 1) the municipalities that surround the port city of San Andrés de Tumaco (Tumaco) in the southwestern department of Nariño, 2) the municipalities that surround the town of Caldono in the department of Cauca, and 3) the municipalities surrounding Tibú in the northeastern department of Norte de Santander.

Local Moran's I tests comparing the pre-intervention period with the post-intervention of the Reyes strike indicate that the number of municipalities with high incident counts that were surrounded by other municipalities with high incident counts increased from 24 to 34 municipalities — a 42% increase (Figure 4.1.6). High-high clusters emerged during the Reyes strike period in the department of Arauca, specifically surrounding the Arauquita municipality, and the municipality of Rioblanco bordering the southeastern corner of the Valle del Cauca department. The number of municipalities with low incidents that were surrounded by other municipalities with low incidents remained at 0 for both periods. The number of municipalities exhibiting a low number of incidents that were surrounded by municipalities with a high number of incidents increased from 67 to 69. Low-high outliers emerged in the municipalities that surround Tumaco, Tibú, and the port city of Buenaventura. Outliers also emerged in the departments of Cauca and Caqueta. Lastly, the number of municipalities exhibiting a high incident count and surrounded by municipalities with a low incident count decreased from 33 to 20.

Getis-Ord hot-spot analyses comparing the pre-intervention and the period of strikes reveals an increase in municipalities exhibiting a high concentration of incidents from 83 to 103 municipalities — a 24% increase (Figure 4.1.5). During the period of

strikes, several clusters emerged that include 1) the municipalities that surround Tumaco, 2) the municipalities that surround the town of Caldono in the department of Cauca, 3) the municipalities that surround Tibú in Norte de Santander, and 4) northeast Antioquia

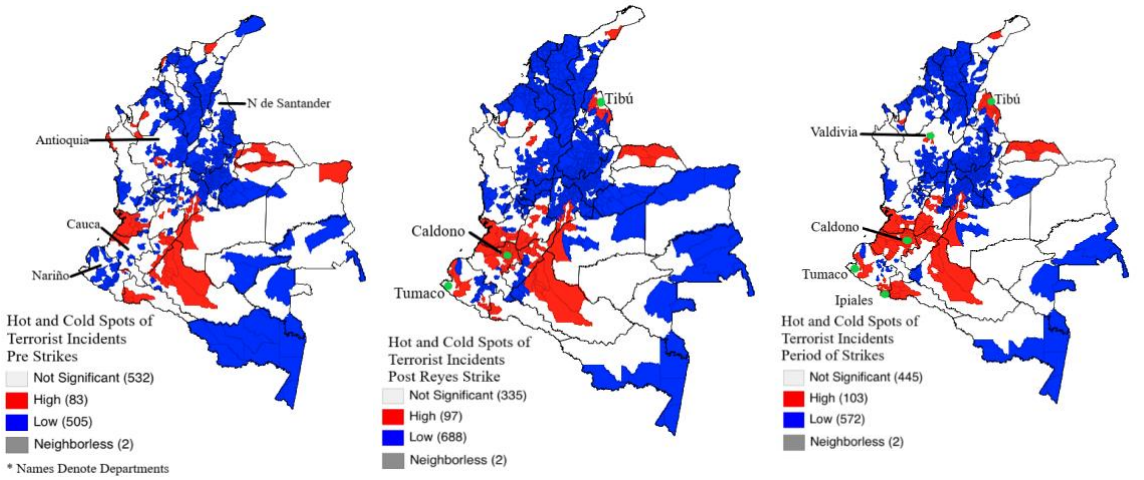


**Figure 4.1.5:** Terrorist incident hotspots perpetrated by the FARC using the Getis-Ord Gi* statistic before Reyes Strike, after Reyes strike, and during period of strikes (N=151 months, January 2000 – July 2012).

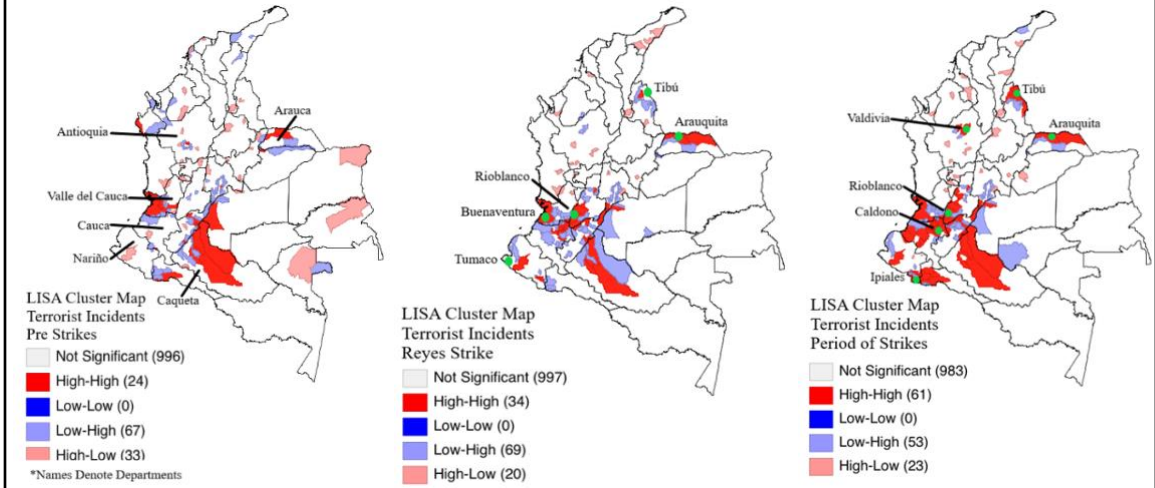


**Figure 4.1.6:** Local Moran's cluster map of terrorist incidents perpetrated by the FARC before Reyes Strike, after Reyes strike, and during period of strikes (N=151 months, January 2000 – July 2012).

Antioquia surrounding the municipality of Valdivia. Additionally, the southern border region near Ipiales, which was already an area with a cluster of incidents during the pre-intervention saw 6 more municipalities in the area exhibit a high concentration of incidents.

Local Moran's I tests comparing the pre-intervention period with the periods of strikes indicate that the number of municipalities with high incident counts that were surrounded by other municipalities with high incident counts increased from 24 to 61 municipalities — a 154% increase (Figure 4.1.6). High-high clusters emerged during the period of strikes in 1) the northern municipalities of Arauca, specifically surrounding Arauquita, 2) northern Cauca near Caldono, 3) northeast Antioquia near Valdivia, and the region surrounding Ipiales in southern Colombia. The number of municipalities with low incidents that were surrounded by other municipalities with low incidents remained at 0 for both periods. The number of municipalities exhibiting a low number of incidents that were surrounded by municipalities with a high number of incidents decreased from 67 to 53. Low-high outliers emerged in the municipalities that surround Tumaco, Tibú, and Buenaventura. Lastly, the number of municipalities exhibiting a high incident count and surrounded by municipalities with a low incident count decreased from 33 to 23. Consequently, these results indicate that the answer to research question *[Q5]* is also yes — the targeted killings of Alfonso Cano, El Mono JoJoy and Raul Reyes changed the geography of the terrorist incidents perpetrated by the FARC.

## Discussion

Results suggest that the targeted killings of FARC Secretariat members by Colombian government forces is associated with an increase of terrorist incidents perpetrated by the FARC while having a negative impact on the severity of attacks perpetrated by the group. In correspondence with previous studies linking targeted strikes with a surge in attacks (Kaplan et al., 2005; Spencer; 2006; Wilner, 2010), the average amount of monthly terrorist attacks significantly increased between the periods before and after the Reyes strike and before and after the period of strikes. These findings are also in agreement with earlier works linking targeted strikes with a decrease in the severity of attacks (Wilner, 2010; Johnston, 2012; Jordan, 2014), as the monthly attack intensity rating significantly decreased between the periods before and after the Reyes strike and before and after the period of strikes. While these findings are consistent with prior research conducted on targeted strikes against organizations in the Middle East, they contradict the lone study by Morehouse (2014) that analyzed targeted strikes against the FARC and found that the strikes significantly decreased attacks while having no effect on the severity of attacks.

The Morehouse study likely had different results than this study for several reasons; first, the period of analysis for the Morehouse study is between 2004 and 2011. Second, HVT strikes against high-ranking leaders that were not a part of the Secretariat were included in the Morehouse analysis. On the other hand, this study only included HVT strikes against Secretariat members. Third, the Morehouse study employed a zero-inflated negative binomial regression. Lastly, the first HVT strike analyzed by Morehouse occurred in early 2004. Therefore, unlike the study undertaken in this chapter,

the analytical tool employed in the Morehouse study did not model the seasonal trends before the first intervention as was done in this study. Similarly, the last HVT strike to be analyzed by Morehouse seems to be the killing of Secretariat member Alfonso Cano in November 2011— Morehouse does not specify Cano by name. As a result, the analysis employed by Morehouse does not allow for the evaluation of long-term effects of the Cano strike as the analysis concludes one month later. Whereas the study in this chapter allows the period of study to run through July 2012 in order to measure the long-term effects of the Cano strike.

The current study provides some support for the backlash theory as the FARC escalated the use of violent attacks following both periods of HVT strikes. However, these findings also support the mobilization theory as the periods following the targeted strikes saw a decrease in FARC's intensity of attacks. Regarding the backlash theory, it appears that the repressive tactics of targeting the FARC Secretariat members prompted the retaliatory attacks by the group as outlined by Francisco (1995; 1996). Similarly, since not all Secretariat members were killed during the Reyes strike or the period of strikes, Francisco's (2004) second condition for the establishment of backlash mobilization seems to have been met as there continued to be a permanency in leadership. It is likely the case that the remaining members of the Secretariat ordered different FARC blocs to carry out attacks as retaliatory measures for the killing of its leaders.

In terms of the mobilization theory, it seems that the targeted killings of Secretariat members may have disrupted the FARC's ability to mobilize and coordinate attacks. While the period following the strikes saw an increase in the number of attacks, it

is possible that these repressive tactics may have hindered critical movement resources or made it difficult for the group to obtain them as the severity of these attacks decreased. The decline in attack severity may have been the result of the organization shifting its resources to keep the remaining management safe. This is similar to the observations made by Hafez and Hatfield (2006) as the attacks following the HVT strikes exhibited a decrease in lethality.

The backlash and mobilization displayed by the FARC following the successful strikes against the Secretariat members draws many parallels with previous studies. For example, similar to the retaliatory attack against the CIA base in Afghanistan following a successful drone strike (Williams, 2010), a significant portion of the increased attacks perpetrated by the FARC following the strikes displayed characteristics of backlash as they were categorized to have been committed against the "Government," "Military" or "Police" (START, 2021). The increase in attacks by the FARC following the strikes is likewise comparable to the increase in suicide bombings observed by Kaplan et. Al (2005) following the killing of terror suspects in Israel.

Similarly, the outcome of the strikes against the FARC leaders is exactly analogous to Wilner's (2010) analysis which saw targeted strikes against Taliban leaders result in increased IED attacks, but a decrease in the success rate of the IED attacks. More notable though, is the finding that when the FARC was subjected to targeted strikes against its Secretariat leaders, the group's intensity of deadly force was significantly diminished. This is a noteworthy discovery as Mannes (2008) previously found that religiously motivated organizations significantly increase the severity of their attacks when subjected to HVT strikes. With these differing findings in mind, it could be

speculated that HVT strikes affect Marxist guerilla organizations and religiously motivated groups differently.

Despite the fact that the outcomes of backlash and mobilization appear to be applicable theoretical outcomes regarding the FARC's reaction to the strike against Reyes and the period of strikes, the outcome of deterrence does not seem to apply for the period under study. Specifically, the deterrence viewpoint indicates that repression by government forces that diminishes the livelihood of a group's success will deter the members of the group from engaging in risky actions (Hafez & Hatfield, 2006). However, this does not seem to be the case as the FARC significantly increased violent attacks in the periods following targeted strikes. Therefore, instead of being deterred by minimizing its collective action, the organization instead increased its collective action in retaliation of the strikes perpetrated by the Colombian government forces.

The last theoretical outcome related to HVT strikes; the substitution of tactics to execute attacks, will be discussed alongside the spatial geographies of attacks following the strikes. To begin with, it is observed that the municipalities rated as a hotspot increased following both strike time periods. This indicates the retaliatory attacks following the targeted strikes were executed in areas that were free of attacks on average before the strikes. Areas such as Tibú that had zero attacks before the strikes, became a hotspot during the period of strikes. Additionally, following the strike against Reyes, there was a diffusion of attack hotspots from municipalities in Valle de Cauca (surrounding Buenaventura) to Cauca (surrounding Caldono), Huila and Tolima (northeast and southeast of Caldono) which were further exacerbated during the period of

strikes. This diffusion was also exhibited throughout Arauca (surrounding Arauquita) and with the municipalities on the border with Ecuador that surround Tumaco and Ipliaes.

More importantly, the emergence of attacks in municipalities such as Tibú and Tumaco following the strikes is analogous with the substitution effect. It is possible that FARC attack hotspots diffused in adjacent municipalities as a result of retaliation from the group. Similarly, the emergence of attack hotspots and new areas being attacked following a strike may be the result of modifications made by the group to carry out attacks with less risks to prior operations as outlined by Hafez & Hatfield (2006). The attacks against municipalities that did not exhibit any attacks during the pre-intervention period may have been a calculated effort to diminish risks related to planning and carrying out attacks in new areas with available government and military targets.

Lastly, the FARC did not seem to be deterred by the strikes against its leaders. However, it is worth considering that instead of being deterred by the HVT strikes against its leaders in conjunction with other military operations by the Colombian security forces. The group may have exhibited the substitution effect in a different way than previously discussed following the period that was analyzed. The constant repressive tactics employed by the security forces may be associated with the decrease in attacks perpetrated by the FARC following the period of strikes as the group began to substitute and adjust to other tactics that could be considered more rewarding.

These substituted approaches include the initiation of peace talks between the FARC and the Colombian government in August 2012 which was followed by a ceasefire declared by the insurgent group in November of that same year. These parleys between the Colombian government and the FARC eventually lead to the November 2016 peace

deal that paved the way for the FARC to demobilize and enter the political arena. It is possible that this substituted approach, or government policy, of achieving a peace accord may have been viewed as the less risky and more rewarding course for both parties. With this in mind, part II of this chapter will assess the effect that the November 2016 deal between the FARC and the Colombian government had on 1) terrorist attacks perpetrated by FARC dissidents, 2) terrorist attacks perpetrated by the ELN and 3) cartel-related homicides throughout Colombia. An analysis of the effect that the peace accord has on terrorist incidents and homicides will allow for a comparison of the outcomes between the implementation of targeted strikes as seen in part I and the peace accord as will be observed in part II.

**Part II: Peace Accords with the FARC**

Following the analysis of HVT strikes against FARC leaders in part I, this second part of the chapter seeks to evaluate the outcomes of the secondary approach to deal with TOC groups – peace accords between sovereign states and armed insurgents. Specifically, part II will analyze the effect that the signing of the peace accord with the FARC had on cartel-related homicides and terrorist incidents. It is important to keep in mind that the peace accord between the FARC and the Colombian government was finalized in November 2016. While the disarmament process was fulfilled by June 2017 (BBC, 2017), some estimated 3,000 members did not disarm, demobilize, and reintegrate (DDR) themselves as was required by the peace deal (Posada, 2018). This group of combatants, who will be referred to as "FARC dissidents" for the remainder of this study, continues to engage in illegal acts and militant operations in Colombia and Venezuela.

At the time that the FARC and the Colombian government reached the peace accord, the FARC was not the only armed insurgent group still active from the Colombian armed conflict. Following the FARC's demobilization, the National Liberation Army (ELN) became the largest armed rebel group in Colombia (Casey, 2016). As a result, the present study will analyze the effect that the 2016 peace accord had on terrorist incidents perpetrated by FARC dissidents and the ELN.

To date, no study has evaluated Colombian peace deals made with insurgent groups on future violence. For example, when the M-19, EPL, or AUC were demobilized, no studies had evaluated the effect that the demobilization of these groups had on terrorist incidents perpetrated by other groups that remained active. Furthermore, the present study will also analyze homicide trends as well, given the availability of homicide data between 2010 and 2020. Therefore, part II is twofold as this portion of the chapter will analyze the effect that the signing of the Peace Accords had on — 1) terrorist incidents perpetrated by FARC dissidents and the ELN and 2) homicides within Colombia.

Before discussing the peace accord and its effect on terrorism and homicides, it is first important to examine the ELN from its inception to its current state. Following the overview of the ELN is a section on the post-conflict literature of previous DDR processes within Colombia. Then, a theoretical discussion on the demobilization of armed insurgent groups and its relationship to violence will follow. This then proceeds with the methods, variables, findings, discussion of the findings, comparison of the findings between part I and part II, and the conclusion.

**The National Liberation Army**

The National Liberation Army (ELN) was considered the second largest armed rebel group in Colombia before the FARC's demobilization (Casey, 2016). Today, the ELN is Colombia's largest guerilla group (Mapping Militants, 2019). This leftist rebel group has been involved in the kidnaping of civilians, extortion of domestic and foreign oil companies, hijackings, drug trafficking and has conducted targeted attacks against energy and oil infrastructure, political figures, and government personnel (Mackenzie Institute, 2015). Like the FARC, the ELN traces its origins to 1964 following the period of La Violencia. The group was formed by brothers Fabio and Manuel Vásquez Castaño who were inspired by the Cuban Revolution and Che Guevara (Mapping Militants, 2019). The group's ideology is derived Marxist beliefs and their main objective is to implement a revolutionary communist government in Colombia (Mackenzie Institute, 2015).

In July of 1964, the small insurgent group began to train in the department of Santander, and six months later the group took over a small village in Santander and formally proclaimed themselves as the ELN (Insight Crime, 2020). In the subsequent years, the ELN concentrated its efforts on managing amassing recruits, who were chiefly priests from the Catholic church (Mapping Militants, 2019). In 1973, the group's existence nearly came to an end due to a military offensive that killed a significant number of its combatants, including founders Fabio and Manuel Vásquez Castaño (Insight Crime, 2020). Following this incident, Manuel Perez and Nicolas Rodriguez Bautista, alias "Gabino," became the leaders of the group. Under their new leadership, the ELN began kidnapping politicians and wealthy landowners in order to finance the rebuilding of the group (Mapping Militants, 2019). In addition to kidnapping and

gathering revenue from ransoms, the group also received some luck when numerous large oil discoveries brought multinational companies into their territory allowing the group to extort these corporations (Insight Crime, 2020). Insight Crime (2020) also reports that in the mid 1990's the group began to tax coca and marijuana farmers in the Bolivar department, where the group's management had setup its headquarters.

The revenue gained from kidnappings, the theft and extortion of oil, and the taxing of coca and marijuana growers provided the ELN with new momentum that saw the rebel group mature to an estimated 4,000 – 5,000 combatants by 1999 (McDermott, 2009; Insight Crime, 2000). However, this was followed by a period in which the ELN was debilitated due to internal fighting and the absence of a clear national strategy that left the group susceptible to assaults from both the Colombian military and the right-wing paramilitary groups such as the United Self-Defense Forces of Colombia (AUC) and Death to Kidnappers (MAS), which saw the ELN lose its headquarters in the Bolivar department (Insight Crime, 2020). By 2001, the group began peace talks with the Colombian government, but the talks were quickly ended (CBS, 2001). However, after President Pastrana left office, the ELN began peace talks with the new Uribe administration in Cuba between August and December of 2002, and afterwards between June 2004 and April 2005 in Mexico, nevertheless, these talks were also unsuccessful (Insight Crime, 2020).

During this time, the group was also involved in violent conflicts with the FARC and dealing with internal power struggles. Unlike the FARC, the ELN does not have a secretariat, instead the group has a Central Command for political decision-making purposes, thus allowing a horizontal structure that grants its Fronts autonomy (Insight

Crime, 2020). Therefore, it is not surprising that by 2009 the group began to exhibit signs of internal fragmentation as several of the group's Fronts were defying leaders' commands and aligning with drug traffickers for economic security as they were facing assaults from the FARC (BBC, 2009). Moreover, in this same year, McDermott (2009) reported that this group was a forgotten force. The ELN was not invited to participate in the August 2012 exploratory peace talks between the FARC and the Colombian government. Molinski (2013) has speculated that the Colombian government did not admit the ELN into the peace talks because the government did not view the group as a threat. However, this exclusion seemed to have irritated the group as they carried out several attacks against police officers and oil pipelines in 2012 and continued attacking oil infrastructure in 2013 (Mapping Militants, 2019). Likewise, the group increased its attacks on oil infrastructure and continued its use of kidnap for ransom through 2015 (Sullivan & Beittel, 2016).

In 2017, the ELN initiated formal peace talks with the Colombian government under the Santos administration in Quito, Ecuador (Reuters, 2018). The two parties signed a ceasefire agreement in September 2017 that lasted until January 2018 (Insight Crime, 2020). By April of 2018, the Ecuadorian government ended its participation in the peace process which prompted peace negotiations to be moved to Havana, Cuba (Reuters, 2018), the same place where the negotiations with the FARC took place. However, in 2019, the ELN attacked a police academy in Bogota that killed 22 cadets in January 2019 (Charles, 2019; González & Kurmanaev, 2020). Consequently, President Duque halted peace talks and requested the Cuban government to send the ELN representatives in their

country back to Colombia (Insight Crime, 2020). However, the Cuban government did not act upon this request, and consequently, several ELN leaders have remained in Cuba.

**The ELN Today**

The ELN has recently continued to demonstrate that it is a group with the ability to cause concern for the Colombian government and its citizenry. For example, an Insight Crime report by McDermott (2020) ranked the ELN as the top criminal group in the Americas for 2019. Meaning that the ELN ranked above Brazil's First Capital Command (PCC) and the well-known Sinaloa Cartel and Cartel Jalisco Nueva Generacion (CJNG), both of Mexico. The report (McDermott, 2020) ranks the rebel group as the top organization for ten specific reasons:

1) The group's politico-military structure has proved to be resilient in over five decades of attacks from the Colombian government and right-wing paramilitaries,
2) Several principal leaders that make up the Central Command have been with the organization since its establishment, or enlisted shortly after, which means that the group's high-ranking leaders have decades of proficiency,
3) The ELN's robust ideological element of Marxism makes its members feel that they are in combat for a just cause therefore providing strong devotion and inspiration,
4) The group's economic resilience has also recently increased with the diversity of the group's criminal portfolio as the group has become involved in illegal mining, smuggling, and drug trafficking,

5) While the group is currently seen as the biggest threat to the Colombian government, the Venezuelan government views the rebel group as a boost for the regime and a safeguard along the border with Colombia, which has permitted the ELN to prosper in Venezuela by allowing it to further establish itself in the country and monopolize sectors of the criminal economy,
6) The ELN's ability to threaten or use violence, as many of the group's acts are seen by its combatants as insurgent in nature, rather than criminal,
7) The ELN's military capacity and size as the group can depend on 4,000 combatants with specialized military training which has previously allowed the group to immobilize entire departments in Colombia, execute military attacks to acquire territory from the state, and place a bomb in a police academy in the capital city of Bogota,
8) The organization has established key criminal alliances with other TOC groups to continue their business as usual. For example, the group has a relationship with portions of the ex-FARC Mafia, elements of the Venezuelan government, and Mexican DTOs to guarantee the steady flow of cocaine to Central America,
9) The ELN controls a vast amount of territory, in some of these areas they exercise the role of the government which affords them criminal rents and a continual flow of recruits. In some parts of Colombia and Venezuela, the rebel group is viewed as a legitimate force, with the capability to deliver more efficient and trustworthy governance than the state,

10) Lastly, the litmus test for a criminal organization is its longevity. The ELN has proven its resilience more than any group on the top ten list as the organization has been in existence for nearly 60 years allowing it vast power and operational capacity, making it stronger today than it has ever been in the past.

Moreover, unlike the FARC, the Colombian government had not successfully carried out a HVT strike against the members of the ELN's Central Command. However, the Colombian government has recently executed two high profile strikes against the group. The first strike came on October 25, 2020, with the killing of Andrés Felipe Vanegas Londoño, alias "Uriel," who was the commander of the ELN's Western War Front (Reuters, 2020). However, Jaramillo (2020) points out that although the Uriel strike was a severe blow against the ELN by the Colombian government, the strike is likely to minimally affect the rebel group's national dynamics. The second strike was against Uriel's successor, Angel Padilla Romero, alias "Fabian" who died in a hospital 10 days after a military bombing campaign in September 2021 (Acosta, 2021). Fabian was believed to be the most important ELN leader still in Colombia at the time he died, as the Central Command leaders were in Cuba at the time of the strike.

Given that none of the Central Command leaders were ever successfully captured or killed by the Colombian government, an analysis on the effect of a HVT against the ELN's leadership and its effect on terrorist incidents and intensities cannot be performed as is the case with the FARC. However, since the ELN is still active and has increased its power, it is important to analyze the impact of the signing of the Peace Accords between the Colombian government and the FARC on terrorist incidents perpetrated by the ELN.

***Research question [Q6]: Did the signing of the peace accord between the FARC and the Colombian government increase terrorist incidents perpetrated by the ELN?***

**Post-Conflict Literature in Colombia**

Chapter 2 reviewed the post-conflict literature in various post-conflict regions throughout the world. This section will focus specifically on the post-conflict literature in Colombia. Post-conflict studies in Colombia have focused on the demobilization of ex-combatants of the United Self-Defense Forces (AUC), or deserters of the FARC and ELN (Kaplan & Nussio, 2018). These studies have made inquiries into the social reintegration of ex-combatants (Kaplan & Nussio, 2015), recidivism of ex-combatants during reintegration (Betancourt, 2010; Daly, Paler & Sami, 2017; Kaplan & Nussio, 2018; Peña & Dorussen, 2019), the threat that ex-combatants pose (Nussio, 2017), the association between demobilization of the AUC and homicides (Howe, 2012), and violence at the subnational level following the demobilization of the AUC (Nussio & Howe, 2016).

The first stream of literature focuses specifically on the reintegration of ex-combatants and their participation in the community. Ex-combatants, whether they are former fighters that participated in the formal demobilization of the AUC, or deserters that fled from the FARC, ELN, or other illegal armed groups, are more likely to participate in their new community in places where civilian community members themselves are engaged at higher rates. Conversely, when ex-combatants have little opportunity for community participation — the involvement of people in community projects to solve problems — they are less likely to participate, therefore making their

reintegration process more difficult (Kaplan & Nussio, 2015). Suggesting that for a reintegration program to be successful, governments who reach peace accords with armed insurgent groups should attempt to socially reintegrate ex-combatants in areas where community participation is high among civilian community members.

In addition to community participation, reintegration programs should acknowledge the importance of social bonds and police-community relations. This comes as ex-combatants may have a better potential for an effective reintegration if they have durable family ties, children, and are deterred by efficient policing practices (Kaplan & Nussio, 2018). Similarly, the presence of ex-combatants who are in a reintegration program is more favorable for communities than the presence of ex-combatants who are not in a reintegration program. For example, the presence of former AUC combatants who were not in a reintegration program is associated with an increase in both homicides and robbery, while an increasing number of former AUC combatants in a reintegration program is linked with a decrease in homicides and robberies (Peña & Dorussen, 2019).

The second line of literature is centered on the factors related to recidivism of ex-combatants during reintegration. Recidivism of ex-combatants seems to be associated to several factors, the first is poorly run reintegration programs. For example, following the demobilization of the AUC in Medellin, crime rates decreased considerably in the short run, but, due to the inadequate reintegration of former AUC combatants, homicides increased in the long run (Betancourt, 2010). The second factor related to recidivism is the continued ties between ex-combatants. For instance, ex-combatants who maintain a strong link to ex-commanders are significantly more probable to participate in crime during the reintegration process, while strong ties to ex-combatant peers is also

associated to criminal behavior (Daly et al., 2017). The third factor related to recidivism is the presence of criminal groups as ex-combatants should not be reintegrated in areas with a large presence of criminal networks. Criminal groups can entice ex-combatants into crime and increases the likelihood of recidivism. This comes as ex-combatant's increased possibility of recidivism is strongly linked with the personal motives that the ex-combatants had when they originally joined an armed group and the time spent within the group (Kaplan & Nussio, 2018).

The third line of research has focused on the demobilization and disarmament of ex-combatants. It appears that areas with a large number of demobilized ex-combatants exhibit an increase in violence. For example, one study indicates that the surrendering of arms by former AUC combatants has no effect on the homicide rate, while the demobilization of the group is linked to a significant increase in homicides specifically in areas where the ex-combatants were demobilized (Howe, 2012). However, the author of this study indicates that based on her analysis, she cannot claim that AUC ex-combatants are responsible for the increase in homicides. It can be the case that homicides increase in areas where ex-combatants are demobilized as a result of ex-combatants continuing to employ the skills they used while they were enlisted members of an armed insurgent group. For instance, Nussio (2017) indicates that several ex-combatants have specialized skills, allowing them to realize important roles in the criminal markets, particularly mid and high-ranking ex-combatants who successfully founded new organizations that took over some of the illicit markets previously controlled by the AUC. The demobilization of an armed insurgent group may lead to a vacuum in which other criminal networks step in to take over the illicit markets of the demobilized network. If this is the case, violence

should increase as criminal networks compete to gain hegemony over these illicit economies. For example, following the demobilization of the AUC in the department of Cordoba, Colombia, the illegal protection system in Cordoba — the local order that was monopolistically governed by the AUC — was interrupted and as a result, new rivalries between post-demobilization criminal groups developed as these groups competed for the remaining illegal rents (Nussio & Howe, 2016). Similarly, petty crime became widespread and revenge killings increased, therefore furthering the growth of violence during the post-demobilization process. This suggests that governments initiating the demobilization of armed insurgent groups need to 1) prepare their security forces to become physically present in areas where the insurgent groups once operated, and 2) successfully implement reintegration programs so that ex-combatants do not employ the skills learned as members of armed insurgent groups.

The aforementioned post-conflict studies analyzed the formal demobilization and reintegration of the AUC, while only assessing deserters of the FARC, ELN, and other criminal organizations. Although the Peña & Dorussen (2019) study analyzed the reintegration of ex-FARC combatants, the period of analysis was from 2003 – 2013, therefore the focus was on deserters and not ex-combatants involved in the formal peace process of 2016. Likewise, all of the other studies mentioned did not evaluate the period following the November 2016 peace agreement. Consequently, there is currently a clear gap in the Colombian post-conflict literature and the need to evaluate the demobilization of the FARC following the 2016 peace agreement. Thus, the purpose of this study is to fill these gaps by conducting a macro level analysis of the effect that the peace accord had on homicides and terrorist incidents. The next section will focus on the theoretical

factors related to the demobilization of an armed insurgent group and an increase in violence.

***Research question [Q7]: Did the signing of the Peace Accords in 2016 reduce cartel-related homicides in Colombia?***

***Research question [Q8]: Did the signing of the Peace Accords in 2016 reduce terrorist incidents perpetrated by FARC dissidents in Colombia?***

***Research question [Q9]: Did the signing of the Peace Accords in 2016 reduce the lethality of terrorist incidents perpetrated by FARC dissidents in Colombia?***

**Breakdown of Protection Systems Theory**

The Breakdown of Protection Systems theory is rooted from the assumption that illegal armed groups exercise hegemony over the illegal protection systems in areas where state presence is weak (Arjona, 2009). The monopoly over an illegal protection system, comes with the exercise of local order and ability to contain violence. However, this theory indicates that following the demobilization of a group that exercises local order, the illegal protection system is disrupted. This disruption is followed by an increase in violence during the post-demobilization period (Nussio & Howe, 2016). The complex and obscure areas of local order that are often found in conflict areas have been termed “ungoverned spaces” (Clunan & Harold, 2010), “security markets in failed states” (Branović & Chojnacki, 2011), “illicit authority” (Bruce, 2002), and “criminal

governance" (Arias, 2006). The presence of armed groups that are not regulated by the state is a key sign indicating that a territory is ungoverned (Rabasa, Boraz, Chalk, Cragin & Karasik, 2007). Armed groups outside of the state's control include warlords exercising authority in conflict regions (Giustozzi, 2005), alternate local government arrangements created by vigilante groups in places like Mexico (Del Rio, 2020), gangs in Central America, such as the Mara Salvatrucha operating on the Guatemalan – Mexican border (Rabasa et al., 2007), and mafia organizations in Italy and Russia (Gambetta, 2001; Varese, 2001).

When groups operating in ungoverned spaces are successful, they will oust government institutions that are typically already in a weak position (Rabasa et al., 2007). A common characteristic of these groups is to provide some level of security to the local population (Nussion & Howe, 2016). In this manner, these groups acquire legitimacy, allowing for the collection of payments in the areas they control, mainly through extortion (Ballentine & Nitzschke, 2005). Under these circumstances the state is further debilitated as the citizens begin to view the government as unsuccessful or inapt (Rabasa et al., 2007). An essential component of an illicit protection scheme is the establishment of a monopoly as "the only real protection organized crime offers, apart from 'protection' against itself, is against other rival extortionists; and this is because it is possible to tax people successfully only if one holds a monopoly over taxation, that is, if nobody else is taxing them at the same time" (Gambetta, 2011). Other authors have indicated that the arrangement of such a protection scheme may actually lead to a containment of violence (Duffield, 1998; Mukhopadhyay, 2009).

Centered on the aforementioned ideas, the Breakdown of Protection Systems theory suggests that the breakdown of a formerly operative illicit protection scheme results in increased levels of violence (Figure 4.2.1). Nussio and Howe (2016) indicate that three different underlying processes may link the breakdown of protection to violence: First, groups and individuals may perpetrate violent acts if they predict that the costs for committing crimes has generally been reduced. For instance, in the case of Bosnia and Herzegovina, ex-militants who were skilled in committing acts of violence and who did not successfully reintegrate in the post-war society, opted to engage in criminal acts (Mashike, 2007). Similarly, there is the potential for the proliferation of street gangs in areas presented with protection voids or in frail and corrupt government institutions as observed in Central America (Rodgers & Muggah, 2009).

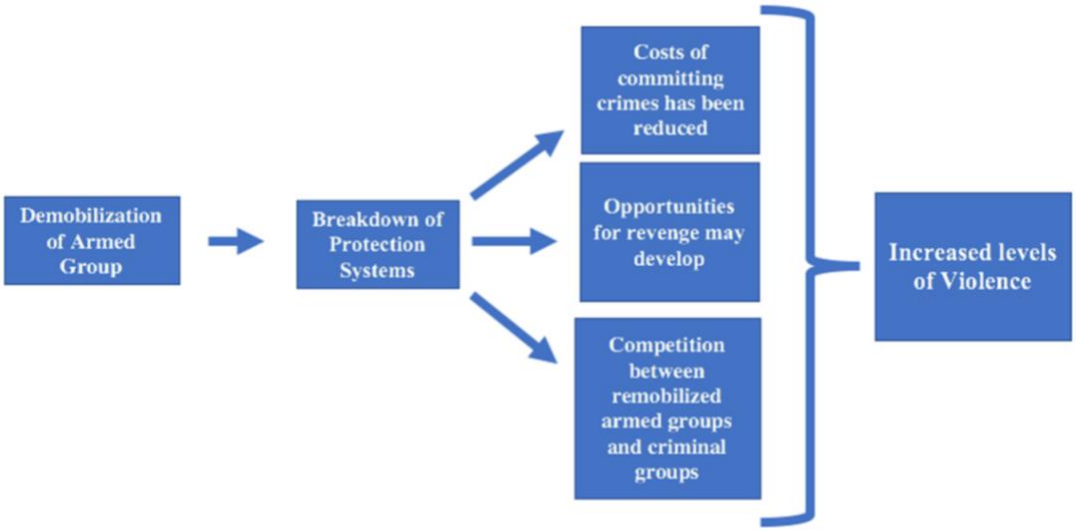


**Figure 4.2.1:** Breakdown of Systems Theory (Nussio & Howe, 2016).

Second, once the protection scheme is disassembled, opportunities for revenge may develop (Nussio & Howe, 2016). If the state's judicial system is incapable of peacefully resolving conflict related disputes during the post-demobilization period, then

revenge killings can increase (Theidon, 2007), as ex-militants are frequently among the chief victims of revenge killings (Nussio, 2011). The third process is associated with competition and has the greatest possibility to be a factor related to violence. Nussio and Howe (2016) explain that competition becomes possible when the unchallenged protection scheme is disturbed. Aftereffects of demobilization often includes the competition between remobilized armed groups (Themnér, 2011) and criminal groups (Rozema, 2008) in an effort to take control of the illicit rents of conflict economies (Heupel, 2006), as this competition is prone to be achieved through violent repression (Skaperdas, 2002).

More importantly, Nussio and Howe (2016) explain that competition among criminal groups is facilitated when the demobilization and reintegration of mid-level leaders is unsuccessful. Nussio (2017) points out that former mid-level combatants are potential career criminals as they previously ascended their organization's chain of command and have become central in the criminal linkages. Therefore, these former mid-level combatants hold organizational intelligence regarding the extraction of illicit rents from surviving war economies, such as, an understanding of the trafficking routes, connections to suppliers and clients, and tactics to deal with challengers and government forces. Similarly, the criminal organizations that ensued after the demobilization of the right-wing paramilitary group known as the United Self-Defense Forces (AUC) were led by former members of the AUC (CNMH, 2015). This is not exclusive to the demobilization of the AUC in Colombia, as mid-level commanders have also played important roles in other post conflict regions like the Republic of Congo and Sierra Leone (Themnér, 2011). This process of ex-combatants starting their own factions may increase

the probability of increased violence during the post-mobilization stage. Therefore, with respect to the association between the disruption of an illegal protection system and post-demobilization violence, I hypothesize that the FARC's demobilization is positively associated with the number of cartel-related homicides in areas previously controlled by the group.

## Methods

### *Data*

Similar to part I, this portion of the study will analyze data from the GTD database. This particular study analyzes the effect that the signing of the peace accord had on terrorist incidents and the intensity of the incidents (attack intensity rating) perpetrated by FARC dissidents, while also assessing the number of incidents perpetrated by the ELN. Therefore, there are two dependent variables, (1) the number of terrorist incidents perpetrated by the FARC dissidents and ELN, and (2) the attack intensity rating of terrorist incidents perpetrated by the FARC dissidents. In this case, the independent variable of interest was the intervention of the finalization of the peace accord and was coded as a dichotomous step-function with all months preceding the intervention (November 2016) coded as 0 and months post-intervention coded as 1 because it was theorized that the intervention would directly affect the dependent variable.

The follow up analysis on homicides related to the peace accord examines data obtained from El Sistema de Información Estadístico, Delincuencial Contravencional y Operativo de la Policía Nacional (The Statistical, Criminal Misconduct, and Operational Information System), known in short as SIEDCO. SIEDCO provides crime data obtained

in partnership with The Colombian National Police and the data is available from 2010 through 2020.

This portion of the study analyzes whether the signing of the peace accord had an effect on violence throughout Colombia. The variable of interest that was analyzed is intentional homicides with a firearm (will be referred to as 'homicides' for remainder of study). Not all homicides were analyzed as it is theorized that homicides with blunt objects or without the involvement of firearms would not be affected by the signing of a peace accord with an insurgent group and the government. Thus, in this case, the dependent variable is the number of monthly homicides reported by SIEDCO. The independent variable of interest was also the intervention of the signing of the peace accord (November 2016) between the FARC and the Colombian government and was also coded as a dichotomous step-function with all months preceding the intervention coded as 0 and months post-intervention coded as 1 because it was also theorized that the intervention would have a direct, persisting effect on the dependent variable (homicides), instead of a short temporary effect.

***Analysis***

The Part II studies will likewise employ several ARIMA models to link the causal relationships related to the effect of the peace accord on terrorist incidents, their attack intensities, and homicides. Like part I, ARIMA models were generated to model possible preceding trends in the pre-intervention period from intervention effects. The intervention that was analyzed regarding terrorist incidents and their lethality consists of 60 pre-intervention periods and 26 post-test periods. While the intervention analyzing homicides also consists of the same 82 pre-intervention periods but includes 50 post-test periods. The

homicide analysis includes 24 more post-test periods because the homicide data is available through 2020 while the terrorism data is only available through 2018. The amount of pre and post-test observations are sufficient to meet the suggested minimum of 48 pre-intervention periods to successfully establish a dependable model (McCleary & Hay, 1980).

Four separate ARIMA models were created, Model 5 analyzes the number of terrorist incidents perpetrated by FARC dissidents related to the intervention of the peace accord, Model 6 examines the attack intensity rating of terrorist incidents perpetrated by FARC dissidents related to the intervention of the peace accord, Model 7 analyzes the number of terrorist incidents committed by the ELN related to the intervention of the peace accord, and Model 8 evaluates the number of homicides related to the peace accord intervention. Like part I, SPSS was used to create the four ARIMA models, through its iterative model-building strategy to verify whether the series had a constant variance over time, whether they were trended or drifted in either direction, or whether they exhibited seasonal fluctuations (IBM, 2015). Models 5 and 6 are both related to the FARC dissidents. Model 5 (number of terrorist incidents) specified that there was a stationary variance throughout the series and a natural logarithmic transformation was not necessary. The model showed that there was a stationary variance throughout the series therefore a natural logarithmic transformation was not necessary. The model did not require first-order differencing as the series was not trended and the model indicated that the data did not show seasonal variation. Finally, the model showed that the data displayed one moving average parameter. As a result, the best-fitting model for model 5 was determined to be ARIMA (0,0,1). Model 6 (attack intensity rating of terrorist incidents) similarly indicated

that there was a stationary variance throughout the series therefore making a natural logarithmic transformation unnecessary. The model indicated that the series was not trended and did not display seasonal variation, thus first-order differencing was not required. Consequently, the best-fitting model for Model 6 was determined to be ARIMA (0,0,0). Model 7 is related to the amount of terrorist incidents perpetrated by the ELN. Model 7 exhibited stationary variance throughout the series and a natural logarithmic transformation was not necessary. The model indicated that there was no seasonal variation, had one autoregressive parameter, and was not differenced. Therefore, the best-fitting model was determined to be ARIMA (1,0,0). Lastly, model 8 is related homicides. Model 8 indicated that there was a stationary variance throughout the series thus making a natural logarithmic transformation unwarranted. The model specified that the series was trended, thus, the series was differenced once to smooth the entire series. Lastly, the model showed that the data displayed twelve moving average parameters. Therefore, the best-fitting model for Model 8 was determined to be ARIMA (0,1,12).

### *Data for Spatial and Temporal Analysis of the Peace Accords*

Both the GTD terrorist incident data and the SIEDCO homicide data that was used for the time series analysis of the peace accord was also employed for the spatial and temporal analysis of terrorist incidents and homicides. As mentioned in part I, the GTD dataset includes information about the date, municipality, and perpetrator characteristics of terrorist attacks. Similarly the SIEDCO data includes information about the date, municipality, and weapons used in a homicide incident. The time-series analysis evaluated homicide incidents, while this spatial and temporal analysis will analyze the homicide rate

instead of raw count. The rate of homicides is the most appropriate measure for homicides as this figure will control for population differences throughout all of the municipalities within Colombia. The homicide rate was calculated by dividing the number of homicide incidents by the total population of each municipality, then multiplying the result by 100,000.

Using ESRI's ArcMap 10.8 software, the Colombia terrorist and homicide incident datasets were joined with a Colombia municipality location dataset provided by GeoNames. Once the preparation of the datasets were complete, spatial analysis techniques were employed to the terrorist and homicide incident datasets to identify clusters of terrorist incidents and homicides to visualize the development and evolution of these clusters over the eight (terrorism) and ten-year (homicides) study periods. First, choropleth maps of the number of terrorist incidents were created for the eight-years of terrorism data using the Jenks natural breaks classification method. While choropleth maps of the number of homicides and rates were created for the ten-years of homicide data. One map was created for each pre-test period and one for each post-test period (following the peace accord) of terrorist incidents perpetrated by the FARC/FARC dissidents and the ELN, along with the homicide rate throughout Colombia. Maps were created indicating the percentage change in terrorist incidents perpetrated by the FARC/FARC dissidents, the ELN, and the homicide rate exhibited in each municipality between the pre and post-test periods. Then, using GeoDa 1.18 software, the local indicator of spatial association (LISA) and Getis-Ord Hot Spot Analyses were conducted on the data.

***Research question [Q10]: Was there a change in the geography of the general incident distribution of terrorist incidents perpetrated by the FARC dissidents after the Peace Accord was signed?***

***Research question [Q11]: Was there a change in the geography of the general incident distribution of terrorist incidents perpetrated by the ELN after the Peace Accord was signed?***

***Research question [Q12]: Was there a change in the geography of the general incident distribution of cartel-related homicides in Colombia after the Peace Accord was signed?***

### *Spatial and Temporal Analysis*

Similar to the previous section, the LISA analysis employing the Local Moran's I tool identified areas with clusters and spatial outliers in the dataset. Additionally, Hot-spot analyses utilizing the Getis-Ord Gi* identified cities with high or low concentrations of terrorist and homicide incidents in Colombia. Like Part I, individual municipalities in Colombia were used as spatial units in this analysis, and data values were aggregated for each municipality (the number of incidents in the municipality). Detection of terrorist hot spots was necessary to reveal the spatial core of terrorist activity spaces, particularly to identify if activity spaces shifted for FARC dissidents or the ELN following the was signing of the peace accord with the FARC. Similarly, detection of homicide hotspots was needed to reveal if incidents of violence shifted throughout the country subsequent to

the peace deal. Maps employing the Local Moran's I and the hot-spot analyses were generated for the pre and post-test periods for all of the observed variables.

## Results

### *Summary of Time Series*

Four interrupted time series ARIMA models were generated to identify intervention effects of the peace accords. Figures 4.2.2 and 4.2.3, along with tables 4.2.1 & 4.2.2 are related to the FARC dissidents. Table 4.2.1 indicates that the peace accords had a negative statistically significant effect on the number of terrorist incidents, showing that after the accord was reached, terrorist incidents decreased by 5 incidents per month. This result indicates that the answer to research question *[Q8]* is yes — the signing of the 2016 Peace Accords reduced terrorist incidents perpetrated by FARC dissidents. Table 4.2.2 specifies that the peace accord had a negative statistically significant effect on the attack intensity of terrorist incidents, indicating that following the intervention, the attack intensity rating of terrorist incidents decreased by 2 per month. This specifies that the response to research question *[Q9]* is also yes — the signing of the 2016 Peace Accords in reduced the lethality of terrorist incidents perpetrated by FARC dissidents.

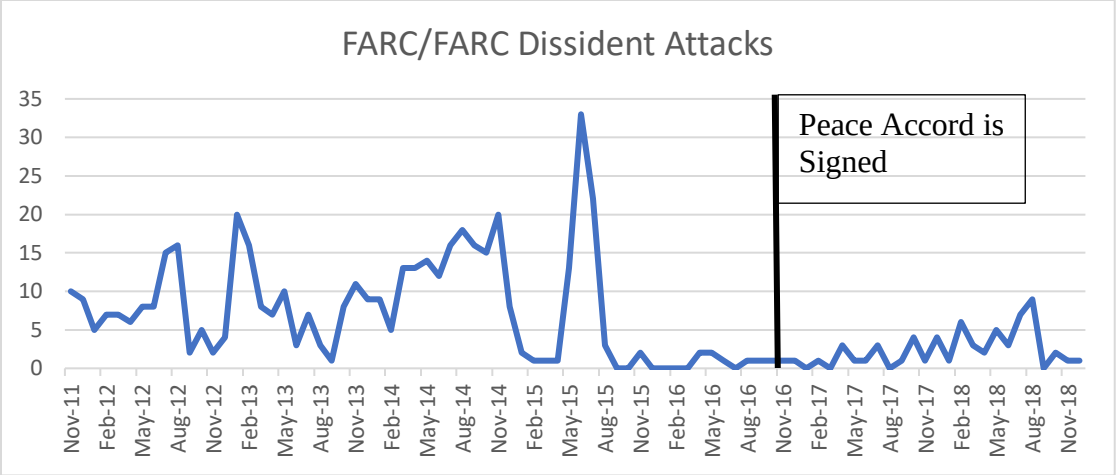


**Figure 4.2.2:** FARC/FARC dissident terrorist incidents over time (N=86 months, November 2011 – December 2018). Note: Black solid line represents start of the intervention.

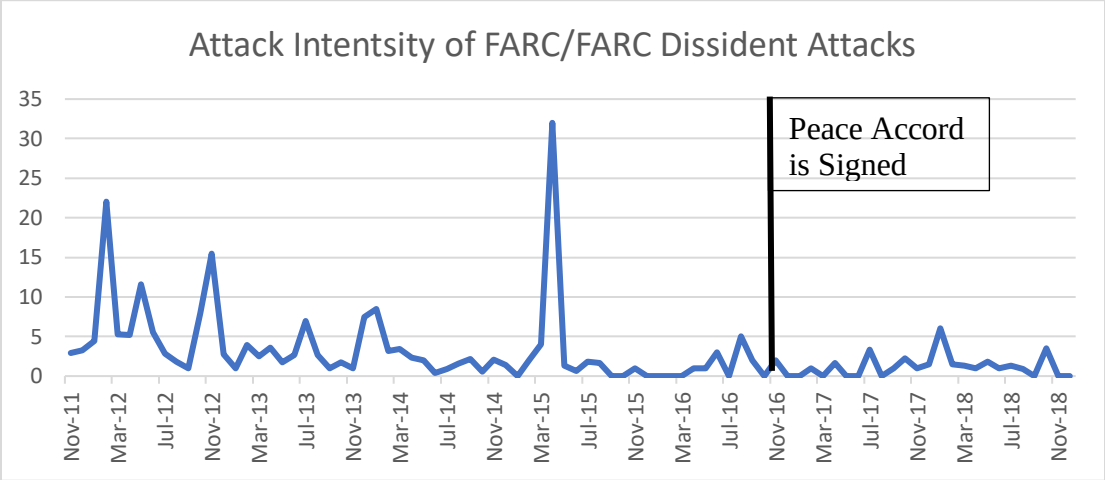


**Figure 4.2.3:** Attack Intensity Rating of FARC/FARC dissident terrorist incidents over time (N=86 months, November 2011 – December 2018). Note: Black solid line represents start of the intervention.

**Table 4.2.1.** (Model 5) Maximum-likelihood coefficients predicting the impact of the peace accords on Terrorist incidents in Colombia perpetrated by FARC dissidents (*N*= 86 Months, November 2011 – December 2018).

| Model Parameter | Estimate | Standard Error | *t*-value | *p*-value |
|---|---|---|---|---|
| Moving Average Lag 1 | -.669 | .083 | -8.054 | .000 |
| Peace Accords Numerator Lag 0 | -4.971 | 1.773 | -2.803 | .006 |

Model Description: ARIMA (0,0,1). Ljung-Box Q Statistic (18) = 15.513 ($p$ = .559).

**Table 4.2.2.** (Model 6) Maximum-likelihood coefficients predicting the impact of the peace accords on Attack Intensity Ratings of Terrorist incidents in Colombia perpetrated by FARC dissidents (*N*= 86 Months, November 2011 – December 2018).

| Model Parameter | Estimate | Standard Error | *t*-value | *p*-value |
|---|---|---|---|---|
| Attack Intensity Rating Constant | 3.551 | .586 | 6.060 | .000 |
| Peace Accords Numerator Lag 0 | -2.318 | 1.066 | -2.175 | .032 |

Model Description: ARIMA (0,0,0). Ljung-Box Q Statistic (18) = 9.144 ($p$ = .956).

Table 4.2.3 is related to the ELN. Table 4.2.3 indicates that the peace accord had a positive statistically significant effect on the number of terrorist incidents, showing that following the accord, terrorist incidents perpetrated by the ELN increased by 4 incidents per month. Therefore, indicating that the answer to research question *[Q6]* is yes — the signing of the peace accord between the FARC and the Colombian government increased terrorist incidents perpetrated by the ELN. Table 4.2.4 is related to homicides. Table 4.2.4 specifies that the peace accord had a positive non-statistically significant effect on the number of homicides, as homicides increased by 6 incidents per month following the signing of the peace accord. Thus, in response to research question [Q7], no — the signing of the Peace Accords did not reduce cartel-related homicides.

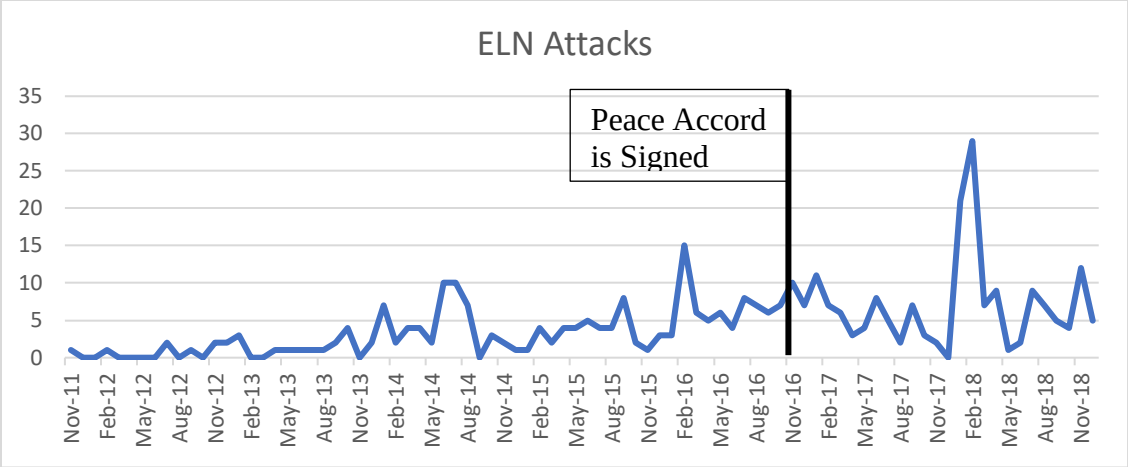


**Figure 4.2.4:** ELN terrorist incidents over time (N=86 months, November 2011 – December 2018). Note: Black solid line represents start of the intervention.

**Table 4.2.3.** (Model 7) Maximum-likelihood coefficients predicting the impact of the peace accords on Terrorist incidents in Colombia perpetrated by the ELN (*N*= 86 Months, November 2011 – December 2018).

| Model Parameter | Estimate | Standard Error | *t*-value | *p*-value |
|---|---|---|---|---|
| Terrorist Incidents Constant | 3.095 | .797 | 3.885 | .000 |
| AutoRegressive Lag 1 | .361 | .103 | 3.519 | .001 |
| Peace Accords Numerator Lag 0 | 3.982 | 1.421 | 2.801 | .006 |

Model Description: ARIMA (1,0,0). Ljung-Box Q Statistic (18) = 6.565 ($p$ = *.989*).

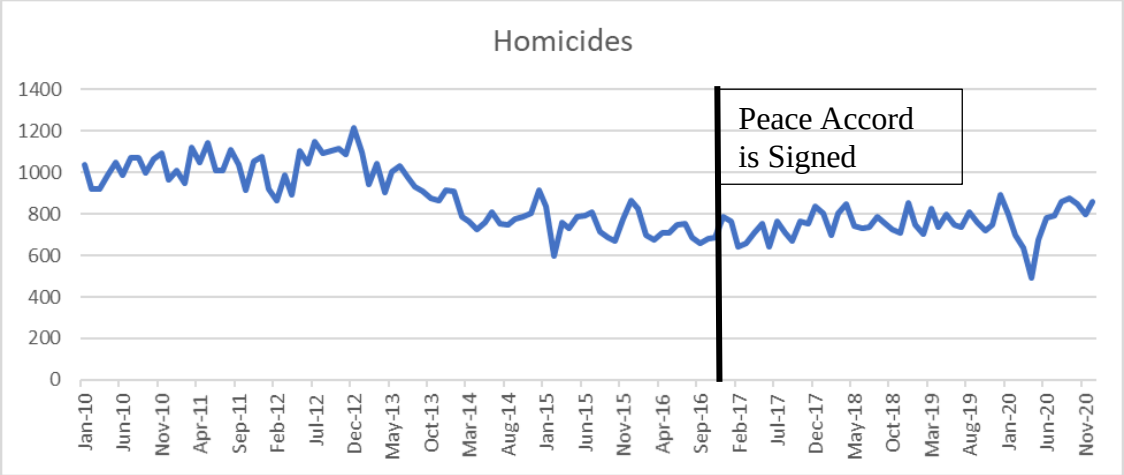


**Figure 4.2.5:** Number of monthly homicide incidents over time (N=132 months, January 2010 – December 2020). Note: Black solid line represents start of the intervention.

**Table 4.2.4.** (Model 8) Maximum-likelihood coefficients predicting the impact of the peace accords on Homicides in Colombia (*N*= 132 Months, January 2010 – December 2020).

| Model Parameter | Estimate | Standard Error | *t*-value | *p*-value |
|---|---|---|---|---|
| Homicide Incidents Constant | -3.683 | 2.596 | -1.419 | .159 |
| Moving Average Lag 1 | .445 | .093 | 4.795 | .000 |
| Moving Average Lag 2 | .136 | .098 | 1.391 | .167 |
| Moving Average Lag 3 | – .005 | .099 | -.046 | .963 |
| Moving Average Lag 4 | .141 | .104 | 1.354 | .178 |
| Moving Average Lag 5 | – .094 | .104 | -.906 | .367 |
| Moving Average Lag 6 | – .086 | .099 | -.872 | .385 |
| Moving Average Lag 7 | .036 | .104 | .346 | .730 |
| Moving Average Lag 8 | .070 | .106 | .660 | .511 |
| Moving Average Lag 9 | .179 | .104 | 1.716 | .089 |
| Moving Average Lag 10 | .180 | .104 | 1.724 | .087 |
| Moving Average Lag 11 | .082 | .102 | .799 | .426 |
| Moving Average Lag 12 | – .414 | .105 | 1.330 | .000 |
| Peace Accords Numerator Lag 0 | 5.652 | 4.251 | 1.330 | .186 |

Model Description: ARIMA (0,1,12). Ljung-Box Q Statistic (18) = 4.982 ($p$ = .546).

### *Summary of Spatial Terrorist Clusters for the FARC and FARC Dissidents*

The results of the Jenks classification for the raw number count of terrorist incidents perpetrated by the FARC/FARC dissidents during the pre- and post-intervention periods, in addition to the percent change by municipality are displayed in Figure 4.2.6. Results indicate that before the treaty was adopted Tumaco and Tibú were the only two municipalities that exhibited the amount of terrorist incidents within the top tier, both with 30 incidents each. Followed by Neiva (n=18), Toribío (n=13), Buenaventura (n=12), Yarumal (n=12), Caloto (n=12), Arauquita (n=12), Argelia (n=11), Florencia (n=10), Puerto Asís (n=10), Orito (n=9), Bogota (n=9), and Miranda (n=9) who were in the second highest classification. In the period following the signing of the peace accords, Tumaco maintained itself in the category with the most terrorist attacks (n=8) and was accompanied in the top tier with El Retorno (n=6). The second highest tier included two municipalities: Corinto (n=4) and Arauquita (n=3). The three municipalities that exhibited the highest increase in terrorist attacks were El Retorno, Mesetas and San José del Guaviare (Table 4.2.5).

Getis-Ord hot-spot analyses and Moran's I tests were conducted on the pre-intervention incident data and the post-intervention incident data. These results are displayed in Figures 4.2.7 & 4.2.8. Hot spot $G_i^*$ tests indicate a decrease in the number of hotspot clusters and an increase in cold spot clusters when comparing the periods before and after the peace accord. The pre-intervention period includes 96 municipalities with a high concentration of incidents while the post-intervention period includes 53 municipalities — a decrease of 45%. During the post-intervention period of the peace accord, four hotspot clusters emerged that include 1) the entire department of Guaviare

and southern Meta, 2) the municipality of the Cumaribo which makes up the bottom half of the Vicaha department, 3) and the northwestern municipalities of Meta surrounding

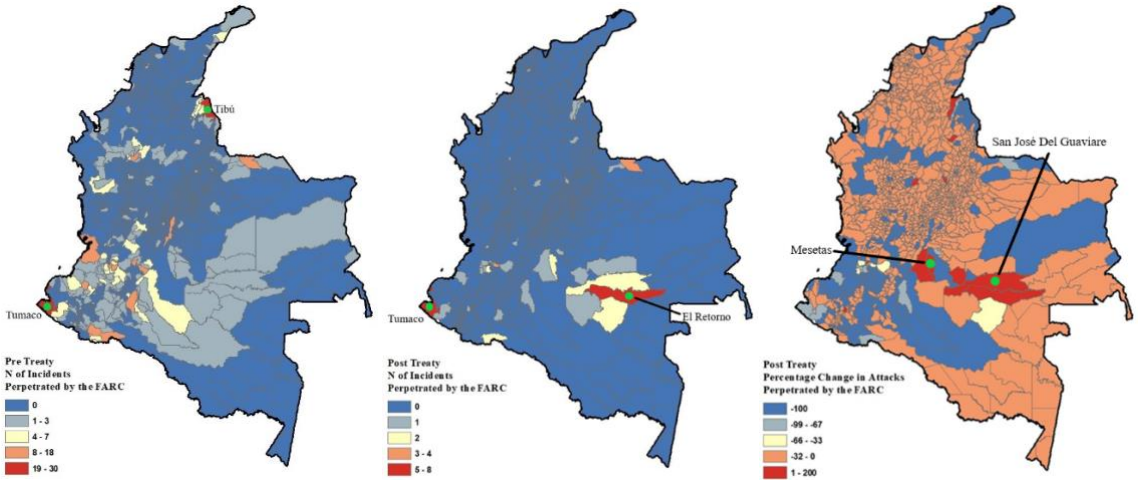


**Figure 4.2.6:** N and percentage change in terrorist incidents by municipality perpetrated by the FARC/FARC dissidents before and after the peace accord ($N$= 86 Months, November 2011 – December 2018).

| Municipality | Attacks (N) Pre-treaty | Attacks (N) Post-treaty | Percent Change Total N |
|---|---|---|---|
| El Retorno | 2 | 6 | — |
| Mesetas | 1 | 2 | — |
| San José del Guaviare | 1 | 2 | — |
| Arroyohondo | 1 | 1 | — |
| Calamar | 1 | 1 | — |
| Fortul | 1 | 1 | — |
| Mapiripán | 1 | 1 | — |
| Restrepo | 1 | 1 | — |
| San Antonio | 1 | 1 | — |
| San José del Fragua | 1 | 1 | — |
| TOTAL | 11 | 17 | 55% |

**Table 4.2.5:** Municipalities that exhibited an increase in the N of FARC/FARC dissident attacks after the treaty and municipalities that continued to exhibit the same number of attacks following the treaty.

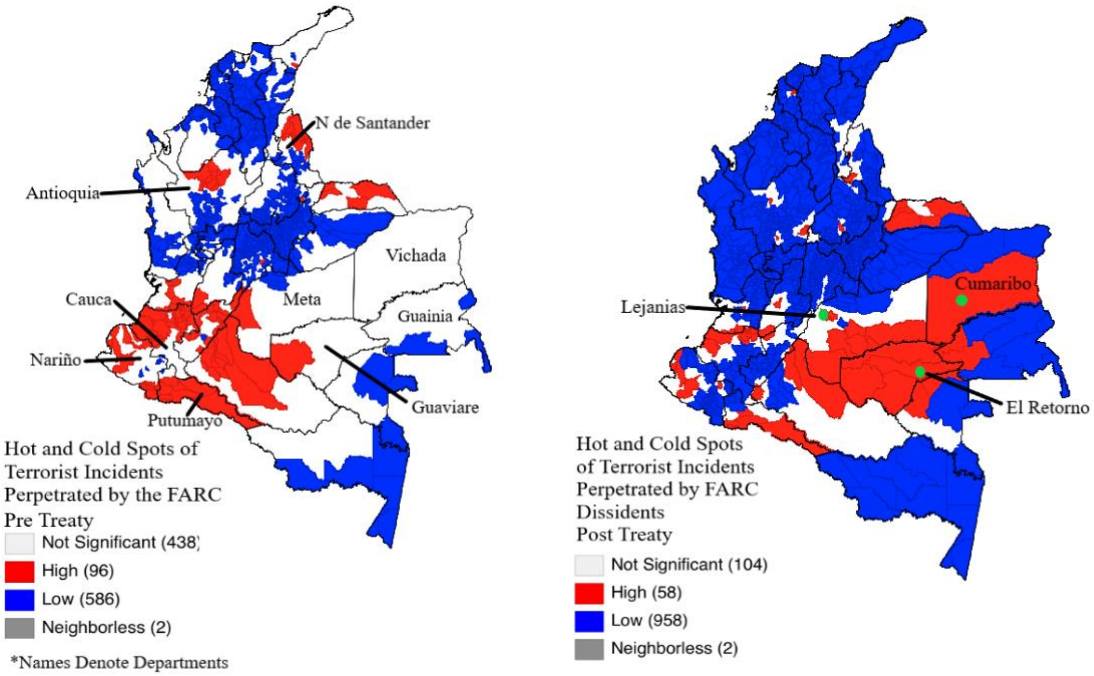


**Figure 4.2.7:** Terrorist incident hotspots perpetrated by the FARC/FARC dissidents using the Getis-Ord Gi* statistic before and after the peace accord (*N*= 86 Months, November 2011 – December 2018).

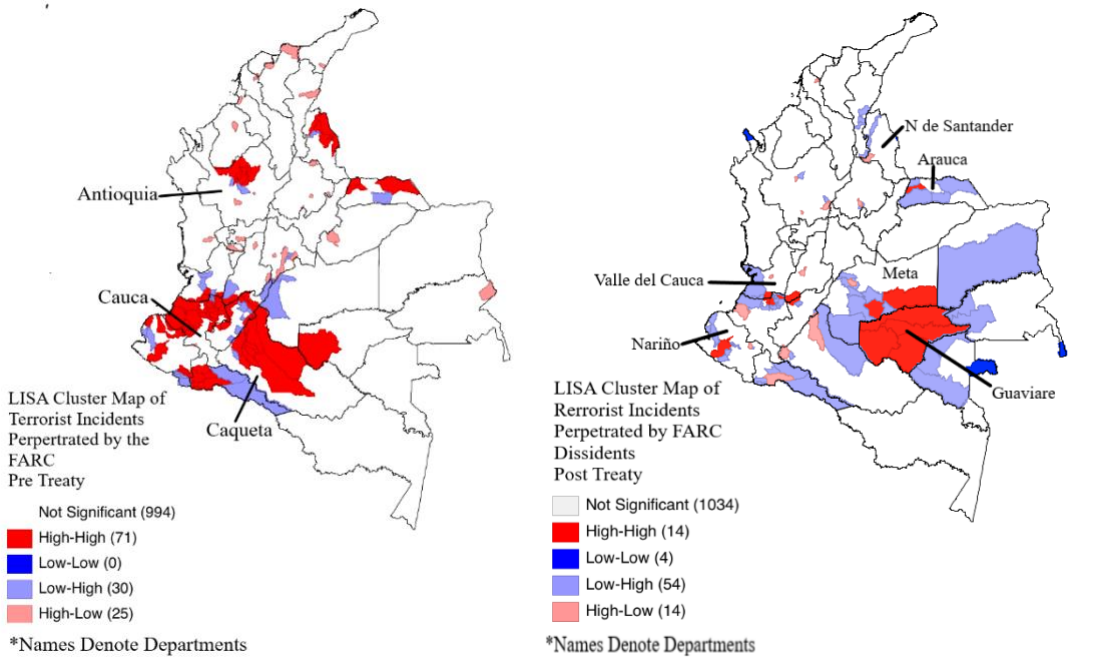


**Figure 4.2.8:** Local Moran's cluster map of terrorist incidents perpetrated by the FARC/FARC dissidents before and after the peace accord (*N*= 86 Months, November 2011 – December 2018)

the municipality of Lejanias. Regarding low concentrations, the pre-intervention period includes 586 municipalities while the post-intervention period increased to 958 municipalities. During the post-intervention period of the peace accord several cold spot clusters emerged. There were 13 departments that were either entirely a cold spot cluster or were made up mostly of cold spots with some municipalities that were not significant. Three departments were either entirely cold spots with one hotspot or a mixture of cold spots and nonsignificant municipalities with one hot spot. Lastly, Guainia was entirely a cold spot, for the exception for two of its municipalities and Antioquia exhibited a mixture of cold spots with non-significant municipalities and three hotspots.

Local Moran's I tests comparing the pre-intervention period with the post-intervention of the peace accord indicate that the number of municipalities with high incident counts of FARC dissident attacks that were surrounded by other municipalities with high incident counts decreased from 71 to 14 municipalities —a 80% decrease (Figure 4.2.8). No new High-high clusters emerged during the post-test. The number of municipalities with low incidents that were surrounded by other municipalities with low incidents decreased from 490 to 4 with no low-low clusters emerging following the period of the peace accord. The number of municipalities exhibiting a low number of incidents that were surrounded by municipalities with a high number of incidents increased from 37 to 54. Low-high outliers emerged in the western portion of the Valle del Cauca department, the western municipalities of Nariño, the northwestern municipalities of Norte de Santander, and four of the six municipalities of Arauca. The number of municipalities exhibiting a high number of incidents that were surrounded by municipalities with a low number of incidents decreased from 85 to 14 with no new high-

low outliers emerging in the post-test. Given these results, the response to research question *[Q10]* is yes — the geography of terrorist incidents perpetrated by FARC dissidents changed following the signing of the Peace Accords.

***Summary of Spatial Terrorist Clusters for the ELN***

The results of the Jenks classification for the raw number count of terrorist incidents perpetrated by the ELN during the pre- and post-intervention periods, in addition to the percent change by municipality are displayed in Figure 4.2.9. Results indicate that before the treaty was adopted, Saravena (n=21) and Bogota (n=11) were the only two municipalities that exhibited the amount of terrorist incidents within the top tier. Followed by Arauquita (n=10), El Tarra (n=9) and Tame (n=8) in the second highest classification. In the period following the signing of the peace accords, Saravena maintained itself in the category with the most terrorist attacks (n=13) and was accompanied in the top tier with Teorama (n=10). The second highest tier included two municipalities: Tame (n=7) and Valdivia (n=6). The municipalities that exhibited the highest incidental increase in terrorist attacks were Teorama and Aguachica (Table 4.2.6). Supplementary Table 4.3 displays the municipalities that exhibited an increase in terrorist incidents and those that began to exhibit terrorist attacks by the ELN following the peace accord.

The results of the Getis-Ord hot-spot analyses and Moran's I tests are displayed in Figures 4.2.10 & 4.2.11. Hot spot $G_i^*$ tests indicate a decrease in the number of hotspot and cold spot clusters when comparing the periods before and after the peace accord. The pre-intervention period includes 73 municipalities with a high concentration of incidents while the post-intervention period includes 62 municipalities — a 15% decrease (see

Figure 4.2.10). During the post-intervention period of the peace accord, two hotspot clusters emerged that include the northern municipalities of the Antioquia department and the Capital city of Bogota.

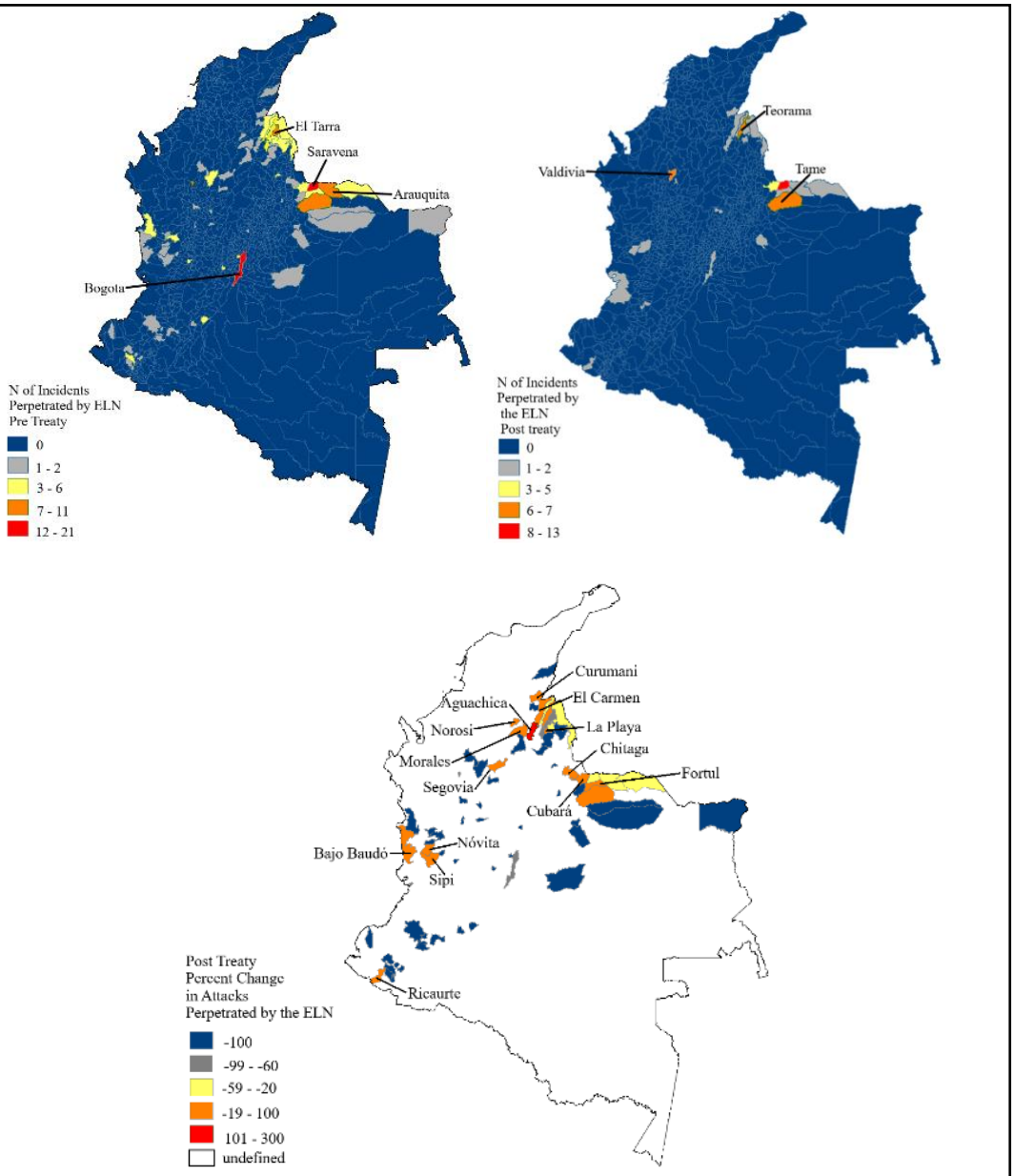


**Figure 4.2.9:** N and percentage change in terrorist incidents by municipality perpetrated by the ELN before and after the peace accord (*N*= 86 Months, November 2011 – December 2018).

| Municipality | Attacks (N) Pre-treaty | Attacks (N) Post-treaty | Percent Change Total N |
|---|---|---|---|
| Aguachica | 1 | 4 | — |
| Curumaní | 1 | 2 | — |
| Fortul | 2 | 4 | — |
| Nóvita | 1 | 2 | — |
| Teorama | 6 | 10 | — |
| Bajo Baudó | 1 | 1 | — |
| Chitagá | 1 | 1 | — |
| Cubará | 5 | 5 | — |
| El Carmen | 4 | 4 | — |
| La Playa | 1 | 1 | — |
| Morales | 1 | 1 | — |
| Norosí | 1 | 1 | — |
| Ricaurte | 2 | 2 | — |
| Segovia | 1 | 1 | — |
| Sipí | 1 | 1 | — |
| TOTAL | 29 | 40 | 38% |

**Table 4.2.6**: Municipalities that exhibited an increase in the N of ELN Attacks after the treaty and municipalities that continued to exhibit the same number of attacks following the treaty.

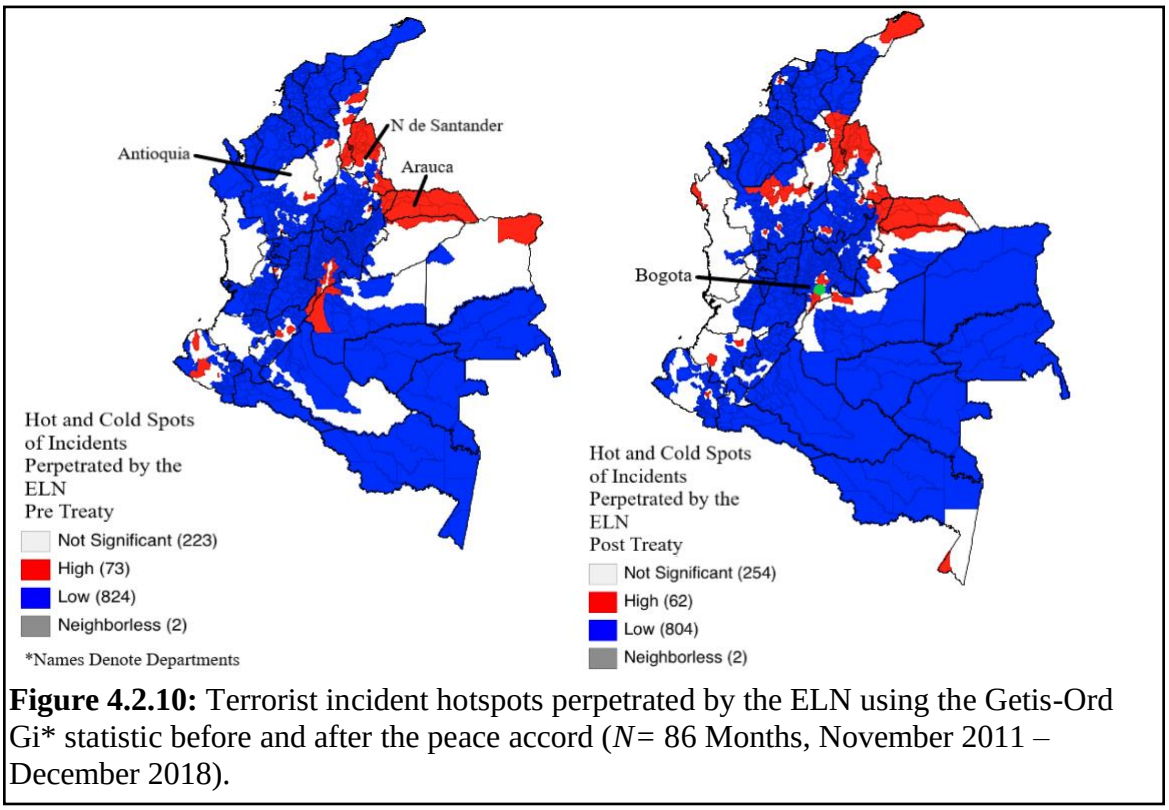


**Figure 4.2.10:** Terrorist incident hotspots perpetrated by the ELN using the Getis-Ord Gi* statistic before and after the peace accord (*N*= 86 Months, November 2011 – December 2018).

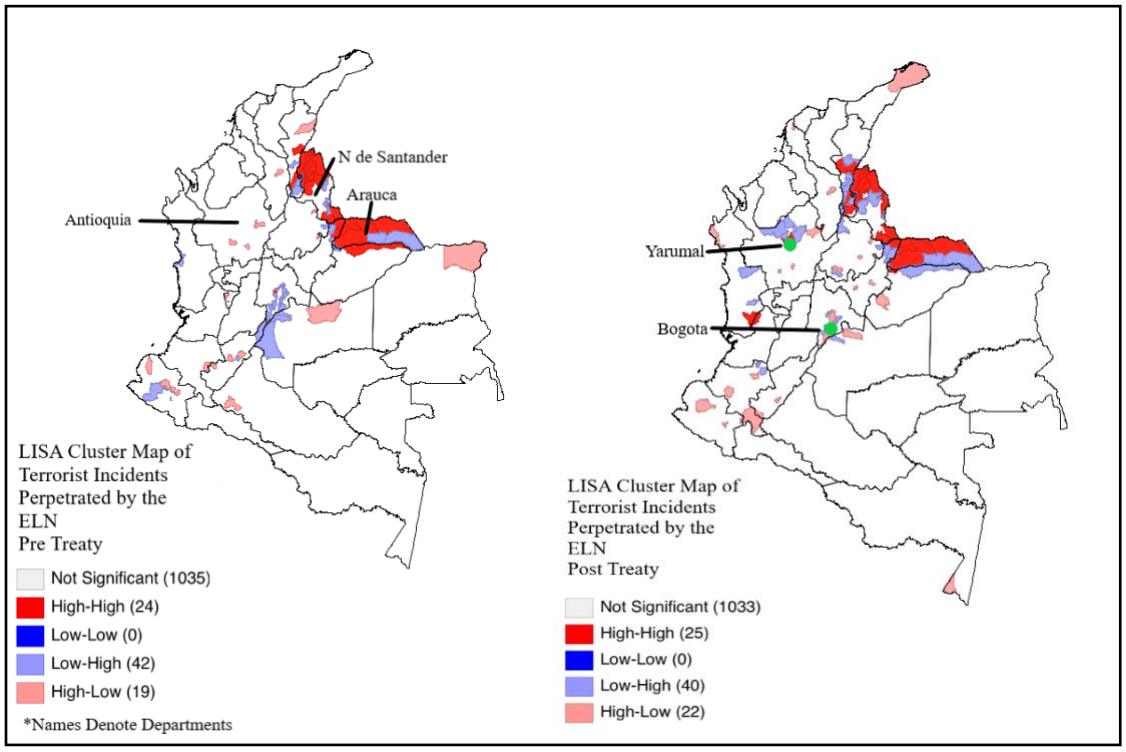


**Figure 4.2.11:** Local Moran's cluster map of terrorist incidents perpetrated by the ELN before and after the peace accord ($N$= 86 Months, November 2011 – December 2018).

Regarding low concentrations, the pre-intervention period includes 824 municipalities while the post-intervention period increased to 804 municipalities. The post-intervention period of the peace accord did not exhibit the emergence of new cold spot clusters.

Local Moran's I tests comparing the pre-intervention period with the post-intervention of the peace accord indicate that the number of municipalities with high incident counts of ELN attacks that were surrounded by other municipalities with high incident counts increased from 24 to 25 municipalities — a 4% increase. While no new high-high clusters emerged during the post-test period (Figure 4.2.11). The number of municipalities with low incidents that were surrounded by other municipalities with low incidents stayed at 0 during both periods. Therefore, no low-low clusters emerged following the period of the peace accord. The number of municipalities exhibiting a low

number of incidents that were surrounded by municipalities with a high number of incidents decreased from 42 to 40. Low-high outliers emerged in the northern region of Antioquia, specifically north of the municipality of Yarumal. The number of municipalities exhibiting a high number of incidents that were surrounded by municipalities with a low number of incidents increased from 19 to 22 with Bogota emerging as a municipality as a high-low outlier during the post-test period. These results indicate that the response to *[Q11]* is yes — the geography of terrorist incidents perpetrated by the ELN changed following the signing of the Peace Accords.

***Summary of Spatial Clusters for Homicides***

The results of the Jenks classification for the raw homicide count and homicide rate during the pre- and post-intervention periods, in addition to the percent change by municipality are displayed in Figure 4.2.12. Results indicate that before the treaty was adopted there were three municipalities that exhibited the amount of homicide incidents within the highest tier; Cali (n=3755), Bogota (n=2754), and Medellin (n=2478) and three municipalities that exhibited the rate of homicides within the highest category; Granada (n=9578), Florencia (n=4969), and La Victoria (n=4862). In the period following the signing of the peace accords, Cali (n=2668) and Bogota (n=1853) maintained themselves in the highest category of the homicide count. At the same time Granada (n=5307), Florencia (n=2419), and La Victoria (n=1967) maintained themselves in the tier with the highest rate of homicides. Two more municipalities were included in the highest category of homicide rates; Puerto Colombia (n=2566) and El Peñól (n=2342). There were 41 municipalities that were ranked in the highest tier of raw

number percentage change and 10 in the highest category of change in rate (Figure 4.2.12). The 20 municipalities that exhibited the highest increase in the homicide rate between the pre-intervention period and the period following the peace accords are displayed in Table 4.2.7. Appendix D displays the 100 municipalities that experienced the highest homicide rate increase between the two periods.

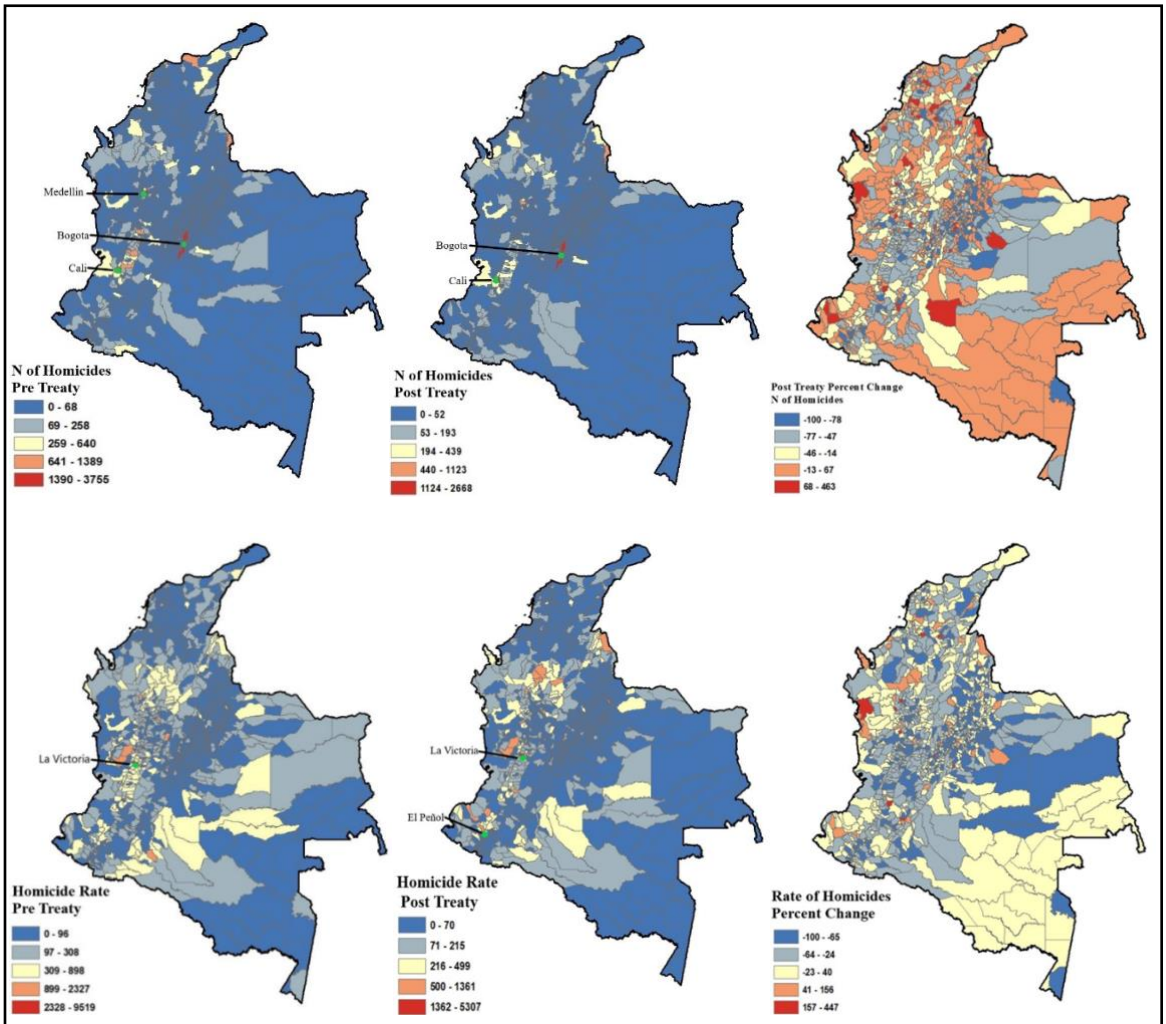


**Figure 4.2.12:** N, rate, and percentage change in homicides by municipality before and after the peace accord (*N*= 132 Months, January 2010 – December 2020).

| Municipality | Department | Homicides (N) Pre-Peace Accord | Homicides (N) Post Accord | Incidental Increase Total N | Percent Change Total | Homicide Rate Pre-Peace Accord | Homicide Rate Post Accord | Incidental Rate Increase | Percent Change Total Rate |
|---|---|---|---|---|---|---|---|---|---|
| Jardín | Antioquia | 8 | 45 | 37 | — | 57.71 | 315.68 | 257.97 | — |
| Quipile | Cundinamarca | 1 | 3 | 2 | — | 11.95 | 47.08 | 35.13 | — |
| San Fernando | Bolívar | 1 | 4 | 3 | — | 7.73 | 29.88 | 22.15 | — |
| Caicedo | Antioquia | 4 | 14 | 10 | — | 51.22 | 171.40 | 120.18 | — |
| Galeras | Sucre | 2 | 7 | 5 | — | 10.57 | 34.63 | 24.07 | — |
| Liborina | Antioquia | 3 | 10 | 7 | — | 32.22 | 102.07 | 69.85 | — |
| Toribío | Cauca | 12 | 40 | 28 | — | 41.53 | 124.31 | 82.78 | — |
| Bojayá | Chocó | 3 | 9 | 6 | — | 27.47 | 79.39 | 51.92 | — |
| Paicol | Huila | 1 | 3 | 2 | — | 16.62 | 45.72 | 29.11 | — |
| Quetame | Cundinamarca | 1 | 2 | 1 | — | 14.69 | 39.72 | 25.03 | — |
| Santa Ana | Magdalena | 3 | 8 | 5 | — | 12.18 | 31.20 | 19.02 | — |
| Maní | Casanare | 7 | 20 | 13 | — | 49.98 | 124.99 | 75.01 | — |
| Tarazá | Antioquia | 113 | 228 | 115 | — | 351.37 | 873.86 | 522.50 | — |
| La Peña | Cundinamarca | 1 | 2 | 1 | — | 13.74 | 33.63 | 19.89 | — |
| Betulia | Sucre | 4 | 10 | 6 | — | 31.58 | 76.62 | 45.04 | — |
| Pailitas | Cesar | 9 | 22 | 13 | — | 50.45 | 118.73 | 68.28 | — |
| El Carmen de Bolívar | Bolívar | 23 | 52 | 29 | — | 33.58 | 73.77 | 40.19 | — |
| Betania | Antioquia | 40 | 83 | 43 | — | 372.72 | 817.49 | 444.78 | — |
| Chocontá | Cundinamarca | 1 | 2 | 1 | — | 4.77 | 9.89 | 5.12 | — |
| Venecia | Antioquia | 25 | 41 | 16 | — | 176.27 | 359.52 | 183.26 | — |
| TOTAL | | 262 | 605 | 343 | 131% | 1368.35 | 3509.60 | 2141.25 | 156% |

**Table 4.2.7**: N and Rate of Homicides in top 20 municipalities with highest percentage increase of N and Rate of Homicides before and after the treaty.

The results of the Getis-Ord hot-spot analyses and Moran's I tests are displayed in Figures 4.2.13 & 4.2.14. Hot spot $Gi^*$ tests indicate a decrease in the number of hotspot when comparing the periods before and after the peace accord. The pre-intervention period includes 108 municipalities with a high concentration of incidents while the post-intervention period includes 94 municipalities — a 13% decrease. During the post-intervention period of the peace accord, three hotspot clusters emerged that include 1) the northwestern municipalities of Norte de Santander, 2) the municipality of Riosucio, Chocó with its bordering municipalities to the east in Antioquia, and 3) the northeastern municipalities of Cauca. Regarding low concentrations, the pre-intervention period includes 202 municipalities while the post-intervention period increased to 216 municipalities. The post-intervention period of the peace accord exhibited the emergence of one cold spot in the southeastern portion of the Nariño department.

Local Moran's I tests comparing the pre-intervention period with the post-intervention of the peace accord indicate that the number of municipalities with a high homicide rate that were surrounded by other municipalities with a high rate decreased from 64 to 60 municipalities — a 6% decrease. The high-high clusters that emerged during the post-test period were the same three hotspot clusters found with the Hotspot $Gi^*$ (Figure 4.2.14). The number of municipalities with a low homicide rate that were surrounded by other municipalities with a low rate increased from 192 to 208 during the post-test period. The low-low cluster that emerged during the post-test period is the same as the cold spot cluster that was found with the Hotspot $Gi^*$. The number of municipalities exhibiting a low homicide rate that were surrounded by municipalities

with a high rate decreased from 44 to 34. No new low-high outlier clusters emerged during the post-period. The number of municipalities exhibiting a high rate of homicides that were surrounded by municipalities with a low rate decreased from 5 to 2 with no new high-low outliers emerging during the post-test period. In response to [Q12], yes — there was a change in the distribution of cartel-related homicides following the signing of the Peace Accords.

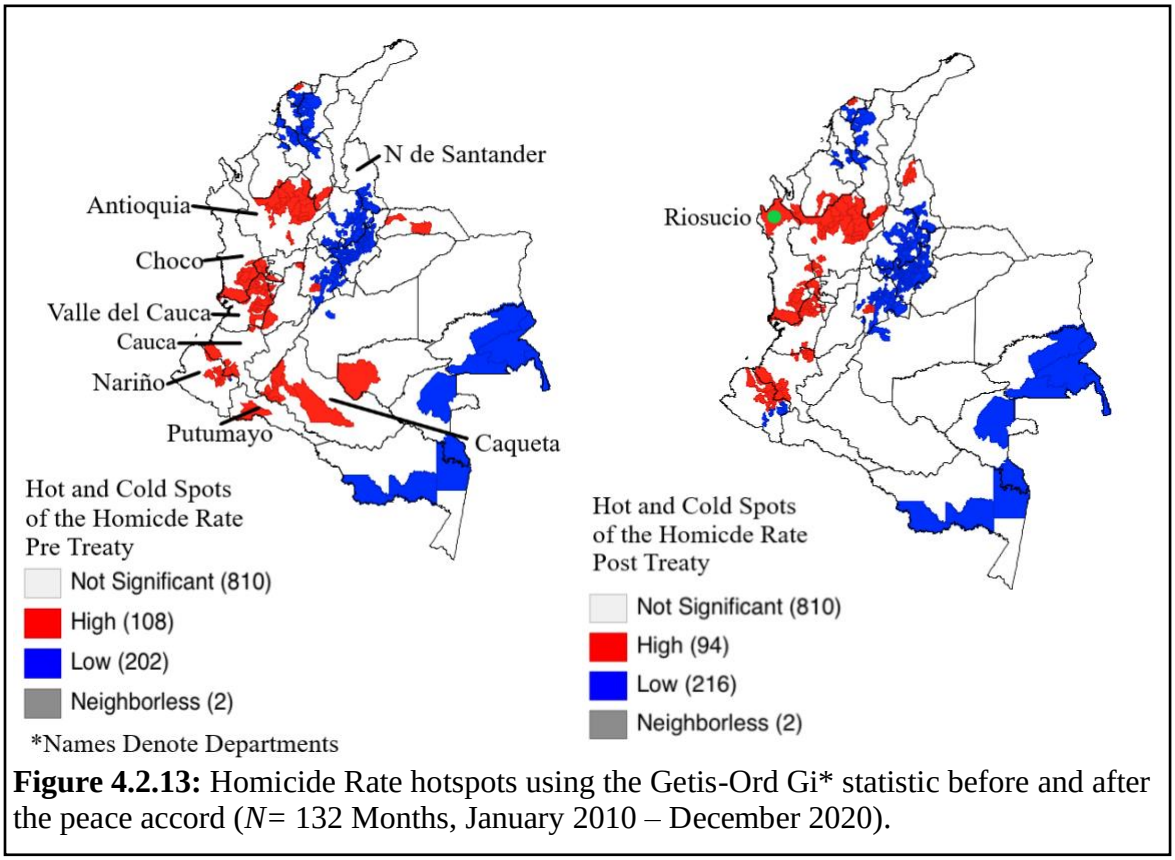


**Figure 4.2.13:** Homicide Rate hotspots using the Getis-Ord Gi* statistic before and after the peace accord (*N*= 132 Months, January 2010 – December 2020).

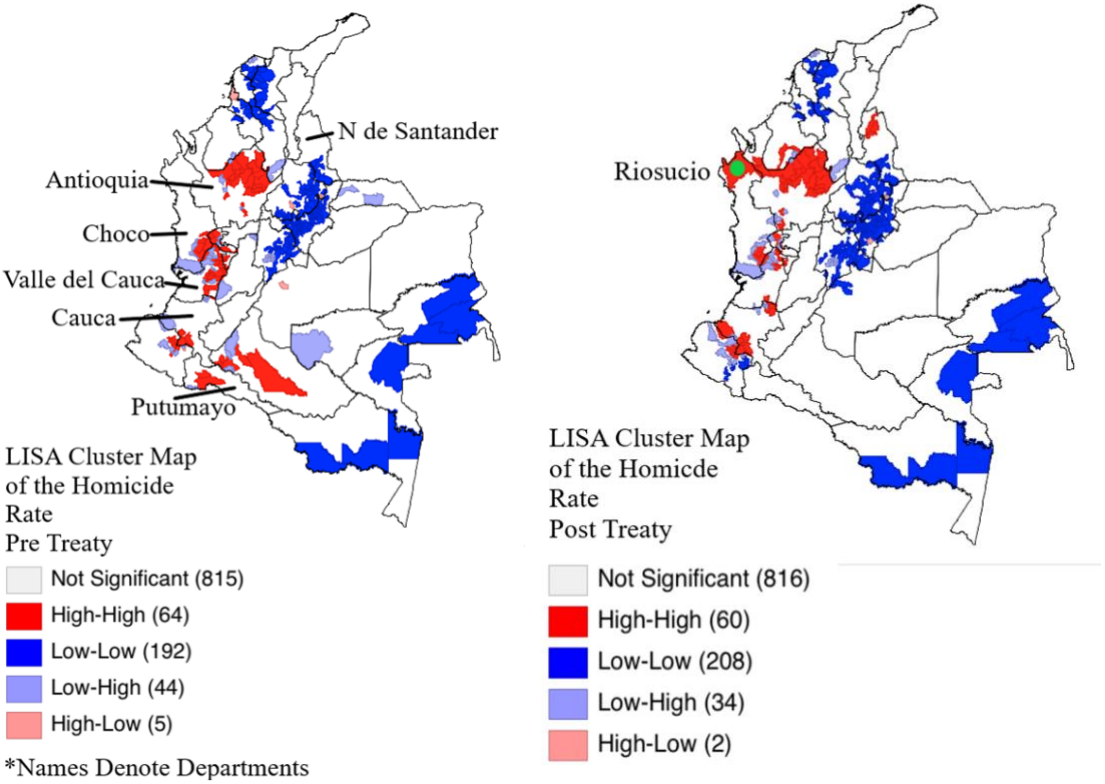


**Figure 4.2.14:** Local Moran's cluster map of the homicide rate before and after the peace accord ($N$= 132 Months, January 2010 – December 2020).

## Discussion

### *FARC Dissidents*

Results suggest that the signing of the peace accord between the Colombian government and the FARC is associated with a decrease in terrorist attacks perpetrated by FARC dissidents. Similarly, the signing of the peace accords also had a negative impact on the lethality of the attacks perpetrated by the group. More importantly, some municipalities became hotspot clusters for terrorist incidents perpetrated by FARC dissidents while simultaneously exhibiting a reduction in the number of attacks. Also, since no previous studies have analyzed the effect of a peace deal on the number of attacks perpetrated by a remnant group, these findings cannot be linked to any prior

works within, or outside of Colombia. However, the findings of the peace deal approach are essential to compare to the outcomes of the of the HVT strike approach assessed in part I of this chapter.

Following the HVT strikes, terrorist attacks significantly increased and spread to a greater number of municipalities. In comparison, the peace treaty approach saw the number of attacks perpetrated by dissident groups significantly decrease both in total number and in the number of municipalities in which the attacks were carried out. A decrease in attacks is likely the result of the dissident groups operating as a federation, in which different leaders organize activities based on their economic and commercial wellbeing, instead of operating as a hierarchical network as the original FARC once did (InSight Crime, 2019). For example, the Segunda Marquetalia dissident faction has indicated that it plans to endure the FARC's original political agenda and armed insurrection with the use of terrorist attacks (InSight Crime, 2019). This faction is led by former secretariat member and second in command of the former FARC, Iván Márquez (El Mundo, 2019). However, unlike the Márquez faction, most dissident factions will not continue the FARC's political struggle, therefore, it would not be rational for these dissident groups to perpetrate terrorist attacks if their main objective is to benefit from the diverse criminal economies left behind by the FARC's demobilization as attacks will bring more attention from Colombian security forces.

The only similar outcome exhibited by both approaches was the significant reduction in the attack intensity rating of the attacks. It can be the case that attacks perpetrated by dissident groups have become less lethal following the peace accord as a result of losing key members to demobilization with the know how to coordinate

sophisticated and deadly attacks. Similarly, due to the decrease of municipalities that were attacked following the treaty, there was a significant increase in municipalities that exhibited zero attacks and that became cold spots or nonsignificant clusters.

More importantly, although the overall displacement of attacks following the treaty was benign, there were certain municipalities in which the dispersion was malignant as municipalities in southern Meta and Guaviare became hotspots and exhibited high-high clustering. These attacks can be attributed to the 1st Front Dissidence faction. Since 2016, the group has attacked security forces with explosives and has been involved in criminal undertakings with the goal of strengthening its hegemony in Meta, Guaviare and Vaupés (InSight Crime, 2019a). Unlike the Márquez dissident faction that is focused on maintaining the FARC's political agenda, the 1st Front has centered it efforts on controlling coca crops and production in Guaviare and trafficking routes in Vichada and Guainía (InSight Crime, 2019a). Therefore, hegemony over the different sectors of the drug market, particularly the control of fields to grow coca has led the 1st Front to commit retaliatory attacks against Colombian security forces that have engaged in operations to eradicate coca cultivation in the area (Smiley, 2016).

The fact that the illegal economic resources of the illicit drug trade continue to be available in the departments of Meta, Guaviare and Vaupés following the demobilization of the FARC, draws similarities to Autesserre's (2006) observations in post war Democratic Republic of Congo (DRC). While the continued presence of rebel groups in the eastern regions of the DRC permitted for conflicts to continue between armed insurgent groups and DRC government forces, a comparable situation has taken place in the departments of Guaviare and Meta between the 1st Front and Colombia security

forces. Likewise, this condition seems somewhat related to Nussio and Howe's (2016) breakdown of protection systems theory. While Nussio and Howe (2016) indicate that criminal groups will compete for newly available illegal rents through violent competition following the demobilization of an armed group, this particular situation has instead been accompanied with violent confrontations between the 1st Front and Colombian security forces. This unique situation has seen the 1st Front carry out attacks against security forces in retaliation for operations directed at hindering the illegal rents controlled by the 1st Front following the demobilization of the FARC.

***ELN***

Results suggest that the signing of the peace accord between the Colombian government and the FARC is associated with a significant increase in terrorist attacks perpetrated by the ELN. Since no previous works have evaluated the effect that a peace accord has on the number of attacks perpetrated by remaining armed insurgent group, these findings cannot be associated to any prior studies. However, these findings are novel and may be foretelling for states that are combatting multiple insurgent groups and engaged in a peace process with one of the groups. While the average number of monthly terrorist attacks perpetrated by the ELN significantly increased following the peace accords with the FARC, it is important to closely observe the trends in Figure 4.2.4.

Following the adoption of the peace accords, monthly attacks generally begin to decline and bottom out to zero attacks in December 2017, which was during the ceasefire agreement that began in September 2017 between the ELN and the Colombian government. However, this ceasefire expired on January 9, 2018 (Asmann, 2018) and seems to have prompted the ELN to resume attacks as assaults immediately began on

January 10th and saw the first month of 2018 record 21 attacks perpetrated by the group (GTD, 2021) — a significant increase from the prior month in which the ceasefire was in place. This uptick in attacks is consistent with prior studies that have found ceasefires to produce a decline in violence (Karakus & Svensson, 2020; Williams et al., 2021). Therefore, it seems that the initial effect of the FARC peace accord with the government assisted the Colombian government in bringing the ELN to the negotiating table and a ceasefire which allowed for attacks to considerably decrease. While the termination of the ceasefire significantly increased attacks perpetrated by the ELN. Moreover, similar to the FARC maps, it is important to remember that of the municipalities that became a hotspot cluster for ELN terrorist attacks following the accord, also exhibited a decrease in the number of attacks.

Following the termination of the ceasefire, the ELN released a statement indicating that while the two parties are not in a ceasefire, military actions will ensue from both ends (Albaladejo, 2018). The decision by the group to reinitiate attacks prompted the group to increase attacks in Norte de Santander and Arauca, departments considered to be strongholds of the insurgent group (Oxford, 2019). For example, following the ceasefire, the insurgent group attacked police forces in Saravena, Arauca, a police station in El Tarra, Norte de Santander (BLU, 2018) and a military base in Arauca (Casey, 2018). Additionally, the group's Urban War Front planted a bomb in a police station in Barranquilla, Atlántico that left five police officers dead (Albaladejo, 2018). Similarly, the eastern municipalities of Antioquia and the municipality of Juradó in northern Chocó may appear as hotspots as the ELN has previously contested territorial hegemony with the Gulf Clan and FARC dissidents in these areas (WOLA, 2020).

The increase of attacks by the ELN following the termination of the ceasefire and the general distribution of these attacks offer several interpretations. First, the ELN continues to be the most robust criminal group in the Arauca and Norte de Santander departments. Second, the increase in attacks in northern Chocó may imply that the group is consolidating power in the area. Third, a peace accord with one insurgent group may inspire secondary groups to negotiate a peace accord of their own. Consequently, these groups may enter into a ceasefire during negotiations which will decrease the amount of attacks perpetrated by the group. Fourth, if the ceasefire is not renewed during peace negotiations, attacks may resume and in the case of the ELN, attacks resume at significantly higher rate in order to convince the Colombian government to resume peace talks.

***Homicides***

Results suggest that homicides in Colombia have increased insignificantly following the signing of the peace accords. Although there was a noteworthy decrease in homicides following the initiation of peace talks between the Colombian government and the FARC, the period following the signing of the peace accords has seen a continuation of homicide trends similar to those when the accord was signed. This is similar to the experience faced by Colombia's Latin American counterparts of Guatemala, Nicaragua, and El Salvador as discussed in chapter 2. More importantly, the results of the spatial analyses indicate that numerous pockets of Colombia are responsible for the continuation in violence as several regions have exhibited an increase in homicides following the accords.

It seems that the biggest contributor to the increase in violence in these areas is attributed to the vacuum for control of the illegal economies left by the FARC following their demobilization. This comes as several regions formerly dominated by the FARC have emerged as newly disputed territories by different criminal organizations. For example, according to Colombia's Office of the Attorney General, in 2018, 161 municipalities that were formerly controlled by the FARC exhibited a 30 percent increase in homicides when compared to 2016 (Fiscalia, 2019). This increase in homicide incidents is related to the breakdown of protection systems theory as more than half of the homicides were connected to clashes between criminal groups (Chaparro, 2019).

The five regions that exhibited a significant increase in homicides include the northern municipalities of Antioquia known as the "Bajo Cauca" region, the northeastern municipalities of Norte de Santander known as the "Catatumbo" region, the northwestern municipalities of Nariño, the northwest area of the Chocó department, and the southwestern portion of the Cauca department. These five regions have several common factors: first, all of the regions are key coca producing areas (Ávalos & Olaya, 2017; Ávila & Clavel, 2017; UNODC, 2018; Cardenas, 2020); second, four of these regions serve as strategic trafficking routes — the Catatumbo region is located along Venezuela's western border, Nariño has the Pacific Ocean to the west and the Ecuadorian border to its south, lastly, Chocó and Cauca also has access to Colombia's Pacific coast. Third, some of these regions have goldmines that are exploited by criminal networks, mainly Nariño and Chocó (Gagne, 2014; Ávalos & Olaya, 2017). Lastly, all of these areas exhibit the presence of multiple criminal networks attempting to gain hegemony over each of the regions.

Specifically, in the Bajo Cauca region of northern Antioquia department, FARC dissidents, the ELN, and the Caparrapos are contesting the illegal economies formerly controlled by the 5th,18th,36th and 58th fronts of the FARC. In the case of the Catatumbo region in northern municipalities of Norte de Santander, the ELN and the Popular Liberation Army (EPL) are fighting for the strategic drug trafficking corridor left behind by the FARC's 33rd front (Abierta, 2018; Chaparro, 2019). Regarding Nariño, the ELN and FARC dissidents have fought for control of cocaine production and illegal mining in the northwestern portion of the department (Ávalos & Olaya, 2017). Additionally, the central mountainous region of Nariño has seen FARC dissidents and the Gulf Clan engage in violent conflict for hegemony over the important drug trafficking area (Cardenas, 2020). With respect to the Chocó department, the ELN and Gulf Clan are fighting for control of the northern area of the department that has strategic access to Panama and was previously controlled by the FARC's 57th Front (Villalba, 2020). Lastly, the ELN and FARC dissidents are fighting for control of coca crops and trafficking routes in the southern portion of Cauca that borders Nariño (Cardenas, 2020). The increase in homicides exhibited in the aforementioned regions appear to be corroborated in the spatial analyses of this study (see Figure 4.2.13 and 4.2.14).

The violent competition between the several armed groups competing to monopolize the FARC's former illicit economies and territories seems to be related to Nussio and Howe's (2016) breakdown of protection systems theory. Particularly, violent competition between the criminal groups seems to be related to the third process linking the breakdown of protection to violence, which indicates that competition becomes possible when the unopposed protection scheme is disturbed (Nussio & Howe, 2016). In this case,

the protection scheme that was disturbed is the hegemony that the FARC had over its territories prior to the peace accord and demobilization process.

The aftermath of the disruption is consistent with Themnér's (2011) assertion that demobilization frequently involves the competition between remobilized armed groups. This seems applicable to the present case as former FARC combatants have remobilized into dissident factions and are currently contesting areas with illicit economies in Antioquia, Chocó, Nariño and Cauca. Similarly, Rozema (2008) indicates that criminal networks will also compete against each other following demobilization in an attempt to monopolize the illicit rents of conflict economies. This assertion also appears to be valid as other armed insurgent groups such as the ELN, EPL, the Gulf Clan, and the Caparrapos have battled it out for illicit rents previously controlled by the FARC.

Furthermore, Nussio and Howe (2016) also highlighted that competition among criminal groups is enabled when the demobilization and reintegration of mid-level leaders is ineffective. This is because previous mid and high-level combatants who previously climbed their organization's chain of command obtained several skills in the management of illicit economies and may use this expertise to establish new criminal networks. For example, following the AUC's 2006 demobilization, several mid and high-ranking ex-combatants with specialized proficiencies founded new organizations and took over some of the illicit rents formerly managed by the AUC (Nussio, 2017). This seems to be the situation with the demobilization of the FARC as several mid and high-level combatants did not participate in the demobilization process. Instead, these ex-FARC combatants are now leading the many FARC dissident factions who are fighting other groups for control of the illicit rents previously controlled by the FARC. This

situation draws direct parallels to the former mid and high-ranking AUC combatants who created their own criminal organizations following the AUC's demobilization as outlined by Nussio (2017).

Examples of former mid and high-ranking leaders now leading dissident factions can be seen with the leader of the Segunda Marquetalia faction, Iván Márquez. Márquez was a secretariat member and second in command of the FARC prior to the group's demobilization (InSight Crime 2021). Previously, Márquez was responsible for operating the FARC's drug operations, chiefly the manufacturing and the distribution of cocaine while he also commanded several FARC units (InSight Crime 2020). It is likely the case that Márquez's experience in administrating the FARC's cocaine operations and leading numerous units throughout his FARC tenure has aided him in running the day to day operations of the Segunda Marquetalia faction he is commanding.

Another example can be seen with the leader of the 7th Front faction of the FARC dissidents, Gentil Duarte. Prior to the peace accord, Duarte was originally the commander of the FARC's 7th front where he managed illicit crop cultivation, extorsion rackets and cocaine processing in the department of Meta (infobae, 2021). In addition to leading the 7th front, Duarte was promoted to the Eastern Bloc's top command making him one of the high-ranking members of the bloc (Colombia Reports, 2019). Today, as leader of the 7th Front faction of the FARC dissidents, Duarte controls coca cultivation, cocaine processing labs, extortion, controls drug trafficking routes in southeast Colombia and maintains relations with other dissident factions and TCOs with the purpose of monopolizing the cocaine trade in neighboring countries (InSight Crime 2019). It is probable that proficiencies gained by Duarte fulfilling his responsibilities as commander

of the FARC's 7th Bloc and his role in the top command of the Eastern Bloc allowed him to carry over these skills as became leader of the 7th Front faction of the FARC dissidents.

With the examples of Márquez and Duarte in mind, it appears that the Colombian government's failure to demobilize ex-mid and high-ranking FARC combatants has led to a comparable scenario to when the AUC was demobilized. While the AUC demobilization process saw several of its mid and high-ranking ex-combatants with distinct criminal skillsets create new armed groups. The FARC's demobilization process has seen an almost identical situation where former mid and high-ranking members with sophisticated criminal competence have continued to operate through FARC dissident groups. The condition of the Colombian government's failure to integrate key ex-FARC combatants into the demobilization process seems to be aligned with Nussio and Howe's (2016) assertion that that competition among criminal groups is enabled when the demobilization and reintegration of mid-level leaders is ineffective.

Nussio and Howe (2016) also indicate that an increase in violence due to competition should be attributed to multiple armed groups emerging in the areas previously controlled by the demobilized group. This seems to be the case with the FARC's demobilization as the areas that they formerly controlled have seen the emergence of more than one armed group in an attempt to take over the illicit rents vacated by the armed group. For example, the pockets throughout Colombia that are exhibiting an increase in violence due to violent competition for control of the FARC's former territories is attributed to the ELN and EPL in Catatumbo; FARC dissidents, the ELN and the Caparrapos right-wing group in Bajo Cauca; FARC dissidents, the ELN and the Gulf Clan in Nariño; the ELN and Gulf Clan in Choco; and FARC dissidents and the

ELN in Cauca. Thus, all of these regions meet Nussio and Howe's (2016) assumption that violent competition is the result of more than one armed group emerging in the territories previously controlled by the now demobilized group with the purpose of taking over the abandoned illegal economies.

In addition to the increase in homicides in areas previously controlled by the FARC, there are also two ancillary factors that are related to the oscillating trends in homicides following the peace accord. The first factor is related to the persecution of social leaders following the signing of the peace accords. Social leaders include advocates of human rights, advocates of crop substitution, and environmental leaders. Since 2016, more than 400 human rights advocates have been killed in Colombia (HRW, 2021). It appears that social leaders are targeted due to disagreements over areas deemed to be discarded by the FARC. New armed groups in contested areas that seek to gain hegemony over drug trafficking and illegal mining formerly controlled by the FARC has seen the recruitment of former FARC combatants into these new groups. As these groups fight for control of these contested areas, there has been 60 killings of social leaders attributed to FARC dissident groups and over 50 to former paramilitary groups and DTOs (Castro et al., 2020).

Additionally, 16 social leaders that were registered in the National Comprehensive Program for the Substitution of Illicit Crops, a coca substitution program, were killed during the last two years of the post-period (Castro et al., 2020). Thus, it appears that TOC groups are targeting social leaders who are choosing to no longer be involved in the cultivation of illicit crops. It is likely TOC groups will target social leaders who advocate for the coca substitution program because as more rural residents

convert into cultivating legal crops, the source of illicit crops to process and export decreases for these criminal groups. Likewise, environmental leaders who are advocating against the exploitation of land by armed groups are being targeted (Castro et al., 2020). While social leaders have been targeted since the signing of the peace accord, the targeting of these individuals has not been equal throughout the country. A Human Rights Watch (2021) report identified six areas where these killings have been most prevalent: the northern region of the Cauca department, the Catatumbo region of the North Santander department, the Southern Pacific region in the department of Nariño, the Bajo Cauca region of the Antioquia department, the Caguán region of the Caquetá department, and the foothills region of the Arauca department. Four of these regions are corroborated in Figure 4.2.13 which depicts these areas continuing to be or becoming homicide hotspots in the period following the peace accords.

The second ancillary factor linked to the oscillating homicide trends following the peace accords is related to the persecution of ex-FARC combatants. According to Deutsche Welle (2021), 236 former insurgents were killed between the signing of the peace accord and December 2020. A November 2020 report from the Colombian Organized Crime Observatory (OCCO) outlined areas where the murder of ex-FARC members is most prevalent. To begin with, the report indicates that areas with the greatest number of ex-FARC murders are those municipalities with the presence of FARC dissidents, while municipalities with paramilitary successor groups and/or the ELN also make up a significant portion of where ex-FARC members have been targeted (Charles, Baysal & Forero, 2020). Therefore, it is worth considering that the persecution of ex-

FARC members by combatants of rival groups that remain active is a contributor to the increase in homicides exhibited in these four municipalities.

The OCCO report also indicated that most of the ex-FARC member homicides similarly took place in municipalities with demobilization sites known as Territorial Spaces for Training and Reincorporation (ETCR) or New Areas of Reincorporation (NAR) (Charles et al. 2020). Similarly, the two municipalities with the most homicides of ex-combatants occurred in municipalities with the highest number of hectares of coca. This suggests that areas with a high concentration of ex-FARC combatants, a high quantity of coca, and a large presence of FARC dissidents is where ex-FARC members are most vulnerable.

Lastly, ex-FARC combatants have also been targeted because some of the former combatants have taken up roles as community leaders. Of those ex-combatants killed through April 2021, 20% were occupying leadership positions in economic projects, associations or coca substitution programs (Reuters, 2021). Thus, signifying that there's an association between the assassination of community leaders and the killing of ex-FARC combatants, as one-in-five ex-combatants killed were a community leader. Lastly, it is important to keep in mind that the major contributor to the oscillating trends in homicides in the post peace accords Colombian landscape seem to be related to the territorial disputes of former FARC controlled territory by several armed groups. While the persecution of social leaders and ex-FARC combatants are subsidiary factors related to the continued violence within Colombia.

**Comparing High Value Target Strikes and the Peace Accords**

Before a conclusion can be drawn, it is important to first recall part I of this chapter in order to adequately compare it to part II. Part I of this chapter analyzed the effect that targeted strikes against FARC secretariat members had on the number of terrorist incidents perpetrated by the FARC and their lethality. Part II analyzed the effect that the 2016 peace accord between the Colombia government and the FARC had on the number of terrorist incidents perpetrated by the FARC and their lethality. Therefore, part I and II analyzed the effect that two different approaches had on a hierarchical armed insurgent group. Part II also analyzed the effect that the peace accord had on terrorist incidents perpetrated by the ELN and on homicides throughout Colombia.

The first part of this chapter only analyzed terrorist incidents because homicide data was not available for the time period that was assessed. As a result, homicides were only analyzed in part II of this study, as well as terrorist incidents perpetrated by the ELN. Therefore, the comparison between the approaches assessed in part I and II lies in the contrasting FARC terrorist incidents and their lethality. However, it is still worth mentioning what effect the peace accord had on homicides in Colombia and on terrorist incidents perpetrated by the ELN. More importantly, chapter 6 will include a comparison of the effect that the HVT strikes against DTO leaders had on homicides in Tijuana, Mexico (the chapter 3 study) with the effect that the peace deal had on homicides throughout Colombia, and the effect that vigilantism has on homicides in Guerrero, Mexico (the chapter 5 study).

In accordance with previous research on targeted strikes against HVTs, targeted strikes against FARC leaders saw the FARC commit significantly more attacks following

the strikes. The increase in attacks following a targeted strike seemed to be consistent with the backlash theory, which suggests that armed groups will retaliate against the targeted strike they just fell victim too. While attacks by the FARC increased following strikes against their leaders, the lethality of the attacks was significantly affected as the attack intensity of the incidents considerably decreased. Indicating that elements of the mobilization theory were also at play as the FARC's ability to efficiently mobilize and coordinate attacks was disturbed. Also, following the targeted strikes against its leaders, the FARC began to perpetrate attacks in municipalities that it had not attacked before.

Conversely, the signing of the peace accord between the Colombian government and the FARC saw a significant decrease in attacks committed by FARC dissidents. While the number of attacks perpetrated by FARC dissidents considerably decreased, so did the lethality of the reduced attacks. Similarly, the number of municipalities in which attacks were perpetrated by FARC dissidents significantly decreased following the accord. Thus, HVT strikes and the peace accord have the similarity that both approaches saw a significant reduction in the lethality of attacks. However, the targeted strike approach saw incidents increase in total number and in the number of municipalities that were targeted. Whereas the peace treaty approach saw incidents decrease in total number and in the number of targeted municipalities.

Regarding the effect that the peace accord had on terrorist incidents perpetrated by the ELN, terrorist incidents committed by the ELN decreased following the accord. However, incidents significantly increased following the expiration of a ceasefire between the group and the Colombian government. Following the expiration of the armistice, incidents by the ELN increased in municipalities considered to be ELN

strongholds. Similarly, the ELN should be the emphasis of discussion when considering the effect that the peace accord had on homicides in Colombia.

Homicides in Colombia have not decreased significantly following the signing of the peace accord. While a noteworthy decrease in homicides was observed when the Colombian government and the FARC initiated peace talks, the period following the signing of the peace accord has seen a homicide trends similar to when the accord was signed. It appears that numerous pockets of Colombia are responsible for the continuation in violence as several regions have exhibited an increase in homicides following the accords. It seems that the biggest contributor to the increase in violence in these areas is attributed to the vacuum for control of the illegal economies left by the FARC following their demobilization. Of the five areas previously discussed that have exhibited violent competition between armed groups following the FARC's departure, the ELN is involved in all five regions as it attempts to gain control of the FARC's illegal economies from other groups. Therefore, homicides have slightly increase overall, but have increased considerably in certain areas. In the areas that violence has increased, the ELN is now present. Thus, the ELN has increased its supremacy following the peace accord.

**Limitations**

The GTD has been widely used in many terrorism studies. However, the GTD is an opensource database that relies on reports about terrorism from electronic or print media causing this database to have some limitations. This is because the media may report imprecisions and falsehoods as information may be contradictory or incorrect, and there may be numerous or no claims of accountability (LaFree, 2010). Additionally, censorship by the state and misinformation may also influence results (LaFree, 2010).

Furthermore, some of the incidents are categorized by the GTD as listed as "suspected perpetrator group" therefore it is not for certain if the classified group was the perpetrator.

Similarly, the SIEDCO data used to analyze homicides in this study also comes with limitations. Like the INEGI data employed in chapter 3, this dataset only includes reported crimes, therefore, there is a chance that unreported homicides in Colombia are not accounted for in the data that was analyzed. However, as mentioned in chapter 3, when compared to other violent crimes, homicides have a fairly high rate of reporting, partly because it is a difficult crime to hide when compared to other violent crimes (Calderon et al., 2019). Another limitation of the data employed in this study is that incidents of homicide were disaggregated to only include homicides "with a firearm." Unlike the INEGI data, homicides in the SIEDCO dataset are not classified into "intentional or "unintentional." Therefore, it is possible that some of the homicides analyzed in this study were unrelated to the violence that is linked to the signing of the peace accords. However, because no dataset on cartel-related homicides in Colombia exists, the use of homicides with a firearm as a substitute for cartel-related homicides is the most precise data accessible at this time, as it excludes homicides perpetrated with a "cold weapon" as cartel related violence is likely to include the use of firearms (Espinal-Enriquez and Larralde, 2015). Although this study employed data from SIEDCO, it is suggested that the Colombian government and nongovernmental groups attempt to collect and publicize data on homicides specifically related to Colombia's armed conflict in order to better assess violence related to DTOs. In addition, SIEDCO should continue to disseminate data so that researchers can continue to analyze crime trends over time.

## Conclusion

The implementation of the *peace accords efficiently decreased terrorist attacks* by FARC dissidents. However, while terrorist attacks by the ELN similarly decreased, they quickly surged following the expiration of the ceasefire between the group and the Colombian government. Cartel-related homicides have not been reduced throughout Colombia, and have substantially increased in areas that the FARC used to operate their criminal economies in. Violence is now being waged over hegemony of the FARC's former territories by several different DTOs. Additionally, the post-FARC landscape has allowed the ELN to transition from being the second biggest armed insurgent group in Colombia to the top ranked criminal group in Latin America, while the FARC dissidents have been rated as 5th and the Gulf Clan as 8th respectively (McDermott, 2020).

With the ELN's consolidation of power and ability to continue carrying out attacks, the Colombian government should consider reengaging its peace talks with the organization. More importantly, if a ceasefire is once again agreed upon between the group and the government, government officials should not let the ceasefire expire as the group may be poised to augment attacks once again. Similarly, as many armed groups and DTOs continue to operate throughout Colombia and attempt to consolidate power of the illicit economies left behind by the FARC, the Colombian government needs to approach the battle against these sophisticated organizations in a matter that will diminish the after-effects that result from the demobilization of these groups.

It is in the Colombian governments best interest to dismantle these organizations. However, authorities and security forces should be aware that a future peace deal with any of remaining armed insurgent groups, chiefly the ELN, could lead to an additional

breakdown of protection systems as seen with the demobilization of the FARC. Any peace deal with an armed insurgent group should focus on disarming the group entirely. In other words, disarm all fronts within the organization. Also, focus should be placed on the reintegration of mid and high-ranking combatants that are capable of establishing or continuing their own criminal networks. Lastly, areas that the armed group controls before demobilization should be contained by government security forces before the group is demobilized. This should limit the arrival of other armed groups into the demobilized area. Thus, reducing armed confrontations by armed groups to take over illicit economies that have been left behind by a demobilized network.

This study answered Morehouse's (2014) call to map the patterns of the Colombian conflict. More specifically, the study mapped terrorist incidents perpetrated by the FARC before and after the implementation of HVT strikes. This paper also mapped terrorist incidents perpetrated by the FARC/FARC dissidents and the ELN, and homicides throughout Colombia before and after the peace accord. This is the first study to compare the longitudinal and spatial effects that HVT strikes and a peace accord have on terrorist incidents and homicides. This study has presented valuable insights into the outcomes of a peace accord that authorities and security forces should contemplate when demobilizing an armed insurgent group while other armed groups remain active. Future research should examine the effects of peace accords on terrorism and homicides in other areas with multiple armed insurgent groups to observe if these findings are limited to the Colombian conflict or shared by other countries also dealing with multiple armed insurgent groups. Additionally, future studies on the topic should investigate any diffusion and/or displacement effects on violence or terrorist incidents as a result of the

signing of a peace accord. Research of this kind can assist in growing our comprehension of the outcomes related to peace making between states and armed insurgent groups.

# CHAPTER 5

## Communitarian Police Forces in Guerrero, Mexico

Following the examination of HVT strikes against armed insurgent group leaders and the subsequent analysis on the Colombian peace accord with the FARC, this chapter seeks to explore the effect that vigilantism has on cartel-related homicides. Unlike HVT strikes and peace treaties, vigilantism is not a government policy, instead, it is an approach by a group of people who are not employed by the government and undertake law enforcement practices without any legal authority. As of spring 2013, fourteen of Mexico's thirty-two states had 45 different vigilante groups operating in them (Felbab-Brown, 2015). Similarly, the most recent vigilante group to emerge has been a group named "El Machete" (The Machete). This indigenous vigilante group appeared in July 2021 in the state of Chiapas with the intention of defending their community against DTOs (Garcia, 2021). Similarly, in late 2020, avocado and blackberry farmers in Michoacán created their own armed group to defend themselves from kidnappings and extortions by organized crime groups (OCGs) (Mexico News Daily, 2021). More importantly, the most recent news of the emergence of "El Machete" and the armed group in Michoacán exemplifies the timeliness of this study, while underscoring the importance of evaluating the effect that vigilantism has on 1) reducing crime and 2) combatting TOCs.

The state of Guerrero; the focus of this chapter, has also seen the proliferation of so-called self-defense groups and communitarian-police forces, which serve as examples of vigilante groups. As of September 2015, Guerrero exhibited the presence of vigilante groups in 53 of its 81 municipalities (Sánchez Valdés, 2015). Since late 2012, Guerrero

began to experience the steady proliferation of vigilante groups (Kyle, 2015). Several vigilante organizations have materialized for similar reasons and share comparable objectives. For example, one community-police force known as the *Coordinadora Regional de Seguridad y Justicia-Policía Ciudadana y Popular* (CRSJ – PCP), emerged in the summer of 2012 to comeback DTO activity in the municipality of Huamuxtitlán. While another group, the *Unión de Pueblos y Organizaciones del Estado de Guerrero-Sistema de Seguridad y Justicia Ciudadana* (UPOEG – SSJC) began operations in January 2013 to prevent extortions and kidnappings (Damián, 2015).

With the growth of vigilantism in Guerrero in mind, this chapter will investigate how this approach affects cartel-related violence as an approach to deal TCOs, particularly, DTOs. Therefore, this chapter will analyze the effect that the emergence and presence of one of the vigilante groups that emerged in 2013 has on cartel-related homicides. Additionally, two comparison groups will be included in this study; one group will consist of municipalities without any vigilantes, and another group will consist of an area that had the presence of vigilante forces prior to the study period. Studying the effects of the emergence of vigilantes in a particular area of Guerrero and comparing it to two comparison groups will make several contributions to the literature. First, studies analyzing the effect that vigilantes have on crime in Mexico have been limited to Michoacán. Therefore, this will be the first study to analyze the effect of vigilantism on crime within Mexico that is not in Michoacán. Second, no previous studies have used a comparison group that includes another vigilante style organization that was established prior to the study period. Thus, the nalaysis that will be employed in this study will allow for comparisons to be drawn between one area that just began to experience the

vigilantism phenomenon, and another area that has a long-established presence of vigilante presence.

## Chapter Overview

This chapter specifically analyzes the effect that vigilantism has on cartel-related homicides. What follows is a discussion on the history and justifications of vigilantism. Followed by a section on the history of vigilantism in Guerrero. Then there is a section outlining Guerrero's criminal landscape related to the DTO's operating in the state. This is followed by an overview of vigilantism in Guerrero and a brief literature review of the effect that vigilantism in Mexico has on crime. The remaining sections include a theoretical discussion on non-state armed groups and violence, methods, variables, findings, a discussion on the findings, and conclusion.

## Vigilantism

Factors related to cartel-related violence in Mexico have been widely studied throughout different regions of Mexico. What remains unclear is the impact that vigilantism has on cartel-related violence and DTOs. This is because the two only studies to assess these factors within Mexico, Michoacán specifically, have found contradictory outcomes. The vigilante uprisings in Guerrero observed in the last decade present a new opportunity to examine cartel-related violence in areas of the state with and without vigilante groups present. While the contemporary vigilante uprisings in Guerrero were initiated in 2012, this is a particularly timely study for the region as some community

police forces in remote areas of Guerrero have begun to train and include children in community patrols (Verza, 2021).

Vigilantism has its origins in the medieval periods, with the frankpledge system being one of the initial concepts that motivates contemporary vigilante movements (Juliano, 2012). The frankpledge was an arrangement of policing and law enforcement in which members of the community were mutually liable for the conduct of their colleagues. A frankpledge group was responsible of guaranteeing that any lawbreaker within the group was taken to court or the community itself was fined (Tarlton, 2020). Eventually, this method was substituted with government officials that maintained order and carried out justice. Modern societies subscribe to John Locke's concept of the Social Contract in which the government's responsibility is to protect the natural rights of its citizens, therefore, no longer requiring citizens to seek protection from vigilantes. However, when the government's protection is nonexistent, vigilante movements develop in order to replace the government's role of guarding its citizens. In the case of Guerrero, this vigilante movement is seen in the form of self-defense forces and communitarian police.

In many cases, vigilante movements have been accompanied with negative drawbacks. Historical examples of vigilantism indicate that vigilante groups have limitations in administering justice. These limitations include emotionally chared accusations that lead to false convictions and unjust punishments. More importantly, these actions are often carried out without due process. For example, Harris (2001) found that vigilantes in South Africa operated in the public domain by applying the use and threat of aggression without any judicial proceedings. Similarly, while vigilante actions

are typically carried out against the wishes of official law enforcement agents, in some occasion's actions are executed with the incitement or participation of law enforcement officers (Jones, 2021). For example, in 1936, Thomas Finch, a black man who was accused of rape was lynched by five white men in Atlanta. One of the five men who participated in the extrajudicial killing was Samuel Roper, an Atlanta police officer who became the leader of Georgia's Ku Klux Klan chapter upon retirement (Rosenwald, 2020). Due to these limitations and violations of the lawful administration of justice, formal justice systems have discouraged vigilantism.

**Guerrero's Criminal Landscape: Historical Overview**

Organized drug trafficking from Guerrero emerged roughly 60 years ago with the state's drug markets originally being decentralized (Ernst, 2020). Drug production and trafficking are not new Guerrero as the cultivation of marijuana and poppy has been around for several decades (Ernst, 2020). The production of opium and processing of heroin became an important characteristic of the local economy in the 1960s as a reaction to growing demand for heroin from the U.S. (Padgett, 2015, Grandmaison, Morris & Smith, 2019). Similarly, as U.S. demand for poppy byproducts increased again in the 1990s, the produce became so extensive that it became one of the regional economy's essential pillars (Grandmaison et al., 2019).

The decentralized nature of Guerrero's drug trafficking came to an end when the Beltrán Leyva brothers organized the first formal DTO network in the mid-1990s (Kyle, 2015). The Beltrán Leyva brothers first worked as a branch of the Sinaloa DTO to advance the production of poppy in Guerrero's mountains, launch retail drug markets in

the state's cities, and develop security and laundering networks with the political and economic elites of the state (Seguridad, 2014). The Beltrán Leyva brothers also founded the first cocaine smuggling routes via the ports of Zihuatanejo and Acapulco (Kyle, 2015).

In the mid-2000s, Guerrero experienced its first wave of drug-related violence. The rise in violence is attributed to the emergence of "Los Zetas" into Guerrero. In 2005, Los Zetas appeared in Guerrero to compete against the Beltrán Leyva brothers for hegemony of the state's smuggling routes and heroin production (Kyle, 2015). Parts of Guerrero experienced a sharp increase in homicides as the Beltrán Leyva brothers and Los Zetas engaged in internecine violent competition. For example, the port city of Acapulco (Acapulco de Juárez) became one of the world's deadliest cities while the two organizations battled each other (Illades, 2014) (See Figure 5.1). While Los Zetas persisted in attacking the Beltrán Leyva brothers, they never succeeded to depose or genuinely threaten the Beltrán Leyva brother's hegemony in Guerrero (Kyle, 2015).

However, the Beltrán Leyva brothers had a dispute with their Sinaloa Cartel allies leading the Beltrán Leyva brothers to break away from the Sinaloa DTO. Disputes came from a disagreement over a distribution route in Chicago, along with the fact that the Sinaloa DTO's leader (El Chapo) provided information to the authorities that lead to the arrest of one of the Beltrán Leyva brothers (InSight Crime, 2017). As the Beltrán Leyva brothers became an independent DTO known as the Beltrán Leyva Organization (BLO), a war ensued with the Sinaloa DTO. Allies of the Sinaloa Cartel, a DTO known as La Familia Michoacána, arrived in central, western and northern Guerrero in an attempt to take control of the BLO's heroin production in these regions (Kyle, 2015). Meanwhile,

the BLO aligned themselves with their former archrivals, Los Zetas (InSight Crime, 2017).

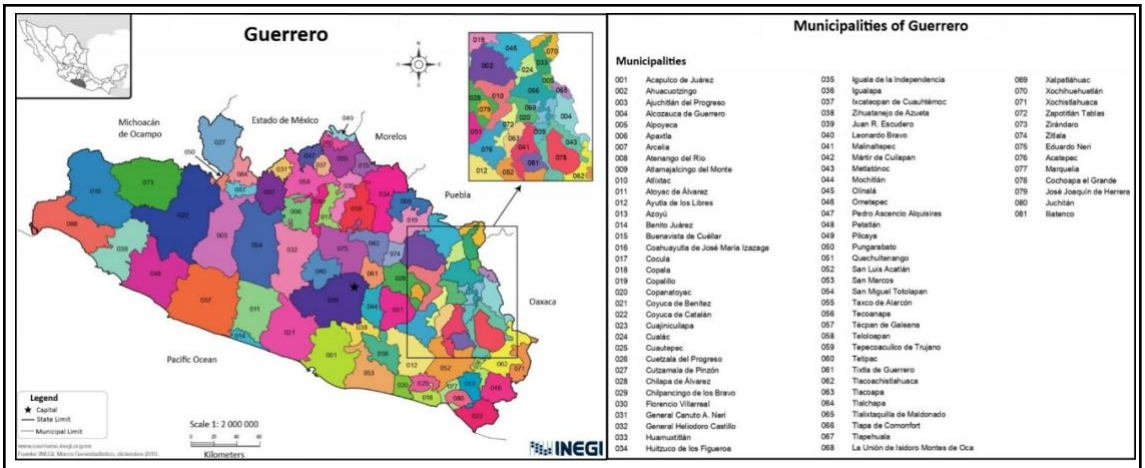


**Figure 5.1:** Municipalities of Guerrero. *Source:* INEGI

As the feud between the Sinaloa Cartel and the BLO ensued, the Sinaloa DTO used its contacts in the federal government to put pressure on the BLO. Many of the BLO's key members were arrested in killed in 2009 (InSight Crime, 2017). The most significant strike against the BLO took place December 16, 2009, when Mexican security forces carried out a successful HVT strike that killed BLO leader, Arturo Beltrán Leyva (Dudley & Young, 2011). The arrest of Arturo Beltrán Leyva saw the BLO fragment into two separate factions. One faction was led by Arturo's brother, Hector, who renamed his group the South Pacific Cartel (InSight Crime, 2017), while the other faction was led by Edgar Valdés Villarreal who aided Arturo in running the BLO's day to day operations before he was killed (Kyle, 2015). During the feud between the two former BLO factions, the Sinaloa DTO and its allies, mainly La Familia Michoacána continued to gain ground in Guerrero (Kyle, 2015). As the Sinaloa allied groups gained territory throughout the

state, Edgar Valdés Villarreal was arrested on August 30, 2010, and Hector Beltrán Leyva aligned his group with Los Zetas (InSight Crime, 2017).

Following the Sinaloa DTO's dominance in Guerrero via the Beltran Leyva brothers, and the subsequent hegemony of the Beltran Leyva brothers when they broke apart from the Sinaloa Cartel is a landscape made up of plentiful smaller autonomous criminal networks. A 2015 report by Sánchez Valdés points out, that at the time, Guerrero was the Mexican state with the most amount of criminal organizations operating in its territory. The report identified as many as 10 independent criminal networks present in 65 of the 81 municipalities in the state. Sánchez Valdés (2015) highlighted that these criminal networks were engaged in violent competition for hegemony over Guerrero's illicit drug markets. The following paragraphs will identify and briefly describe the ten criminal networks that were operating in Guerrero at the time of Sánchez Valdés' (2015) report.

The first DTO is Los Rojos (The Reds). The group operates in Guerrero's central, north, and mountain regions. The organization cultivates and commercializes poppy and marijuana, and is also engaged in extortion, kidnappings, drug trafficking, and street-level drug sales. Los Rojos is one of the DTOs that emerged following the fragmentation of the BLO. The second DTO, La Familia Michoacána (LFM) was a DTO heavily involved in the poppy and marijuana trade in Guerrero. However, the group has been weakened and now operates with several local groups that engage in kidnappings and extortion. The third DTO, Los Guerreros Unidos is another organization that appeared after the split of the BLO and includes many ex-LFM members in its ranks. The group operates in the state's central, north, and "tierra caliente" region bordering Michoacán.

The network is involved in poppy and marijuana cultivation, the sale of opium-paste and heroin, kidnapping, extortion, and street-level drug sales. The fourth DTO is the Los Caballeros Templarios (Knights Templar) which was involved in marijuana and poppy cultivation, drug trafficking, the production of synthetic drugs, extortion, kidnapping, and street-level drug sales. At the time of the report, the Knights Templar was competing with the Cártel Jalisco Nueva Generación (CJNG) and Los Granados for control over its territory. The groups territory included the northern coast of the state and tierra caliente.

Additionally, the CJNG, which was discussed in chapter 3, has made its way into Guerrero. At the time of the report, the CJNG was present in 10 of Guerrero's municipalities and was attempting to take over the Knights Templar's poppy and marijuana cultivating areas. Group number six, the Cártel Independiente de Acapulco (CIDA) is involved in street-level drug sales, prostitution, and the extortion of businesses throughout the Acapulco metropolitan area. This is another group that emerged following the BLO's fragmentation. The seventh group is La Barredora, which is involved street-level drug sales, nightclub management, prostitution, extortion and kidnapping. Like other groups, this network was once part of the BLO and subsequently joined the CIDA. However, La Barredora broke away from the CIDA and allied itself with the Sinaloa DTO while it competed with the CIDA for hegemony of Acapulco's metro area.

The eighth group to be discussed is Los Ardillos which is present in Guerrero's central and mountain regions. The group is engaged in kidnapping, extortion, and the cultivation of marijuana and poppy. Los Ardillos formerly manufactured and trafficked drugs with the BLO until they broke apart in 2009. The ninth group is Los Granados which operate in the state's northern coast. The network is involved in the cultivation of

poppy and marijuana. Los Granados became allies with the CJNG in 2014 to combat the Knights Templar operating in Guerrero's northern coast. Like many of the other groups mentioned, Los Granados emerged from the BLOs fragmentation as the group broke away from the BLO following the killing of Arturo Beltrán Leyva. Lastly, is the Sinaloa DTO, which was a major focus of chapter 3. The Sinaloa Cartel was present in Guerrero for some time through its alliance with the Beltrán Leyva brothers, although its presence was significantly diminished with the Beltrán Leyva brothers broke away from the Sinaloa DTO. At the time of the report, the Sinaloa DTO was present in two of the northern coast municipalities where the organization was engaged in the cultivation of poppy and marijuana.

The aforementioned paragraphs indicate that numerous groups in Guerrero originated from the fragmentation of larger DTOs. More specifically, the makeup of Guerrero's DTO landscape in 2015 seems to be the aftermath of several important factors: first, the disagreements and feud between the Beltran Leyva brothers and the Sinaloa DTO's management; second, the killing of Arturo Beltrán Leyva which was followed by a fragmentation of the BLO into several other groups, and third, the appearance of major DTOs into the state. Specifically, the CJNG's arrival and the continuation of the Sinaloa DTO's continued presence and alliance with smaller groups.

Ernst (2020) indicates that the kingpin strike against Arturo Beltrán Leyva prompted backlash as the strike deprived Guerrero's criminal landscape of its dominant figure, which lead to further independence for the local networks that made up his organization and to divisions that fueled violent conflict. Correspondingly, Kyle (2015) points out that by January 2011, the DTO landscape in Guerrero was made up of small

and ferociously competitive groups. The increased number of criminal networks has given rise to intense territorial fragmentation as group fights to defend and increase its own small area of territory (Ernst, 2020). Similarly, competition increased amongst groups as connections between organizations in the production of drugs and trafficking chain were interrupted, leading many of the small and medium sized criminal networks to switch from the drug trade to predatory crimes (Felbab-Brown, 2019). The shift of smaller groups to focus on crimes such as extortion has seen these smaller groups fight for territory to extort. This can be seen in the conflict between the CIDA and La Barredora over control of Acapulco's metropolitan area.

Predatory crimes are said to be a bigger problem in the rural regions of Guerrero, such as the tierra caliente region. Ernst (2020) indicates that crimes that occur in rural areas are generally left outside of the public's view, because criminal groups coerce media outlets into self-suppression with the threat or use of violence. For example, in areas of tierra caliente, criminal groups allegedly extort local business owners between $250 and $2,500 per month, leading many of the businesses to seize operations in the region (Salvatierra, 2018). With the predacious nature of these crimes against the people of Guerrero, a new element to the insecurity dilemma emerged in early 2013. This new component was the introduction of "self-defense forces" in both Guerrero and the neighboring state of Michoacán (Halcli, 2015).

The self-defense forces (vigilantes) directly confronted criminal networks that preyed on citizens and businesses and provided new security to their communities. Before engaging in further discussion on the vigilante phenomenon in Guerrero, it is important to note that the prior identification of the independent criminal groups outlined

by Sánchez Valdés in his 2015 report is of grave importance to this study. This is because the analysis that will be conducted in this study will be informed from this report. The methods section will discuss how this report will inform the analysis. The following section provides a historical overview of the vigilantism in Guerrero, a background on the many vigilante groups within the state, and a technical classification of these groups.

**Vigilantism in Guerrero: Historical Overview**

The proliferation of self-defense forces in Mexico is closely associated to the development of community police forces in indigenous communities (Grillo, 2014). Many of these indigenous communities have practiced community policing for centuries (Crisis Group, 2013). Guerrero has exhibited the recent proliferation of many self-defense groups; however, this section will focus on the two dominant groups in the state, the CRAC-PC and UPOEG-SSJC (See Figure 5.2). In 1995, indigenous communities in Costa Chica and La Montaña created the *Coordinadora Regional de Autoridades Comunitarias y Policía Comunitaria* (CRAC-PC) in response to widespread highway robbery, cattle raiding, and increasing homicides and sexual assaults (Kyle, 2015; Ley, Mattiace & Trejo, 2019). The CRAC-PC protects and patrols its communities with hunting rifles and shotguns (Grillo, 2014).

The organization was established on indigenous grounds and created a parallel legal system that derived its legitimacy from the international indigenous rights movement and similar legal reforms in Guerrero (Kyle, 2015). This parallel legal system includes a policing system that operates beside the municipal police (Ley et al., 2019). Ley and colleagues (2019) also point out that the CRAC initially turned over criminals to

public prosecutors employed by the official justice system. However, the CRAC eventually realized that public prosecutors were conspiring with criminal networks, causing the group to develop its own effective judicial system as well. A 2011 law referred to as "Ley 701" passed by the Guerrero state government legalized the CRAC-PC's policing and judicial institutions and protected the customs of the indigenous population (Kyle, 2015; Halcli, 2015). With the passing of Ley 701, the CRAC-PC came to be legally recognized by Guerrero's government and the organization receives financing from the state government (Sánchez Valdés, 2015).

Another self-defense group emerged in Guerrero in early 2013. The Unión de Pueblos y Organizaciones del Estado de Guerrero (UPOEG) is an organization that was originally involved in grassroots activism, mostly known for its protests to reduce the cost of electricity (Crisis Group, 2013). However, when one of the members of this community organization was kidnapped by a local criminal syndicate, the citizens of Ayutla de los Libres and Tecoanapa took matters into their own hands by taking up arms. These citizens set up checkpoints at the entry points of their towns and began conducting organized patrols of their communities (Loyola & Woldenberg, 2013). During these events, the UPOEG transitioned from an organization advocating for better infrastructure into a network of armed vigilantes functioning without authorization from the state or national government.

Following the aforementioned events, the UPOEG decided to utilize its original administrative structure to create a police group, the Sistema de Seguridad y Justicia Ciudadana (UPOEG-SSJC) (Kyle, 2015). THE UPOEG-SSJC group operating in the town of El Paraiso suggested that their group join the CRAC-PC, but the CRAC-PC

voted against the merge (Ocampo Artista, 2013). Therefore, this lead the UPOEG-SSJC to become an independent policing network that is not aligned with the CRAC-PC. Similarly, unlike the CRAC-PC, the UPOEG – SSJC did not justify its proliferation under Ley 701 or any other law for that matter (Kyle, 2015). Kyle (2015) similarly indicates that the UPOEG-SSJG's objective was to put an end to the extortions, kidnappings and retail drug sales perpetrated by DTO's in the Costa Chica and El Centro regions of Guerrero.

Since the inception of the UPOEG-SSJC, the group has directly confronted individuals they suspect to be engaged in DTO activities. For example, Kyle (2015) indicates that the group has raided safe-houses and detained individuals with links to DTOs, including members of government. These operations have led leaders of the organization to be charged with kidnapping (Chávez, 2014). More importantly, when comparing the CRAC-CP and the UPOEG-SSJC, Kyle (2015) indicates that the CRAC-PC has more success in avoiding confrontations with government forces because DTOs have never been as engrained in their territory, therefore their operations are more limited and require less detentions. It is also worth noting that the CRAC – PC has more policing experience, an operating judicial system, and is more competent in dealing with state officials (Kyle, 2015).

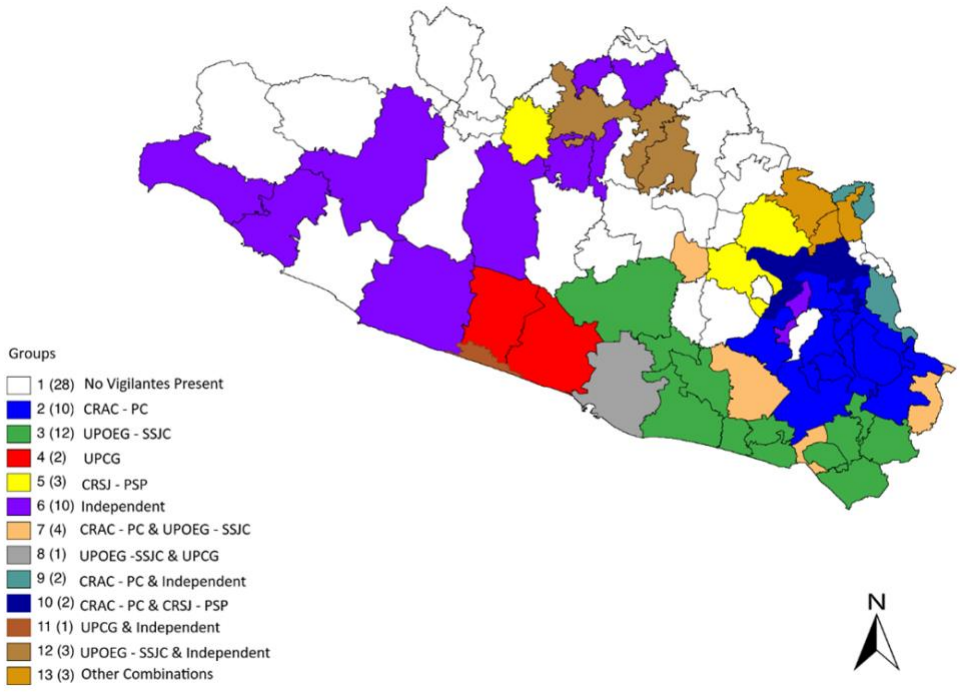


**Figure 5.2:** Presence of self-defense groups and communitarian police in the municipalities of Guerrero. *Source:* Sánchez Valdés (2015)

By September 2015, Sánchez Valdés (2015) pointed out that like the CRAC-PC, the UPOEG – SSJC was also recognized by Guerrero's legislation and received funding from the state government. Therefore, the CRAC-PC and the UPOEG-SSJC were the only two self-defense forces that were recognized by the government of Guerrero and had permission to operate and the time of Sánchez Valdés' (2015) report. In the same report, a second category of self-defense forces were categorized. These were groups that were not legally recognized, but that were negotiating their enclosure in the communitarian police model with the state of Guerrero. This includes fewer known groups, such as the

Union of Towns in Costa Grande (UPCG) and the Coordinadora Regional de Seguridad y Justicia-Policía Ciudadana y Popular (CRSJ-PCP) (Sánchez Valdés, 2015).

This same report identified a third group of self-defense groups that had emerged a short time before the report was written. This category includes self-defense forces that were not legally recognized by Guerrero's government and were operating illegally. The focus of this study will be on the two self-defense groups that were legally operating with recognition from Guerrero's government at the time of Sánchez Valdés' (2015) report. Therefore, this study seeks to analyze the effect that these two groups have on cartel-related violence in the municipalities they operate in.

The fact that the UPOEG-SSJC has been operating since early 2013 presents us with the perfect opportunity to analyze the specific effect that the group's emergence had on homicides in municipalities it operates in. Similarly, since the CRAC-PC has been operating since 1995, a simultaneous analysis can be conducted to analyze homicides in municipalities with the CRAC-PC as a comparison. Likewise, homicides in municipalities without any self-defense forces will also be compared to both areas with self-defense forces. Thus, with the emergence and tactics of the UPOEG-SSJC in mind, this study has the following research questions:

***Research Question [Q13]: Did the emergence of the UPOEG-SSJC defense forces have a significant effect on violence in the regions they operate in within Guerrero?***

***Research Question [Q14]: Did the emergence of the UPOEG-SSJC defense forces change the geography of cartel-related homicides within Guerrero?***

**Vigilante Literature within Mexico**

Chapter 2 reviewed the vigilante literature throughout different regions of the world. More importantly, chapter 2 discussed the factors related to the development of vigilante groups, considerations for support of vigilantes, and the effect that vigilantes have on crime rates in different corners of the globe. This current section will focus specifically on the studies related to the effect that vigilantes in Mexico have had on violence. It is important to first point out that studies analyzing vigilantism and crime in Mexico are scarce as only two studies have evaluated this phenomenon in the past. These two studies are of grace significance as their findings have contradictory results.

The first study assessed the effect that vigilante mobilization had on local levels of crime within Michoacán (Guerrero's western neighboring state). In this study, Osorio et al. (2016) found that the emergence of "autodefensas" (self-defense forces) reduced several crimes including cattle rustling, property crime, land dispossessions, larceny incidents, robberies, extortions, kidnappings, murders, and fraud. The authors of this study analyzed the effect that the presence of vigilantes in 2013 had on crime the subsequent year, 2014. However, the subsequent study conducted by Del Rio (2020) analyzed data in Michoacán between 2011 and 2017 and was therefore able to analyze the long terms effects of the autodefensas' emergence in 2013. Del Rio (2020) found that when the autodefensas emerged, homicides increased, while kidnappings and extortions decreased in areas they occupied. Though, after vigilantes were removed by the government, homicides and kidnappings increased, while extortions decreased. Del Rio's (2020) study also found that the government removal of vigilantes in Michoacán was followed by a power vacuum, allowing violence to increase.

Both aforementioned studies provided insight into the short-term and long-term effects that vigilantes have on crime. However, both studies have shortcomings that will be addressed in the present study. First, the study by Osorio and colleagues did not evaluate the long-term effects of vigilantism, which is likely the reason why the results differ from those found by the Del Rio study. Additionally, the Osorio study does not include a comparison group where vigilantes did not emerge. Likewise, the Del Rio study mapped out the presence of vigilantes within Michoacán and compared crime levels in municipalities with vigilantes to a comparison group without vigilantes. However, while Del Rio mapped out vigilante presence, his study did not employ and spatial analysis techniques to determine which specific municipalities were hot or cold spots for crime during the study period.

In sum, the literature on the effect of vigilantism on crime within Mexico has garnered mixed results, with come cases indicating that the presence of vigilantes has escalated violence. Theoretically, since vigilantes are non-state armed actors, homicides may increase when they emerge into a territory occupied by another non-state armed actor, such as a DTO. The following section will discuss how the proliferation of vigilantes and the tactics they employ, may lead to an increase in violence.

**Emerging Non-State Actors and Violence**

Numerous studies assert that criminal networks aspire to increase military efforts to amplify profits as the number of competitive groups develop (Blumstein, 1995; Brownstein, Crimmins & Spunt, 2000; Castillo et al., 2014), thus fostering the prospect of violent competition among groups. Criminal groups weigh in on the expected benefits of escalating violence and the efforts needed to bankroll these changes when determining

the range of violence, they want to employ (Castillo et al., 2014). Castillo and colleagues (2014) similarly indicate that criminal networks could reapportion the market tranquilly when a new criminal network emerges, but compelling motivations exist to use violence to increase revenue, or not have it affected negatively in a market with faintly delineated hegemony. As a result, criminal groups are expected to use violent tactics against emerging groups as competition increases over the same market (Reuter, 2009; Gutierrez, 2011; Durán-Martínez, 2015).

Aside from the rational choice perspective, there is also a sociological viewpoint as to why criminal networks engage in violent competition when there is a new entrant. Papachristos (2009) indicates that the conduct of criminal groups is managed by norms of retribution against challengers in order to restore respect or improve a status as the leading organization. When organizations begin combatting each other because of fragmentation or the appearance of a new motivated competitor, the groups will continue attacking one another in the periods that follow (Papachristos, 2009).

Both the rational choice and sociological viewpoints linking new entrants into the criminal market with an increase in violent competition make this assumption in regard to criminal groups. However, this study will endeavor in applying these perspectives to the emergence of self-defense forces in Guerrero. This is because, like criminal groups, self-defense forces are also non-state armed groups. And while the objectives of the self-defense forces are not to take over a criminal market, the rational choice perspective should indicate that the criminal networks the self-defense forces are attempting to expel from their communities will retaliate, thus, escalating violence between self-defense groups and criminal groups such as DTOs. Specifically, self-defense groups such as the

UPOEG-SSJC may employ violent tactics while carrying out operations to raid safe-houses and detain individuals. As a result, DTOs will similarly retaliate against self-defense groups in order to continue their operations the criminal market.

Similarly, for the same reasons a criminal network would retaliate against another criminal group that has entered their territory, criminal groups will also strike back against self-defense forces that have emerged to directly challenge the criminal groups. This is in direct conjunction with Papachristos (2009) sociological assertions. Therefore, as self-defense forces directly confront a criminal group, the group will attack the self-defense forces in order to reestablish dominance against another violent non-state actor. While DTOs may not view self-defense groups as direct competitors in the criminal market, they will perceive the self-defense forces to be an obstacle in their hegemony over an area they generate profits from.

Consequently, the purpose of this study is to evaluate if the emergence of self-defense forces reduced cartel-related crime. More specifically, the study evaluates if the emergence of the UPOEG-SSJC in an area where criminal groups operate had an effect on violence. Lastly, taking into consideration the link between the presence of multiple armed actors and violence that was discussed in this section, I hypothesize that the proliferation of the UPOEG-SSJC is positively associated with the number of cartel-related homicides in the area the self-defense force operates in.

## Methods

### *Data*

Like chapter 3, this study analyzes data drawn from the Instituto Nacional de Estadistica y Geografia (INEGI). It's important to remember that INEGI's data on reported crimes is available monthly at the municipal and state level for the period under study, 1st January 2011 – 31st December 2017. And that Mexico is a federal republic, therefor municipalities are similar to counties in the United States. This study analyzes whether vigilantism has an impact on cartel-related homicides by observing crime within the area that vigilantes (self-defense forces) were present. The variable of interest that was analyzed is intentional homicides with a firearm (will be referred to as 'homicides' for remainder of study). Intentional homicides with a firearm serve as the best proxy to measure cartel-related homicides for the same reasons previously mentioned in chapter 3.

Municipal crime data from Guerrero was aggregated from INEGI into three groups; municipalities without any self-defense groups (n = 28), will serve as comparison group 1and will be referred to as group 1; municipalities with the CRAC-PC communitarian police (n= 10), will serve as comparison group 2 and will be referred to as group 2; and municipalities with the UPOEG-SSJC self-defense forces (n=12), will serve as the experimental group and will be referred to as group 3. These groups were informed by the Sánchez Valdés (2015) report. The region with the CRAC-PC communitarian police was selected as comparison group 2 since the CRAC-PC emerged over 25 years ago (Espino & Ortiz, 2019), thus establishing itself long before the emergence and intervention of the UPOEG-SSJC took place. Therefore, this region will serve as an appropriate comparison region in order to contrast levels of violence between a region in

which a vigilante self-defense force recently emerged and a region in which a vigilante style communitarian organization has had an established presence. Comparison group 1 was selected to compare violence between a region without the presence of vigilantes in the time period of the analysis to a region with the recent emergence of vigilantes (experimental group) and a region where vigilantes have had a long and verified presence (comparison group 2). GeoDa software was used to depict municipalities that exhibited UPOEG-SSJC presence versus municipalities with CRAC-PC presence, and municipalities that did not exhibit any form of vigilantism (Figure 5.3). Analyzing data on two comparison groups, as opposed to the area of interest only, permits for generalizable deductions on the settings that may increase or reduce homicides.

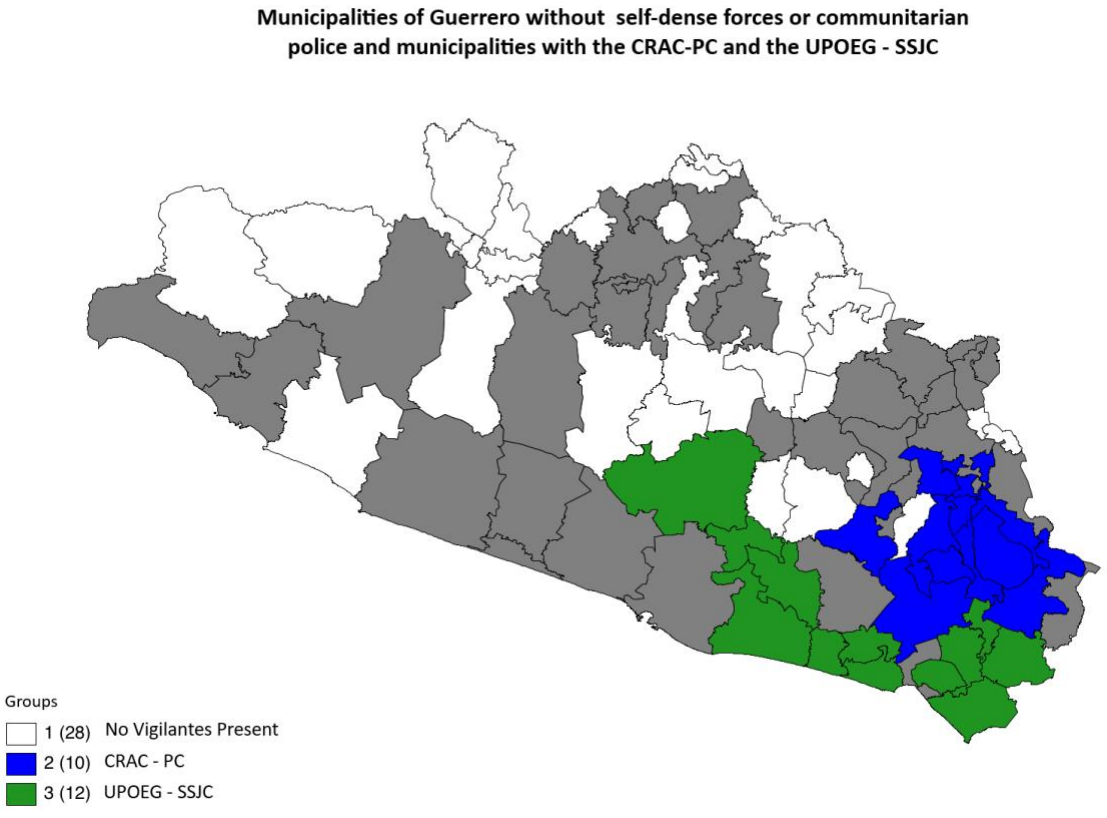


**Figure 5.3:** Presence of the CRAC- PC and the UPOEG-SSJC in the municipalities of Guerrero. *Source:* Sánchez Valdés (2015)

It is important to note that the state of Guerrero has other vigilante groups in addition to the UPOEG-SSJC and CRAC-PC. More importantly, several municipalities have a combination of vigilante groups present while some have the presence of independent vigilante groups (Figure 5.2). These independent groups are factions that have no relationship with other groups and do not work with other groups. Therefore, municipalities with the independent groups are not analyzed as there is not sufficient data on these groups in the literature to link ta specific faction to cartel-related violence. Similarly, the other established vigilante groups are not as well-known as the UPOEG-SSJC and CRAC-PC, therefore there is also no specifics detailing when the groups emerged, thus municipalities with the less notable vigilante networks are not analyzed. Lastly, the four municipalities depicted in figure 3 with the presence of both the UPOEG-SSJC or CRAC-PC are not analyzed as there is not data indicating which of the two vigilante groups may be associated with an increase/decrease in homicides.

***Analysis***

Being that the intervention that will be analyzed took place on January of 2013, and that the INEGI data is only available from January 2011 – December 2017, this hinders the ability to conduct the type of time series analysis conducted in chapters 3 and 4 that assessed intervention effects on homicide and terrorist incidents. Like the previous studies, an interrupted Autoregressive Integrated Moving Average (ARIMA) model to assess the time series would have been ideal, nevertheless, with the limited data available there is not enough pre-intervention periods to conduct an ARIMA analysis therefor trend and seasonality cannot be correctly modeled, potentially leading to unsound results. However, the analyses maintained a robust statistical test to associate causal

relationships. A paired sample t-test was generated to analyze pre-intervention cartel – related homicides trends in the INEGI data and identify intervention treatment effects. Paired sample t-tests were employed to examine differences between municipalities with the UPOEG-SSJC, and the two comparison groups (municipalities with CRAC-PC presence, and municipalities without vigilante presence). There are two periods of interest, (1) pre-intervention (January 2011 – December 2012), and (2) intervention (January 2013 – December 2017). Therefore, homicides will be compared in the three groups for the pre-intervention and the intervention period.

### *Data for Spatial and Temporal Analysis of Homicides in Guerrero*

The INEGI homicide data in Mexico, January 2011 – December 2017 used in the time series analysis on the effect of the emergence of vigilantes on cartel-related homicides was also employed for the spatial and temporal analysis of homicides in Guerrero. The INEGI dataset includes information about the month of the incident, the state/province, city/municipality, type of weapon used, and deceased victim count. Using ESRI's ArcMap 10.8 software, the Guerrero homicide dataset was joined with a Guerrero municipality location dataset provided by GeoNames. Spatial analysis techniques were employed with GeoDa 1.18 software to the homicide incident dataset to identify clusters of homicide incidents and to visualize the development and evolution of these clusters over the seven-year study period. First, choropleth maps of the number of homicide incidents were created using natural breaks for the seven-year study. Natural breaks maps employ a clustering that generate groups with the largest internal similarity (Anselin, 2020). One map was created for the pre-test period (January 2011 – December 2012), and

one for post-test period (January 2013 – December 2017), while one map was created indicating the percentage change in homicides throughout the municipalities of Guerrero between the pre/post-test analyses. The same exact process was completed for the homicide rate in Guerrero. Then, the local indicator of spatial association (LISA) and Getis-Ord Hot Spot Analyses were conducted on the data.

***Spatial and Temporal Analysis***

The LISA analysis employing the Local Moran's I tool identified areas with clusters and spatial outliers in the dataset. This instrument allows for the categorization of significant locations as High-High and Low-Low spatial clusters, and High-Low and Low-High spatial outliers (Anselin, 2020). Additionally, Hot-spot analyses utilizing the Getis-Ord $Gi^*$ identified cities with high or low concentrations of homicide incidents in Guerrero. The $Gi^*$ statistic recognizes either clustering of above average values (hot spots) or below average values (cold spots). Individual municipalities in Guerrero were used as spatial units in this analysis, and data values were aggregated for each municipality (the number of incidents in the municipality). The *queen* criterion of contiguity was employed for both spatial analyses as this spatial weight is recommended for polygons with irregular shapes (Anselin, 2020a), as is the case for the shapes of municipalities in Guerrero. The queen criterion is more encompassing than other spatial weights and delineates neighbors as spatial units with a common edge or a common vertex (Anselin, 2020a). Detection of homicide hot spots was necessary to identify any patterns of homicides that emerged in areas where they were previously not present after the emergence of the UPOEG-SSJC vigilantes. Similarly, Derleth (2017) indicates that

the area with CRAC-PC presence was a cold spot for homicides in his analysis, therefore this study will assess if the area continues to be a cold spot. Maps employing the Local Moran's I and the hot-spot analyses were generated for the pre-test period and both post-test periods.

**Descriptive Analysis**

The evaluation begins with a descriptive analysis of the time series data by constructing a figure that depicts the frequency of homicides over the 84-month period (see Figure 5.4). The vertical solid line represents the first known presence of the UPOEG-SSJC vigilantes in January 2013. A visual examination of Figure 5.4 shows that the trends in homicides did not remain stable over time. A comparison of the period before and after the UPOEG-SSJC's emergence, reveals that the experimental group, municipalities with the UPOEG-SSJC (group 3) initially saw homicides increase, then decrease to the minimum recorded homicide count for the group, and lastly increase to the maximum recorded homicide count for the group.

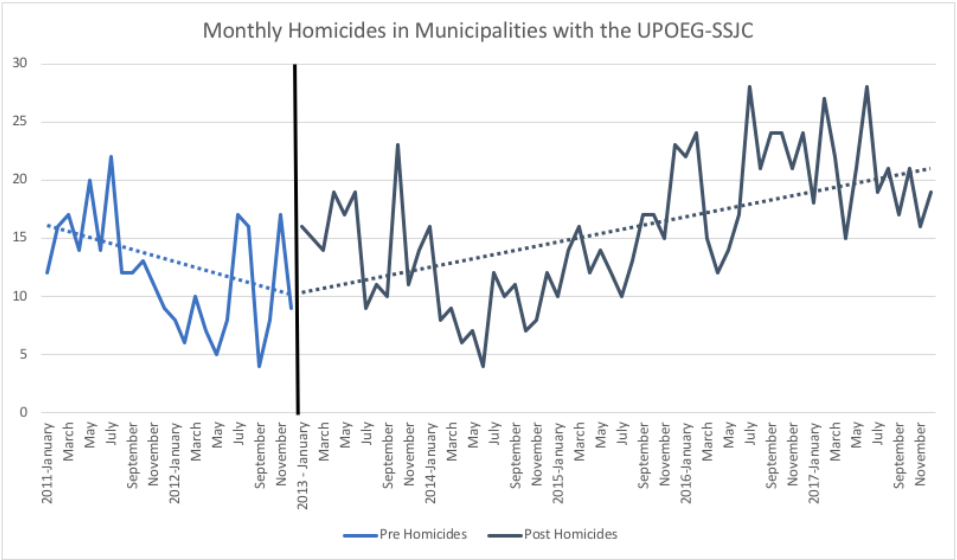


**Figure 5.4:** Monthly Homicides in municipalities with the UPOEG-SSJC (*n*=12). *Note:* Dotted lines represent the trends in the pre and post periods.

The overall mean of homicide incidents for group 3 before the emergence of the UPOEG-SSJC was 12 homicides per month. While the average number of incidents increased to 16 homicides per month following the group's proliferation. Further empirical corroboration is necessary before accepting these findings as statistically significant because Figure 5.4 only depicts homicide incidents in municipalities with the presence of the UPOEG-SSJC and excludes areas without vigilantes and the CRAC-PC. However, Figure 5.5 depicts the frequency of homicides over the 84-month period for municipalities without vigilantes (comparison group 1) and municipalities with the CRAC-PC (comparison group 2). Therefore, to investigate this matter, a more sophisticated intervention analysis is undertaken with two comparison groups for contrast that is discussed below.

**Results**

Monthly averages, t-test scores, and incident change for homicides, in municipalities without vigilantes, municipalities with the CRAC-PC, and municipalities with the UPOEG-SSJC for the two time periods are displayed in Table 5.1. Municipalities with the UPOEG-SSJC (experimental group), experienced a significant increase in the monthly average of homicides of 3.89 incidents when comparing the periods of time before and after UPOEG-SSJC presence began (pre/post) ($t = - 3.170$, $p > .01$). Municipalities without vigilantes (comparison group 1), experienced a significant increase in the monthly average number of homicides by 7.71 incidents when comparing the periods of time before and after UPOEG-SSJC presence began (pre/post) ($t = - 6.749$, $p > .001$). Lastly, municipalities with the CRAC-PC (comparison group 2), experienced a significant increase in the monthly average number of homicides by .92 incidents when

comparing the periods of time before and after UPOEG-SSJC presence began (pre/post) (t = - 2.761, p > .05). This result indicates that the answer to research question *[Q13]* is yes — the emergence of the UPOEG-SSJC defense forces increased homicide incidents in the areas they operate in. Supplementary Table 5.1 presents the results of the t-test for homicides per capita. All significant t-test results were identical for Table 5.1 and Supplementary Table 5.1.

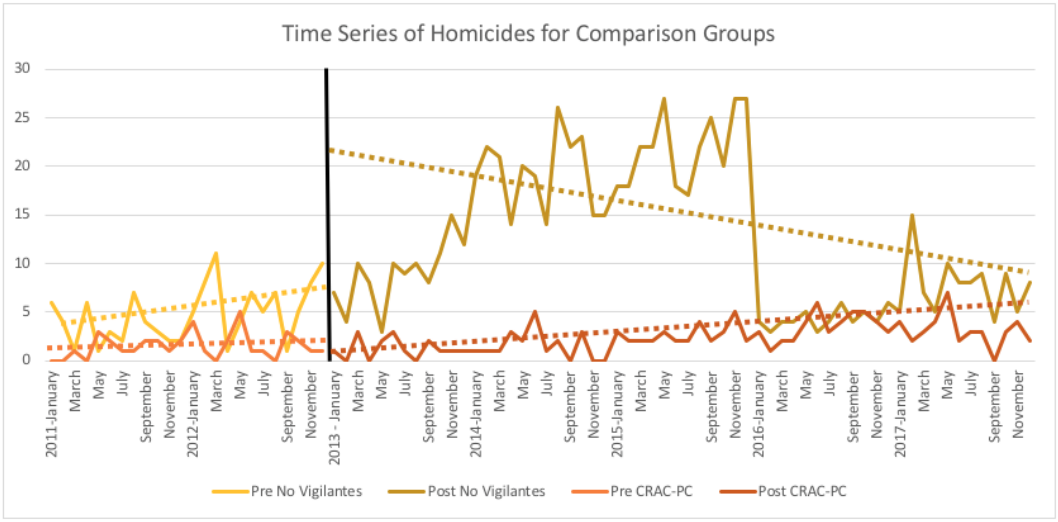


**Figure 5.5:** Monthly Homicides in municipalities without vigilantes (*n*=28), municipalities with the CRAC-PC (*n*=10). *Note:* Dotted lines represent the trends in the pre and post periods.

**Table 5.1.** Results of T-test analysis and mean number of homicides and homicide rate in three groups reported by INEGI.

| | Pre | Post | *t*-test | Incidental Change |
|---|---|---|---|---|
| **Homicides N** | | | | |
| N of Months | 24 | 60 | | |
| No Vigilantes | 4.71 | 12.42 | - 6.749*** | + 7.71 |
| CRAC | 1.50 | 2.42 | - 2.761* | + .92 |
| UPOEG | 11.96 | 15.85 | - 3.170** | + 3.89 |

Note: UPOEG established, Pre = January 2011 – January 2014, Post = February 2014 – December 2017.
*$p < .05$; **$p < .01$, ***$p < .001$ (Two-tailed test).

**Summary of Spatial Homicide Clusters**

The results of the raw number count of homicides in Guerrero for the pre-intervention and post-intervention periods, in addition to the percent change of homicides by municipality are displayed in Figure 5.6. The 15 municipalities with the highest incidental increase in homicides are displayed in Table 5.2 while the 15 municipalities with the highest incidental decrease are displayed in Table 5.3. Eighteen municipalities were categorized in the second tier of the natural breaks as exhibiting an increase in homicides between 203% and 699%. Of these municipalities, seven belong to group 1(municipalities without vigilante presence), four belong to group 2 (municipalities with the CRAC-PC), three belong to group 3 (municipalities with the UPOEG-SSJC). The remaining four municipalities were not part of the experimental or comparison groups. However, two are municipalities with an unknown combination of vigilante groups, one is a municipality with the presence of the CRAC-PC and the CRSJ-PSP, and one is a municipality with both the CRAC-PC and UPOEG-SSJC present.

Regarding the six municipalities that fell within the third tier of the natural breaks and exhibited an increase in homicides between 700% and 1799%, four municipalities belong to group 1, one municipality belongs to group 3, and one is a municipality with the presence of the UPOEG-SSJC and an independent vigilante group (this municipality was not part of three analyzed groups). In terms of the two municipalities that fell in the fourth tier with an increase between 1800% and 6666%, one municipality was part of group 1, while the other is a municipality with an unknown combination of vigilante groups. Lastly, the sole municipality in the top tier with the highest increase in homicides (6667%) belongs to group 1 (see Table 5.2 & Figure 5.6).

Regarding the fifteen municipalities with the highest incidental increase in homicide incidents (see Table 5.2), six municipalities belong to group 1, one belongs to group 2, and four belong to group 3. The remaining four municipalities were not part of the experimental or comparison groups. However, one municipality had the presence of an independent vigilante group, another had the presence of the CRSJ-PSP, while another had the combined presence of the CRAC-PC and the UPOEG-SSJC, and lastly one other municipality had an unknown combination of groups.

*Proceed to next page for Figure 5.6.*

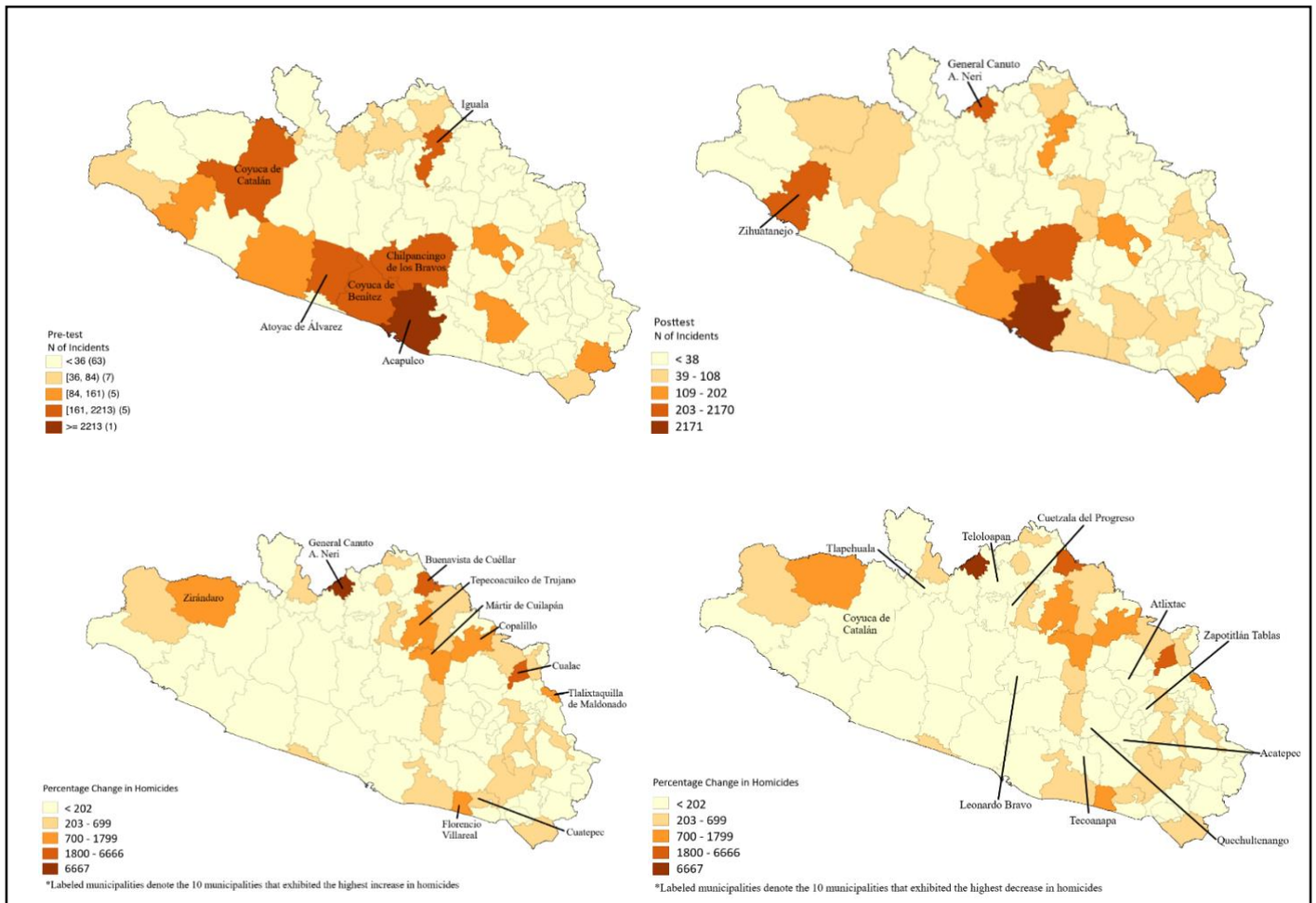


**Figure 5.6:** N and percent change in homicide incidents before and after the emergence of the UPOEG-SSJC (N=84 months, January 2011 – December 2017).

**Table 5.2.** The 10 municipalities that exhibited the highest increase in the number of homicides after the emergence of the UPOEG-SSJC.

| Group | Municipality | N of Homicides before UPOEG-SSJC Emerged | N of Homicides after UPOEG-SSJC Emerged | Incidental Increase |
|---|---|---|---|---|
| 1 | GENERAL CANUTO A. NERI | 3 | 203 | + 200 |
| 3 | CHILPANCINGO DE LOS BRAVO | 219 | 314 | + 95 |
| 6 | ZIHUATANEJO DE AZUETA | 145 | 228 | + 83 |
| 3 | FLORENCIO VILLARREAL | 8 | 87 | + 79 |
| 5 | CHILAPA DE ALVAREZ | 84 | 157 | + 73 |
| 3 | CUAJINICUILAPA | 36 | 109 | + 73 |
| 3 | SAN MARCOS | 23 | 81 | + 58 |
| 1 | TLALIXTAQUILLA DE MALDONADO | 4 | 56 | + 52 |
| 7 | TIXTLA DE GUERRERO | 9 | 55 | + 46 |
| 1 | MARTIR DE CUILAPAN | 3 | 40 | + 37 |
| 13 | CUALAC | 2 | 39 | + 37 |
| 1 | ZIRANDARO | 3 | 38 | + 35 |
| 2 | SAN LUIS ACATLAN | 8 | 42 | + 34 |
| 1 | TLALCHAPA | 4 | 29 | + 25 |
| 1 | ATENANGO DEL RIO | 0 | 20 | + 20 |

*Note:* Category before UPOEG-SSJC emerged = January 2011 – December 2012; Category after the UPOEG-SSJC emerged = January 2012 – December 2017. Group Categories are based off Figure 5.2.

**Table 5.3.** The 15 municipalities that exhibited the highest decrease in the number of homicides after the emergence of the UPOEG-SSJC.

| Group | Municipality | pre | post | incident decrease |
|---|---|---|---|---|
| 4 | ATOYAC DE ALVAREZ | 193 | 75 | -118 |
| 6 | COYUCA DE CATALAN | 161 | 48 | -113 |
| 12 | TELOLOAPAN | 70 | 14 | -56 |
| 4 | COYUCA DE BENITEZ | 202 | 149 | -53 |
| 6 | TECPAN DE GALEANA | 120 | 75 | -45 |
| 12 | IGUALA DE LA INDEPENDENCIA | 176 | 134 | -42 |
| 8 | ACAPULCO DE JUAREZ | 2213 | 2171 | -42 |
| 5 | ARCELIA | 59 | 23 | -36 |
| 1 | PUNGARABATO | 48 | 20 | -28 |
| 3 | TECOANAPA | 22 | 3 | -19 |
| 1 | AJUCHITLAN DEL PROGRESO | 35 | 16 | -19 |
| 3 | OMETEPEC | 109 | 92 | -17 |
| 1 | LEONARDO BRAVO | 16 | 0 | -16 |
| 6 | APAXTLA | 18 | 7 | -11 |
| 6 | San Miguel TOTLAPAN | 30 | 22 | -8 |

*Note:* Category before UPOEG-SSJC emerged = January 2011 – December 2012; Category after the UPOEG-SSJC emerged = January 2012 – December 2017. Group Categories are based on Figure 5.2.

The first tier of the natural breaks includes municipalities that exhibited less than a 203% increase in homicides, along with those that exhibited a decrease (see Figure 5.6). The majority of municipalities fell within the first tier of the natural breaks. Therefore, it is more practical to discuss the fifteen municipalities with the highest incidental decrease in homicide incidents (see Table 5.3). Of these municipalities, three belong to group 1, none belong to group 2, and one belongs to group 3. The remaining eleven municipalities

were not part of the experimental or comparison groups. However, four municipalities had the presence of independent groups, one municipality had the presence of the CRSJ-PSP, and two had the presence of the UPOEG-SSJC and an independent group.

Getis-Ord hot-spot analyses and Moran's I tests were conducted on the pre-intervention homicide data and the post-intervention data. These results are displayed in Figures 5.7 and 5.8. Hot spot $Gi^*$ tests indicate a decrease in the number of hotspot and cold spot clusters when comparing the pre-intervention period and the post-intervention period. The pre-intervention period includes 7 municipalities with a high concentration of homicides and decreased to 5 following the UPOEG-SSJC's emergence. While cold spots decreased from 7 to 2. During the post-intervention period of the UPOEG-SSJC's emergence, one hotspot clustered remained. This cluster includes the municipality of Acapulco de Juárez and the four municipalities that surround it. Of the five municipalities that make up the hotspot cluster, four include the presence of the UPOEG-SSJC. Specifically, three municipalities belong to group 3 as the UPOEG-SSJC is the only vigilante group present. Acapulco de Juárez has the presence of the UPOEG-SSJC and the UPCG, thus this municipality does not fall within group 3. The remaining municipality that makes up this hotspot cluster has the presence of the UPCG alone. Regarding the two cold spots that emerged during the post-intervention, one is composed of a municipality from group 2, while the other is a municipality with the presence of independent vigilante groups.

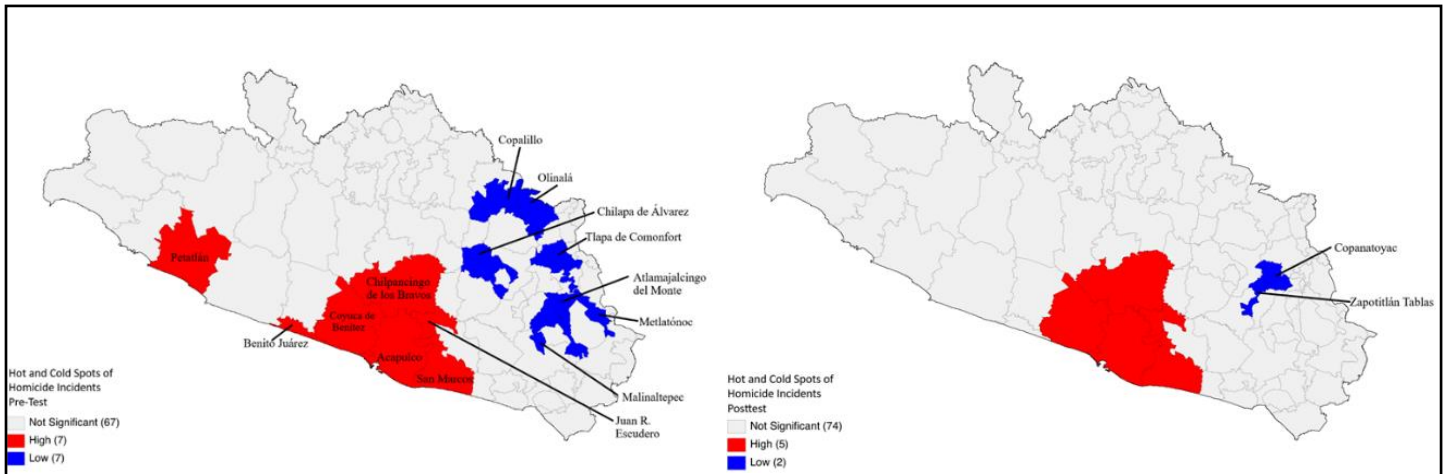


**Figure 5.7:** Homicide incident hotspots using the Getis-Ord Gi* statistic before and after the emergence of the UPOEG-SSJC (N=84 months, January 2011 – December 2017).

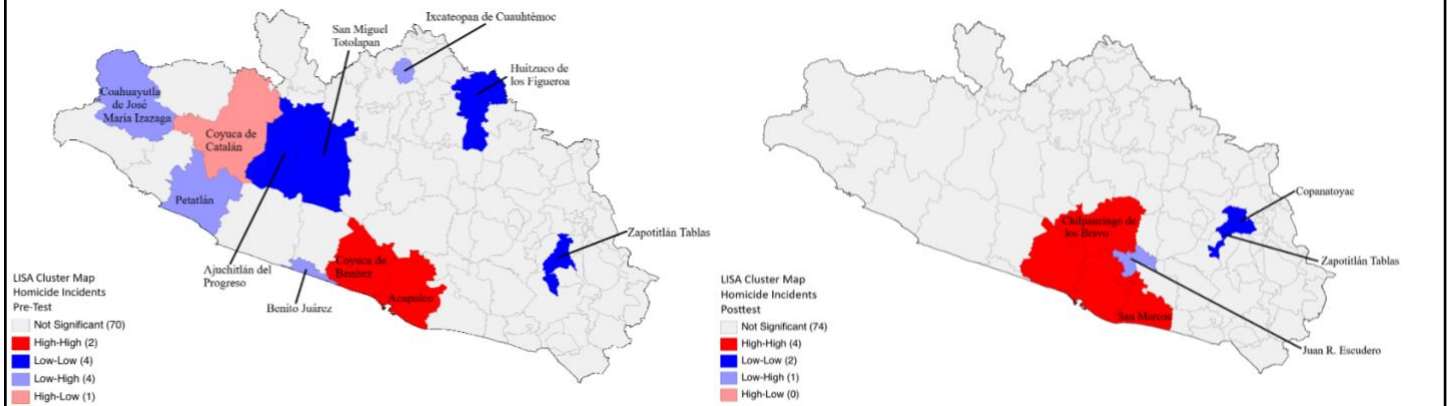


**Figure 5.8:** Local Moran's cluster map of homicide incidents before and after the emergence of the UPOEG-SSJC (N=84 months, January 2011 – December 2017).

Local Moran's I tests comparing the pre-intervention period with the post-intervention of the UPOEG-SSJC's emergence indicate that the number of municipalities with high incident counts that were surrounded by other municipalities with high incident counts increased from 2 to 4 municipalities (Figure 5.8) Acapulco de Juárez and its adjacent neighbor to the west (Coyuca de Benítez) were high-high clusters during the pre-intervention and post-intervention periods. The two municipalities that emerged as high-high clusters during the post-intervention period are municipalities that neighbor Acapulco de Juárez directly to the north and east (Chilpancingo de los Bravos and San Marcos), both of which exhibited the presence of the UPOEG-SSJC.

The number of municipalities exhibiting a low number of homicides that were surrounded by municipalities with a low number of homicides decreased from 4 to 2. These are the same two municipalities that became cold spots in the post-intervention Gi* Hotspot analysis, in which, one was composed of a municipality from group 2, while the other is a municipality with the presence of independent vigilante groups. The number of municipalities exhibiting a low number of homicides that were surrounded by municipalities with a high number of homicides decreased from 4 to 1. The one municipality that emerged as a low-high outlier is the municipality between Chilpancingo de los Bravos and San Marcos, and also exhibited the presence of the UPOEG-SSJC. Lastly, the number of municipalities exhibiting a high incident count and surrounded by municipalities with a low incident count decreased from 1 to 0. Given these results, the response to research question *[Q14]* is yes — the geography of cartel-related homicides changed following the emergence of the UPOEG-SSJC.

**Discussion**

Results suggest that the emergence of the UPOEG-SSJC is associated with increased levels of violence. In correspondence with Castillo and colleagues' rational choice perspective, and Papachristos' (2009) sociological viewpoint linking an increase in competitive groups with an increase in violence, the average amount of monthly homicides significantly increased following the emergence of the UPOEG-SSJC. Similarly, the area with the CRAC-PC and the area without any form of self-defense groups also exhibited an increase in violence. Explanations for the increase in all three groups are discussed below.

The current study provides some support for the hypothesis that *the emergence of a self-defense group in an area with the presence of active DTOs increases the rate of cartel-related homicides*. However, the area without any self-defense groups in Guerrero saw the highest increase in homicides. Whereas the area with the long-established CRAC-PC exhibited the smallest increase in homicides of the three observed groups. While supplementary factors may certainly influence levels of violence, the prospect that the presence of self-defense groups in a specific area and surrounding region can contribute to a significant, long-term increase in homicides is worth considering (Figures 5.4 & 5.5).

In the light of the Del Rio (2020) study indicating that the presence of vigilantes initially saw homicides increase, this study provides similar findings as homicides also initially increased in the area where the UPOEG took up arms and began implementing communitarian police tactics. Consequently, this study has the opposite findings of the Osorio study which saw homicides decrease as vigilantes emerged in Michoacán from

2013 – 2014. Specifically, in municipalities with the UPOEG-SSJC, homicides initially increased significantly, then considerably decreased and began to significantly increase again in late 2014 through the end of the of the study period. More precisely, the first 9 – months of the UPOEG-SSJC's intervention saw an increasing trend in homicides. This suggests that the initial increase in homicides during the intervention period was likely a result of the UPOEG-SSJC engaging in violent competition with criminal groups, in which both sides exhibited loss of life. Similarly, following November 2014, an upward trend in homicides began and peaked in July 2016 and again in June 2017. Again, suggesting a period in which the UPOEG-SSJC attempted to rid their area of operation from criminal groups.

However, it can also be the case that other armed non-state actors operating where the UPOEG-SSJC is present directly attacked the UPOEG-SSJC in order to protect their criminal business interests and/or establish themselves as the dominant non-state armed actors. For example, in March 2015, the UPOEG-SSJC was involved in a violent clash with another self-defense group known as the United Front for the Security and Development of the State of Guerrero (FUSDEG) that left four people dead (Stevenson, 2015). According to Gagne (2015), the FUSDEG was originally part of the UPOEG-SSJC and violence began between the two groups when the FUSDEG broke away from the UPOEG-SSJC. Moreover, competition between the two groups continued through late 2016, as the UPEOG-SSJC and FUSDEG fought for hegemony over a freeway known as "Heroin Highway" (Bonello, 2016). This freeway runs through the municipalities of Chilpancingo de los Bravos and Acapulco de Juárez — both were identified as homicide hotspots in the pre and post period of the spatial analyses along

with three neighboring municipalities (see Figure 5.7). Of these five homicide hotspots, three exhibited the emergence of the UPOEG-SSJC (Chilpancingo de los Bravos, Juan R. Escudero, and San Marcos), one had the combined presence of the UPOEG-SSJC and the UPCG (Acapulco de Juárez), and one had the UPCG presence only (Coyuca de Benítez). Similarly, the emergence of the UPOEG-SSJC in the three aforementioned municipalities coincided with these municipalities becoming high-high clusters for homicides during the post-intervention period (Figure 5.8), along with two of these municipalities making the top 15 list of municipalities with the highest increase in homicides (Chilpancingo de los Bravos and San Marcos) (Table 5.2).

Similarly, although both groups operate as a self-defense force, both have accused each other of having ties to DTO's in the region (Navarro, 2016). The UPOEG-SSJC has accused the FUSDEG of endorsing members of "Los Ardillos" Cartel to be appointed as representatives in community assemblies (Bonello, 2016). While the FUSDEG has accused the UPOEG-SSJC of establishing its own DTO known as the Sur Sierra Unida (Southern Sierra United) and has claimed that the UPOEG-SSJC has ties to the Familia Michoacána and CJNG DTOs (Bonello, 2016). In addition to the violent competition between the UPOEG-SSJC and the FUSDEG self-defense forces, violence in the region is also attributed to intragroup conflicts. For example, two self-defense groups belonging to the FUSDEG have clashed with each other on several occasions. On one occasion in March 2015, 7 people were killed, while on another occasion in June 2015, 15 individuals were killed (Gagne, 2015). These events between self-defense groups resemble the fragmentation and internecine conflict that ensue following the disruption of a DTO via successful high-value target strikes. More importantly, these aforementioned

altercations seem to coincide with the upward trend in homicides exhibited in the area controlled by the UPOEG-SSJC after November 2014 (see Figure 5.4).

Whether or not the allegations that the UPOEG-SSJC and the FUSDEG have made against each other can be confirmed to be accurate, the two competing non-state armed groups have engaged in violent conflict with one another. If allegations of cooperation with DTOs by either self-defense group are authentic, then the rational choice perspective seems to be applicable to the scenario between the UPOEG-SSJC and the FUSDEG as these competing criminal groups disguised as self-defense forces would employ violent tactics with the emergence of a rival in order to protect their share of the market. Therefore, drawing parallels to those observations made by Blumstein (1995), Brownstein et al., (2000) and Castillo et al., (2014) — criminal networks will attack emerging groups in order to protect illegal profits. Likewise, in the scenario that the accusations laid out by each group against the other are inaccurate, then Papachristos' (2009) sociological perspective would appear to be relevant as it would be a case of two non-state armed actors fighting for dominance over a territory. This is because as the two self-defense forces have attacked each other, they have done so in an attempt to establish themselves as the dominant self-defense force in the region. And, if indeed, the UPOEG-SSJC and/or the FUSDEG have ties to DTOs then the groups will view each other as direct competitors in the criminal market.

Regarding the area with the presence of the CRAC-PC, this area exhibited the lowest increase in homicide incidents from the three groups. More importantly, the fact that the area with the CRAC-PC presence saw the lowest increase of the three groups, may suggest that a long-established communitarian police force such as the CRAC-PC

may serve as a deterrent for the emergence of DTO's and DTO activities that would significantly increase homicides incidents. This proposal seems to be corroborated by both spatial analyses (Figures 5.7 and 5.8). This comes as the same two municipalities that were both low-low clusters and cold spots for cartel-related homicides during the post-intervention were 1) under control of the CRAC-PC (Copanatoyac) and 2) under control of an independent self-defense force, although surrounded by three municipalities with CRAC-PC presence (Zapotitlán Tablas) (Figures 5.3, 5.7 and 5.8).

Moreover, the finding that the group of municipalities with the presence of the CRAC-PC is the region where homicides increased the least during the post-test period seems to be explained by several factors. First, Ley, Mattiace and Trejo (2019) explain that the quality of prewar social institutions can play a crucial role in deciding which communities are able to withstand attempts by nonstate armed groups to take control of their towns. Specifically, the 2015 report by Sánchez Valdés found that the area of Guerrero where the CRAC-PC operates is also a cold spot for the presence of criminal organizations. Suggesting that the region controlled by the CRAC-PC has robust social institutions that can resist the intrusion of nonstate armed actors. For example, the CRAC-PC operates in an area known as Costa Chica and La Montaña. This is a sought-after region for drug production and trafficking as marijuana and, particularly, poppy are the dominant cash crops (Kyle, 2015; Ley et al., 2019). However, none of the DTOs fighting for hegemony in other parts of Guerrero have been able to gain control over the area controlled by the CRAC-PC (Ley et al., 2019). This comes as DTOs such as Los Rojos Cartel have continuously attempted to access the region but have failed to do so because of the CRAC-PC's strict controls over its outer borders (Ley et al., 2019).

With regards to the area without the presence of self-defense forces (group 1), this particular area exhibited the highest increase in homicides as incidents more than doubled from an average of 5 per month to 12 (Table 5.1). The fact that the municipalities without any self-defense forces exhibited the greatest increase in homicides between the pre and post-intervention periods suggests that these municipalities did not possess any deterrent factors that would impede DTO activities linked to an increase in homicides. This is the opposite of the area controlled by the CRAC-PC (group 2) that saw a minor increase in homicide incidents, as the area's robust social institutions able to withstand the penetration of DTOs into the region.

Similarly, although the region controlled by the UPOEG-SSJC (group 3) saw an increase in homicides, it seems that the rise in homicides is largely due to the violent competition between the UPOEG-SSJC and the FUSDEG self-defense forces. However, unlike group 3, the increase in homicides exhibited in the region without self-defense groups seems to be associated with violent competition between DTOs as this area of Guerrero has not had any success in limiting the emergence of DTOs. For example, several reports have linked violent competition between DTOs to the increase in violence observed in the time series and spatial analyses of this study.

Of the fifteen municipalities with the highest increase in homicides during the posttest period, six were municipalities without the presence of self-defense forces (Table 5.2). As of September 2015, five of these six municipalities had the presence of a DTO, while four of them had the presence of two or more DTOs (Sánchez Valdés, 2015). These two factors seem to be linked to an increase in homicides. For example, the municipality of General Canuto A. Neri, exhibited the highest increase in homicides as incidents

surged from 3 to 203 — a 6667% increase. This municipality is located in a region where the Guerrero Unidos, Los Rojos, and La Familia Michoacána have engaged in violent competition and does not exhibit the presence of a self-dense group (Sánchez Valdés, 2015).

Some municipalities did not make the top fifteen list but are worth discussing as they share similar characteristics to General Canuto A. Neri. For example, the municipality of Zitlala exhibited the 20th highest increase in homicides — from 0 to 15 — but is not reflected in figure 5.7 as any increase from 0 generates an error when calculating percent. Like General Canuto A. Neri, Zitlala did not exhibit the presence of self-defense forces. More importantly, Zitlala is where Mexican security forces found a clandestine grave site with 32 bodies in November of 2016 (Woody, 2016). During the same time period, Zitlala and its surrounding area experienced turf battles among several DTOs which includes Los Rojos, Los Ardillos, La Familia Michoacána, Guerreros Unidos, and a group known as Los Tequileros (CBS, 2016). These violent conflicts surrounding Zitlala appear to be supported by the analyses of this study as Zitlala's western municipal neighbor, Mártir de Cuilapán appeared in the top fifteen list as homicide incidents increase from 3 to 40 — a 1233%. Most importantly, like General Canuto A. Neri, Zitlala and Mártir de Cuilapán did not exhibit the presence of self-defense forces.

Zirándaro is another municipality without any self-defense forces that made up the top fifteen list as homicide incidents increased by 35 incidents — a 1167% increase. Likewise, Zirándaro was a host to a turf battle between the Knights Templar DTO against the CJNG and Los Granados during the posttest period (Sánchez Valdés, 2015). It seems

that the noteworthy increase in homicides in Zirándaro is linked to a lack of deterrence that saw criminal groups emerge in this municipality and compete for its illegal market. Similarly, the situation in Zirándaro is likely linked to Fregoso's (2017) findings on the origins of internally displaced people (IDPs) in Mexico. According to Fregoso (2017), the majority of IDPs in Mexico with origins from Guerrero, fled from five of the state's municipalities, Zirándaro being one of them.

The other four municipalities where the majority of IDPs from Guerrero came from include Ajuchitlán del Progreso, San Miguel Totolapan, Teloloapan, and Apaxtla. And like Zirándaro, Ajuchitlán del Progreso did not exhibit the presence of self-defense forces either. However, Ajuchitlán del Progreso saw its homicides reduced by more than half during the post-test period. Still, the residents of this municipality were targeted by DTOs as roughly a dozen citizens were kidnapped by members of Los Tequileros in November of 2016 (Woody, 2016). Although this municipality without self-defense forces saw homicides decrease, the fact that residents were targeted for abduction in this area may suggest that a lacking self-defense force may have encouraged Los Tequileros to prey on the residents of Ajuchitlán de Progreso.

Conversely, the three other municipalities where a significant number of IDPs originated from exhibited the presence of self-defense groups. San Miguel exhibited the presence of an independent self-defense group and saw homicides decrease by 8 incidents — a 27% reduction, Apaxtla, also had the presence of an independent self-defense group and saw homicides decrease by 11 incidents — a 61% reduction, while Teloloapan exhibited the combined presence of the UPOEG-SSJC and an independent group and saw homicides decrease by 56 incidents — an 80% reduction (Table 5.3). It could be the case

that IDPs from these municipalities fled before or around the same time self-defense groups formed in these municipalities and were gone before homicide levels decreased. Likewise, IDPs likely left these municipalities for the same reasons that self-defense forces emerged.

It is important to approach the observed trends in each of the three tested groups with caution. While the area without any self-defense forces present (group 1) exhibited the highest increase in homicides during the posttest period, it is important to note that not all the municipalities without a self-defense group saw an increase in homicides as some exhibited a decrease. However, of the municipalities without any self-defense forces that did experience a surge in homicides, it seems that there are two factors related to the increase in homicides. First, the emergence of new DTOs into their territory, and second, the presence of two or more DTOs fighting for control of the illegal markets in those municipalities. Similarly, as homicides rose the least in arears with the CRAC-PC (group 2) and rose less in the area with the UPOEG-SSJC than in the area without self-defense groups, this does not guarantee that the presence of a self-defense force will prevent homicides for increasing. For example, the Tixtla de Guerrero municipality which exhibited the presence of both the CRAC-PC and the UPOEG-SSJC saw homicides increase from 9 to 55 — an increase of 511%. This surge in homicides is said to be related to a turf dispute between Los Ardillos and Los Rojos in Tixtla de Guerrero (Milenio, 2016). Even though Sánchez Valdés (2015) indicates that both the CRAC-PC and the UPOEG-SSJC were present in this municipality, Milenio (2016) indicates that the defense-groups were present in select towns and neighborhoods within the municipality,

therefor the conflict between Los Ardillos and Los Rojos took place outside of those communities controlled by the defense-forces.

With the observed trends in mind, it appears that states or regions within states experiencing armed conflicts, who are considering ways to decrease violence, and/or are comprised of a deficient government, can view the proliferation of a communitarian self-defense force as an optimistic solution to decrease violence and crime in the long term. While homicides increased in the three assessed areas of Guerrero, suggesting a general upward trend during the study period, the area that saw the highest increase was the one without the emergence of self-defense forces. Similarly, although homicides increased in areas with the UPOEG-SSJC, it is likely the result of the direct competition between the UPOEG-SSJC and the FUSDEG, making it probable that a significant portion of homicides in this region were related to this conflict. Moreover, while the state of Guerrero exhibited an upward trend in homicides, the area that saw the smallest increase in incidents is the area controlled by the CRAC-PC.

Therefore, to prevent the continued diffusion of DTOs, the establishment of communitarian self-defense forces by local communities, especially those with indigenous backgrounds should be created with a corresponding legal system such as the one created by the CRAC-PC. Federal and/or provincial governments should also pass laws allowing communities to administer their own policing and judicial institutions while protecting the customs of the indigenous communities as was done in Guerrero's 2011 "Ley 701." Allowing local communities to manage their legal institutions may prevent communitarian self-defense forces from turning over suspected criminals to corrupted public prosecutors that collaborate with criminal networks. Similarly, along

with the creation of a communitarian self-defense force with a parallel legal system, funding needs to be provided so that local communities can create and maintain strong social institutions that can resist the takeover of nonstate armed groups as explained by Ley et al. (2019). Lastly, the CRAC-PC has been operating since 1995, therefore, the creation of any similar communitarian self-defense force and social institutions that will resist the intrusion of nonstate armed groups and a noteworthy increase in homicides will be a long-term endeavor.

**Limitations**

The homicide data used in this chapter comes from the same dataset employed in chapter 3. Therefore, the same limitations detailed about INEGI previously discussed in chapter 3 can be applied here. Mainly, as the dataset only includes reported crimes, there is a chance that unreported homicides in the municipalities within Guerrero are not accounted for in the data that was analyzed. Though, as previously mentioned, homicides have a comparatively high rate of reporting, wholly because it is a difficult crime to conceal when compared to other violent crimes (Calderon, Heinle, Rodriguez Ferreira & Shirk, 2019).

Another limitation the data employed in this study is that incidents of homicide were disaggregated to include only "intentional" homicides "with a firearm." Thus, allowing the possibility that not all of the intentional homicides with a firearm that were analyzed were linked to the violence related to the proliferation of self-defense groups and/or DTOs within the three groups assessed in Guerrero. However, because of the nonexistence of available data on cartel-related homicides, the use of intentional homicides with a firearm as a replacement for cartel-related homicides is the most precise

data accessible at this time as it excludes homicides categorized as "negligent," "unknown" and those perpetrated with a "cold weapon" as cartel related violence is probable to include the use of firearms (Espinal-Enriquez and Larralde, 2015). Similarly, as previously suggested in chapter 3, the Mexican government and nongovernmental groups should collect and publicize data on cartel-related homicides to better assess violence related to DTOs. In addition, INEGI should continue to disseminate data so that researchers can continue to analyze crime trends over time.

Related to the classification of the groups (1-3) with or without self-defense forces, it is important to keep in mind that cataloguing of groups was informed from Sánchez Valdés' (2015) report using 2013 data. It is possible that self-defense forces continued to emerge in other municipalities or seized to operate in municipalities they were accounted for in the Sánchez Valdés (2015) report. Additionally, the classification was aggregated into municipal data. Therefore, as exhibited with the municipality of Tixtla de Guerrero, self-defense forces could operate in portions of a municipality while DTOs control another section of the same municipality. Lastly, it is important to keep in mind that municipalities with multiple self-defense groups were not part of the analysis as it would've been difficult to verify which group is responsible for the increase/decrease in violence. However, the discussion did address some municipalities with noteworthy changes in homicides that exhibited multiple self-defense groups or other groups that were not part of the analysis.

**Conclusion**

This chapter answered Del Rio's (2020) call to further evaluate the relationship between vigilante style groups and homicide rates in areas where criminal groups

operate. This study is the first to analyze the long-term effects that the emergence of a vigilante style group has on violence in the state Guerrero. Similarly, while previous studies assessed the effects of vigilantes on trends of violence in Michoacán, this study is the first to assess the spatial effects that the proliferation of a vigilante style group has on homicides. Likewise, this study also contributed to the literature by being the first to analyze the violent trends in an area that saw a vigilante style group emerge and compare those trends to an area where another vigilante style group has had a long-established presence.

More importantly, this study shed light into the conceivable outcomes of the timely issue that is vigilantism, as vigilante groups have recently emerged in other areas of Mexico. Likewise, the vigilante groups that have emerged in indigenous communities, such as the case with El Machete in Chiapas, can look to the CRAC-PC and the Guerrero state government to establish a similar legal framework if these communities are looking to establish a long-term legitimate communitarian police force and legal system. In allowing self-defense groups to operate through community self-governance, authorities and communitarian police forces should be cautious in allowing individuals with ties to OCGs to penetrate organizations. Particularly, with respect to Guerrero, the state and municipal law enforcement agencies should respect the autonomy of indigenous communities to organize communitarian police forces that will combat and bring members of OCGs to justice. At the same time, state and municipal law enforcement agencies ought to lend these communitarian police forces the support they need to prevent criminal networks from infiltrating their communities.

Future research should survey and record the specific process that allowed communities where the CRAC-PC is present to establish the strong social bonds that have largely allowed the region to resist the intrusion of criminal networks into the areas they control. Additionally, as both Michoacán and Guerrero have now been evaluated, further studies evaluating the effect that vigilante style groups have on cartel-related violence should be conducted in other areas of Mexico or countries where DTOs and vigilante style groups operate. Lastly, this was the third approach to deal with DTOs that was analyzed in this dissertation. The following chapter will discuss the findings and implications of the three approaches analyzed in this dissertation and will end with concluding remarks.

# CHAPTER 6

## Conclusion

Governments who are actively combatting TOC groups by targeting leaders, signing peace accords, and/or exhibit the emergence of vigilante groups continue to face challenges. The approaches discussed in this dissertation provide governments with significant advances in debilitating TOC groups. However, while progress is made with the use of these approaches, there are also setbacks to be considered when employing these tactics. Therefore, the utilization of these approaches prompts indirect consequences to the areas and communities that exhibit the presence of TOC groups.

To successfully combat TOC groups, whether it be DTOs or armed insurgent groups, it is important to consider both the positive and negative outcomes of these tactics. Researchers have previously assessed the use of HVT strikes against DTOs and armed insurgent groups while others have evaluated post-conflict landscapes following the demobilization of armed insurgent groups. Additionally, a small body of literature has analyzed the effect that vigilante groups have on violence related to TOC groups. Although previous studies have focused on evaluating the three aforementioned methods to deal with TOC groups, to date, there is no empirical study to analyze and compare the employment of these approaches. The main purpose of this dissertation was to fill this gap in the literature by empirically exploring and comparing these approaches in an effort to develop a framework that can assist in developing more effective strategies in dealing with TOC groups.

This concluding chapter is arranged into five sections. The first section includes an outline of the dissertation. The second section includes a comparison of each of the

outcomes related to each approach. This is followed by the implications related to each of the approaches while the fourth section discusses the contributions made by this dissertation. Lastly, the limitations of the analyses are addressed and the future research in combatting TOC groups is discussed.

**Summary of Dissertation Components**

This dissertation strived to discover the best strategy to combat TOC groups. In order to determine the best approach, a quantitative research methodology was employed in three different studies. These studies provided an enhanced perspective on the intentional and unintentional consequences on the implementation of these approaches that were previously understood. The dissertation was organized in the following manner. Chapter 1 identified the problem that governments at odds with TOC groups face and discussed the significance of this dissertation. Chapter 2 reviewed the literature on the three approaches assessed in this study. First was the review on HVT strikes and the use of this tactic against gang leaders, DTOs, and armed insurgent groups. This was followed by a review of post-conflict societies and themes related to vigilantism. The second chapter concluded with the identification of gaps in the literature related to each of the approaches and the importance of filling those gaps.

In chapter 3, a case study was conducted to evaluate the effect that the implementation of HVT strikes against two DTO leaders had on cartel-related violence in Tijuana, Mexico. The study used an ARIMA interrupted time series model and independent sample t-test to provide answers to questions on the effect that the capture of DTO leaders has on cartel-related violence. The results linking HVT strikes and cartel-

related violence were discussed. The chapter was completed with a discussion of the limitations and conclusion.

Chapter 4 was divided into two parts. The first section analyzed the effect that the implementation of HVT strikes against the leaders of an armed insurgent group had on terrorism. The study employed an ARIMA interrupted time series model and spatial analyses to answer questions on the effect that the killing of armed insurgent group leaders has on the rate of terrorist incidents, the lethality of terrorist incidents, and the geography of attack incidents. The results linking HVT strikes and terrorism were discussed. This section closed with a discussion of the limitation and conclusion.

Part 2 of chapter 4 analyzed the effect that the signing of a peace accord has on terrorism and cartel-related homicides. The study employed an ARIMA interrupted time series model and spatial analyses to answer questions on the effect that the signing of a peace accord has on the rate of terrorist incidents, the lethality of terrorist incidents, the geography of attack incidents, the rate of cartel-related homicides, and the geography of cartel-related homicides. The findings of the effect that the peace accord had on terrorism and homicides was discussed. Part 2 concluded with a comparison of the results between the approach assessed in part 1 and part 2, followed by the limitations and conclusion.

In chapter 5, a case study was conducted to evaluate the effect that the emergence of self-defense forces has on cartel-related homicides in Guerrero, Mexico. The study used an independent sample t-test and spatial analyses to provide answers to questions on the effect that the emergence of a self-defense group (vigilantes) has on the rate of cartel-related homicides and the geography of those homicides. The results linking the

emergence of a self-defense force to cartel-related violence were discussed. The chapter was completed with a discussion of the limitations and conclusion.

**Comparison of Outcomes**

This section discusses and compares the outcomes of the three approaches analyzed in this dissertation. First, the use of HVT strikes in Tijuana weakened the DTOs who were subjected to this approach. DTOs who saw their leader apprehended became vulnerable or exhibited fragmentation. However, while the DTOs were weakened by fragmentation or vulnerability, this approach was also accompanied by negative outcomes, mainly, an increase in cartel-related homicides. Homicides increased due to the vulnerability exhibited by the AFO following the arrest of its leader as the group became susceptible to sharing its territory with another TOC group, the CJNG. The partnership between the CJNG and the AFO in Tijuana saw the two DTOs challenge the Sinaloa Cartel for hegemony of the Tijuana trafficking corridor. Similarly, the capture of the Sinaloa Cartel's leader saw the organization fragment as factions began to compete against each other and attacks from rival groups increased, mainly the CJNG. Therefore, in addition to the increase in homicides exhibited following both of the evaluated HVT strikes, the targeted DTOs were weakened by the capture of their leaders while the CJNG was empowered.

In a similar approach to the tactic employed against DTOs in Tijuana, the use of HVT strikes against the FARC (an armed insurgent group), resulted in backlash as the group significantly increased the number of terrorist attacks following the strike(s). In addition, the FARC began to carry out attacks in municipalities that it had not previously targeted as a result of HVT strikes. Nevertheless, on a positive note, although attacks by

the FARC increased following the targeted strikes, the deadliness of these attacks significantly decreased.

The second approach, the signing of the peace accord between the Colombian government and the FARC, saw the opposite effect of the HVT strike approach, as terrorist attacks by FARC dissidents significantly decreased. Similarly, the decreased number of attacks perpetrated by FARC dissidents following the accord were considerably less lethal. Another encouraging outcome following the peace accord is that the number of municipalities that exhibited terrorist attacks significantly decreased. Related to terrorist incidents perpetrated by FARC dissidents, the peace accord exhibited positive outcomes. Similarly, another optimistic outlook is that terrorist incidents perpetrated by the ELN also decreased following the peace accord between the FARC and Colombian government. However, an initial decrease of ELN incidents was short lived as incidents perpetrated by the rebel group significantly increased following the expiration of a ceasefire between the group and the Colombian government.

Regarding the link between the peace accord and homicides, homicides increased insignificantly following the adoption of the accords. Therefore, homicide trends following the accords are like those at the time that the accords were signed. However, a closer examination found that homicides declined in many areas but were offset by a surge in specific areas previously controlled by the FARC. These specific areas contain illegal economies that were formerly controlled by the FARC. The demobilization of the FARC in these particular regions has left the illegal economies in these areas in contention between other TOC groups. These groups are engaged in internecine violence with the goal of gaining hegemony of the FARC's vacated illegal economies. Therefore,

the areas previously ruled by the FARC have seen the negative outcome of increased homicides.

The third approach, the emergence of the UPOEG-SSJC, a vigilante style group, in certain parts of Guerrero, Mexico in 2013 was met with an increase in homicides. However, areas where the UPOEG-SSJC emerged exhibited less of an increase in homicides than areas without the presence of vigilante groups. Therefore, it can be said that the emergence of vigilante style groups in Guerrero have a positive outcome of restraining the increase in homicides when compared to areas without vigilante groups. More importantly, another area of Guerrero that has exhibited the presence a communitarian police force since 1995, the CRAC-PC, experienced the lowest increase in homicides. Thus, regions with deep-rooted communitarian police forces exhibited the most beneficial result as homicides increased the least in these areas.

Each of the approaches have positive and negative after-effects (see Table 6.1). The use of HVT strikes; apprehensions or targeted killings, will debilitate a DTO and an armed insurgent group's capacity to commit deadly attacks. However, the implementation of this approach comes with unintentional consequences as homicides increase when this tactic is used against DTOs, while the number of terrorist attacks surge in new municipalities when implemented against armed insurgent groups. On the other hand, the signing of a peace accord with an armed insurgent group will see the number and deadliness of terrorist attacks by dissident groups decrease, along with the number of attacks by the organization that becomes the biggest armed insurgent group (ELN) following the demobilization of the previously largest group (FARC). With this in mind, the HVT strike, and the peace accord approaches are similar in that both

| Approach | HVT Strike Against DTOs | HVT Strike Against Armed Insurgent Groups (FARC) | 2016 Peace Accord between the Colombian Government and the FARC | Emergence of the UPOEG-SSJC vigilante group | Communitarian Police Force |
|---|---|---|---|---|---|
| Positive Outcomes | - Weakening of DTO<br>o AFO became vulnerable to partnership with CJNG<br>o Sinaloa Cartel exhibited fragmentation | - Lethality of terrorist attacks by the FARC were significantly diminished | - Number of terrorist attacks by dissident FARC groups significantly decreased<br>- Lethality of terrorist attack by dissident FARC groups significantly diminished<br>- Less municipalities exhibited terrorist attacks<br>- Number of terrorist attacks by secondary armed insurgent group (ELN) initially decreased | - Homicides increased less in areas with the presence of the UPOEG-SSJC than in areas without any vigilante forces | - Homicides in areas controlled by the CRAC-PC saw the lowest incidental increase in homicides when compared to areas with the UPOEG-SSJC and areas without any vigilante groups |
| Negative Outcomes | - Partnership of debilitated AFO and CJNG is associated to increased violence as allied DTOs feuded with rival DTOs<br>- Fragmented factions of the Sinaloa Cartel engaged in internecine violence as factions attempted to gain control of DTO | - Backlash Effect<br>o Number of terrorist attacks significantly increase<br>o New municipalities are targeted with increased attacks | - No significant effect on overall number of homicides<br>- Former areas controlled by demobilized insurgent group (FARC) are now disputed by other TOC groups.<br>o These areas exhibited an increase in homicides | - Homicides significantly increased in areas where the UPOEG-SSJC emerged | - Homicides doubled from 1 homicide per month to 2 following the emergence of the UPOEG – SSJC |

**Table 6.1:** Positive and Negative Outcomes related to each of the Assessed Approaches.

approaches exhibited a reduction in the lethality of attacks. However, the HVT strike approach saw terrorist attacks surge in both total number and in the number of municipalities that were targeted. Conversely, the peace treaty method exhibited a decrease in the number of attacks and municipalities attacked.

It is important to note, that it is likely the case that terrorist incidents significantly decreased following the peace accords for several reasons. First, following the demobilization of the FARC, there was a significant reduction in combatants that were able to effectively plan and carry out terrorist attacks for FARC dissident groups. Second, since FARC dissident factions are now operating as a federation —unlike the original FARC that operated in a hierarchical structure — different groups now are carrying out operations that directly affects their specific economic wellbeing. Third, only the Segunda Marquetalia dissident faction has proclaimed that it will continue the FARC's original political agenda and armed insurrection with the use of terrorist attacks. Therefore, while one specific dissident faction has decided to continue attacking the government for political gains, the other dissident factions continue to be active to benefit from the diverse criminal economies left behind by the original FARC.

Lastly, similar to the use of HVT strikes against DTOs, the peace accord with the FARC was followed by an increase in homicides in the areas that the FARC controlled before it was demobilized. Comparable to the aforesaid outcomes, the emergence of the UPOEG-SSJC also saw homicides increase in the area of Guerrero that they operated in. While homicides increased in the three areas of Guerrero that were analyzed, the region that experienced the smallest increase in homicides is the area that has had the presence

of a communitarian police force for over 25 years. With the abovementioned outcomes in consideration, the following section will discuss the implications of these aftermaths.

**Implications of Outcomes**

Based on the evidence from the three assessed cases, policy recommendations will be made regarding the implementation of HVT strikes and peace accords. This will be followed with a policy brief for communitarian police forces, along with a general policy brief to be applied across the differing cases. Because the regions analyzed in the three separate cases are different in nature, a one size fits all approach for combatting TOC groups may not be a pragmatic approach. Regarding the use of HVT strikes against DTOs, it is recommended that this tactic is no longer employed. This comes as this approach was linked with a significant increase in cartel-related homicides when employed against the leaders of the Tijuana and Sinaloa Cartels. Similarly, this approach does not seem to debilitate a DTO in the long-term as both the Tijuana and Sinaloa DTOs continue to operate today. Lastly, this approach does not appear to deter the leaders of other DTOs as other DTOs take advantage of DTOs that lose a leader, instead of ceasing operations.

Likewise, it is similarly recommended that HVT strikes against armed insurgents are no longer employed. This is due to the fact that the chapter 4 Part 1 study revealed that this approach was followed by retaliation from the FARC, as terrorist incidents perpetrated by the FARC significantly increased following HVT strikes against its leaders. Similarly, in addition to an increase in terrorist incidents following a HVT strike,

the FARC began to attack new areas as new municipalities began to exhibit terrorist attacks following the killings of the group's leaders.

Regarding the implementation of peace accords between governments and armed insurgent groups, the findings from chapter 4 Part 2 indicate that this approach should continue to be used by governments at odds with a non-state armed actor. This recommendation is based on the findings that terrorist incidents were significantly reduced by dissident FARC groups following the adoption of the November 2016 peace accords. Similarly, the lethality of terrorist incidents perpetrated by FARC dissident were also significantly decreased. Lastly, there was a significant reduction in municipalities that exhibited attacks by dissident FARC groups following the accords.

It is important to keep in mind that the peace accords between the FARC and the Colombian government did not reduce cartel-related homicides. Moreover, areas that were previously dominated by the FARC exhibited a significant increase in cartel-related homicides as FARC dissidents and other criminal groups attempted to gain a monopoly of the FARC's vacated territories. Therefore, based on the increase in violence in Colombia's post-conflict regions, it is suggested that governments who adopt a peace treaty employ the following recommendations to limit an increase in violence: First, deploy security forces to the demobilization region prior to demobilization and maintain these forces in the region long after the demobilization takes place.

Second, governments need to uphold their end of the treaty in order to minimize any continuing grievances that may lead to the proliferation of dissident factions. Lastly, closely monitor ex-mid and high-level combatants to ensure that these individuals do not establish dissident groups as these are the ex-combatants most likely to take up arms

again. Future negotiations should include clauses in a peace treaty that require these specific ex-combatants to participate in reintegration programs where they are closely supervised by government officials.

***Communitarian Police Policy Brief***

The approach that appeared to be the most promising is the presence of a long-established communitarian police force, such as the CRAC-PC in Guerrero. This comes as chapter 5 indicates that the region with the CRAC-PC exhibited the smallest increase in homicides of all the areas analyzed in this dissertation. Therefore, it is recommended that the Guerrero state government continues to allow the CRAC-PC to operate. More importantly, if the UPOEG-SSJC or other vigilante style groups within Guerrero wish to continue operating, the Guerrero state government should only allow them to operate under the framework and regulations that the CRAC-PC operates. It is important to keep in mind that the CRAC-PC is an indigenous communitarian police force, therefore, other indigenous groups that wish to undertake their own self-governance and self-policing practices need to first be recognized under Guerrero's Ley 701. A legal recognition under Ley 701, will allow an indigenous communitarian police force to receive operational funding from the Guerrero state government.

In addition to legal recognition under Ley 701, Ley and colleagues (2019) highlight several factors that have led the CRAC-PC model to be successful. First, the established declaration of local indigenous customary laws and traditions into regional communities appears to be the determining factor between subjugation and successful resistance against a non-state armed actor. Therefore, indigenous laws and traditions need to be engraved into the community by public service announcements and education.

Second, the quality of prewar social institutions can play a crucial role in deciding which communities are able to withstand attempts by non-state armed groups to take control of their towns. As a result, self-governing communities need to invest their resources in promoting robust family ties, community trust with the local government, promote economic and educational opportunities, and recommend the participation in religious groups.

Third is the creation of a parallel legal system. This parallel legal system should include a policing system that operates alongside a municipal police force and an autonomous judicial system. An autonomous judicial system can limit public prosecutors employed by the official justice system in conspiring with criminal networks. Therefore, self-governed communities should not entrust policing and prosecutorial practices to outside professionals as community members should be the ones involved in the policing and judicial institutions and practices in order for justice to be attained and maintained. With this in mind, community members need to play a part in holding these officials accountable.

Fourth, the collective decision-making, participation and social accountability that makes up the robust policing and justice systems in the indigenous CRAC-PC region of Guerrero, along with the cooperation with religious and political allies has allowed for the establishment of an infrastructure capable of resisting DTOs into the area. As a result, community members need to actively participate in their local self-governing institutions and continue their partnerships with religious and political partners. Lastly, the CRAC-PC's strict control over its borders has protected the region from being penetrated by DTOs. Consequently, self-governing communities should establish border check points

and assemble fortified boundaries to resist the intrusion of criminal organizations. These aforementioned features have allowed the CRAC-PC to limit violence from significantly increasing and has prevented the arrival of criminal organizations in the group's territory. With this in mind, the recommendations of this policy brief should be adopted by indigenous groups seeking to establish their own communitarian police force. These recommendations can similarly be applied to other Mexican states, and countries where indigenous groups are seeking to establish communitarian police style forces.

***General Policy Brief***

The section above is limited in that it outlined specific recommendations to combat DTOs related to the establishment of communitarian police forces. However, this specific section will make six recommendations that can be applied to any region combatting any form of TOC group. The first recommendation is related to cross-agency cooperation, communication and intelligence sharing among law enforcement and intelligence agencies. Multilateral task forces with local and international law enforcement agencies should be created or continued to be used. Task forces should include U.S. federal agencies and local agencies from countries where TOC groups operate so that trusted interpersonal and interagency relationships can be fostered. Task forces are effective in disrupting transnational organized crime because it allows law enforcement entities to bypass jurisdictional issues and gather resources and expertise to combat TOC groups (Alwari et. al, 2019).

The second recommendation focuses on institutional trustworthiness and accountability as many of the countries where TOC groups operate are plagued with systemic corruption. For example, it is alleged that both low- and high-ranking officials

within the Venezuelan navy, army, air force and National Guard are involved in criminal activities that include gasoline smuggling and drug trafficking (InSight Crime, 2021). Similarly, both Mexico and Colombia, along with 17 other Latin American and Caribbean countries ranked below average in the 2021 Corruption Perceptions Index (Gorder & Robins, 2022). Therefore, anti-corruption initiatives should be implemented to remove corrupt officials from their capacities in government. More developed countries should aid countries plagued with corruption by establishing independent anti-corruption agencies commissioned to enforce the rule of law. An example of this can be seen with the United Kingdom's establishment of the Corrupt Practices Investigation Bureau (CPIB) in Singapore (Alwari et. al., 2019). The CPIB was established by the British colonial government in 1952, leading Singapore to rank as one of the least corrupt countries in the world (Kuan, 2018).

The third recommendation relates to social crime prevention through education and community intervention programs. Educational programs focused on TOC consciousness and prevention have yielded positive results in countries with high rates of TOC participation. For example, police in Zimbabwe joined forces with schools to deliver instruction on the harms of TOC activities for students and the country has exhibited decreased participation in TOC (Chihuri, 2002). Similarly, in Palermo, Sicily, 25,000 children have participated annually in a program that implements practical exercises, school projects, and classroom lectures that teaches them about the nature of corruption and involvement with the mafia (Godson & Williams, 2007). In addition to interventions in the school setting, youth outreach programs should be implemented to target at risk youths. This comes as family, community, and street outreach programs

shape resiliency against the influence of TOC groups through the prevention and intervention of high-risk behavior (Alwar et. al, 2019).

Recommendation four involves the use of media. To begin with, TOC groups have employed social media and social networking services such as Facebook and Twitter to recruit new members (Alwar et. al, 2019). Therefore, governments should collaborate with these social media companies to censor online posts related to recruitment and eliminate any communications from criminal networks on these sites. Similarly, several media platforms can be utilized to reduce the community tolerance for TOC groups. In this regard, governments where TOC groups operate should disseminate the harmful effects that TOC has on their society. Public service announcements that underscore the experiences of victims and survivors of TOC groups can be made using digital and social media. The aim of this effort would be to illustrate that TOC groups are a phenomenon that cost a significant amount of lives, which breaks social and family cohesion, and causes physical and psychological injury (Alwar et. al, 2019).

The fifth recommendation focuses on the disruption of the socioeconomic pull factors that attract vulnerable populations to joining criminal networks. In order to increase entrepreneurship, developed countries should partner with international organizations and non-governmental organizations to develop microloan programs for countries that are a source for TOC groups. Microloan programs should target young members of vulnerable communities in order to give them a legitimate and optimistic alternative to joining organized criminal groups. These programs have yielded positive results in countries such as India, South Africa, and Mexico, by eliminating the financial influence that criminal networks have on their recruitment population as they provide an

alternate source of revenue (Alwar et. al, 2019). In addition to promoting entrepreneurship, microloans could also be used to fund college tuition and/or trade school enrollment that will similarly provide individuals with opportunities for lawful employment. It is important to note that oversight and transparency for these programs are vital in order to ensure that financial aid is being used for legitimate economic activities, and not being used to further the operations of TOC groups.

Lastly, recommendation six of this general policy brief is related to the second recommendation related to the *Communitarian Police Policy Brief* section above. As discussed, the CRAC-PC region exhibited robust social institutions that allowed the community to resist the entry of DTOs into its society. This characteristic should be adopted by all regions where TOC groups are present. Therefore, governments at all levels need to invest in the social fabric and capital of their societies. This is of grave importance as several studies have found that a robust social capital is negatively associated with crime. For example, Rosenfeld, Messner and Baumer (2001) indicate that "Where levels of generalized social trust are high and civic engagement is widespread, homicide rates are low, regardless of the level of deprivation, the density of the population, and other sociodemographic influences" (p. 300). Similarly, increased levels of social capital have shown to decrease firearm violence (Kennedy, et al., 1998), decrease fear of crime in the neighborhood (Kruger et al., 2007), and reduce in burglary and larceny rates (Deller & Deller, 2012).

The recommendations here underscore the importance that stakeholders beyond law enforcement entities have in collectively collaborating to combat TOC. It is imperative that international law enforcement and intelligence agencies cooperate with

each other and share data on TOC groups. Similarly, the collaboration between governments, banks, non-governmental organizations, the educational system, and private media companies to combat TOCs is as important as any law enforcement response. With this in mind, countries who currently exhibit the presence of TOC groups should immediately begin implementing the six aforementioned recommendations.

**Contributions**

This dissertation offers to make several contributions. Most relevant, is the fact that the three studies in this dissertation provide support for the theoretical outcomes related to each of the evaluated approaches. Most importantly, is the discussions outlining the positive and negative consequences of these tactics and the recommendations to mitigate the undesirable aftermaths. First, the case study on HVT strikes in Tijuana is in line with the results of other studies that indicate that the dismemberment of DTO leaders is associated with an increase in violence. The analyses of two distinct HVT strikes in Tijuana against two separate DTOs provides insight into the comparable aftermaths of implementing this approach against 1) a regional tollgate DTO and 2) a DTO who is said to have the biggest international footprint of all the DTOs in Mexico. Both HVT strikes were linked to an increase in violence and empowered a tertiary DTO that was not targeted. The aftermaths of both strikes indicate the use of HVT strikes comes with unintended results, whether employed against a regional or large DTO. These are considerations that governments and authorities can now use as reference when combatting small and larger DTOs.

Second, the evaluation of HVT strikes against armed insurgent leaders is also in line with the results of other studies. As this study indicates, HVT strikes against an armed insurgent group is linked to a backlash effect of increasing terrorist attacks while at the same time decreasing the lethality of the attacks. More importantly, this is the first study to compare the tactics of HVT strikes against an armed insurgent group with the adoption of a peace accord. In relation to terrorism, the study revealed that the adoption of a peace treaty results in better after effects than the use of HVT strikes. As a result, countries dealing with armed insurgent groups that implement acts of terrorism as a mechanism of combat can look to the findings of chapter 4 when considering if to continue the fight with a rebel group or end it via a peace treaty. More importantly, this study will provide any government dealing with this dilemma with an overview of the long-term outcomes of these two differing approaches.

Additionally, the evaluation of cartel-related homicides following the adoption of a peace accord is similarly in line with the results of other studies specifying that there is an increase in violence in the areas where an armed insurgent group was demobilized. More importantly, the analysis in chapter 4 is only the second study to ever apply the breakdown of illegal protection systems theory. Indicating that the demobilization of an armed insurgent group is associated with the breakdown of illegal protection system as other criminal networks emerge into a demobilized region to gain control of the relinquished criminal economies. The findings of this post-FARC study are relevant to the Colombian government as it continues to deal with the ELN and FARC dissident factions. These findings are also pertinent to the numerous countries who are similarly combatting armed insurgent groups while pondering if a peace treaty with said groups is

a practical approach. More importantly, governments who will eventually reach a peace deal with an armed insurgent group can look to these findings to mobilize their armed forces in areas before they are vacated by the demobilized insurgent group.

Lastly, the study on vigilantism and cartel-related violence in Guerrero is the first study to evaluate the relationship between these two variables within the Guerrero state. Most crucial, is that as vigilante groups continue to emerge in different areas of Mexico, state governments throughout the country can look to the chapter 5 study as a guide if they choose to allow these groups to operate. Similarly, the outcomes of the chapter 5 analysis will serve as a model to regions throughout the world that are faced with the emergence of vigilante style groups.

**Limitations and Future Research**

This section discusses the limitations of the studies in this dissertation and implications for future research. Despite the contributions of this dissertation, there are several shortcomings that were addressed as limitations in each of the studies. First, there were methodological peculiarities of the statistical method employed in chapter 3. As the chapter 3 study employed an ARIMA interrupted time series, the number of pre-intervention observations were short of the recommended amount to perform this statistical analysis. As a result, this shortcoming may have impacted the results. Second, the two homicide datasets used in the three studies do not differentiate between cartel-related and non-cartel-related homicides which is why intentional homicides with a firearm were used as a proxy for cartel-related homicides. Similarly, as these datasets rely on reported crimes, it could be the case that unreported homicides were not accounted for

in the datasets. Third, the recommendations that have been laid out in the sections above are specific to DTOs and politically motivated armed insurgent groups. Therefore, these recommendations are not generalizable to religiously motivated groups such as the Islamic State.

Future research should continue to evaluate the effects of leadership removal against a wide array of criminal networks in different settings. Similarly, future studies on the effects of leadership removal should begin to analyze the spatial effects that these strikes have on homicides. More importantly, the situations in Colombia following the peace accords with the FARC and the wide array of criminal networks and self-defense groups operating in Guerrero and other parts of Mexico are very fluid. Therefore, these two areas should continue to be analyzed as further evaluation of these areas and approaches may answer more questions related to the interventions assessed in this dissertation.

Lastly, this dissertation concludes with the assertion that there is no one size fits all approach to combatting TOC groups. Instead, a combination of the approaches that have been assessed is recommended. Similarly, law enforcement agents, militaries, academics, and local communities need to collaborate to reduce the threats that TOC groups pose. With the combined use of the assessed approaches as discussed above, the findings of this dissertation are expected to aide governments in successfully combatting TOC groups.

## Final Words

This dissertation is a scientific inquiry into three interventions employed to combat TOC groups. Specifically, each case study served as a policy evaluation that should be considered for governments combatting DTOs and armed insurgent groups. More importantly, evidence-based policies should be employed from the findings of each case study. Similarly, this dissertation contributes to the line of inquiry of security studies and international relations. It is important to continue conducting policy evaluations on the responses to combat TOC groups so that governments can implement the practices with the most favorable outcomes, and similarly prepare for any anticipated negative consequences. Moreover, this line of inquiry that evaluated several interventions within the security studies realm should be applied to the fields of criminology and criminal justice. This comes as there are many criminal justice policy interventions that can be analyzed with a similar analytical approach, such as, gun bans and gun buyback programs. Lastly, the same methods employed in this dissertation can be used to evaluate the effectiveness of removing gang leaders or high-value drug dealers.

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## Appendices

Appendix A: Municipalities that exhibited an increase in the N of FARC attacks following the Reyes strike and municipalities that began to experience attacks following the strike.

| Municipality | Attacks (N) Pre-Reyes Strike | Attacks (N) Post-Reyes Strike | Incidental Change |
|---|---|---|---|
| Neiva | 4 | 25 | 21 |
| Arauquita | 1 | 6 | 5 |
| Planadas | 1 | 4 | 3 |
| La Montañita | 1 | 3 | 2 |
| San Agustín | 1 | 3 | 2 |
| Barbacoas | 1 | 3 | 2 |
| Florida | 1 | 3 | 2 |
| Isnos (San José de Isnos) | 1 | 3 | 2 |
| Popayán | 1 | 3 | 2 |
| Funes | 2 | 4 | 2 |
| Puerres | 2 | 4 | 2 |
| Colombia | 0 | 2 | 2 |
| Corinto | 0 | 2 | 2 |
| Ituango | 0 | 2 | 2 |
| Maicao | 0 | 2 | 2 |
| Miranda | 0 | 2 | 2 |
| Quibdó (San Francisco de Quibdó) | 0 | 2 | 2 |
| Rioblanco | 0 | 2 | 2 |

| | | | |
|---|---|---|---|
| San Antonio | 0 | 2 | 2 |
| Cartagena del Chairá | 1 | 2 | 1 |
| Chaparral | 1 | 2 | 1 |
| Apartadó | 1 | 2 | 1 |
| Argelia | 1 | 2 | 1 |
| Aipe | 0 | 1 | 1 |
| Alvarado | 0 | 1 | 1 |
| Baraya | 0 | 1 | 1 |
| Barrancas | 0 | 1 | 1 |
| Betania | 0 | 1 | 1 |
| Bituima | 0 | 1 | 1 |
| Cabrera | 0 | 1 | 1 |
| Cáceres | 0 | 1 | 1 |
| Chita | 0 | 1 | 1 |
| Chitagá | 0 | 1 | 1 |
| Cubarral (San Luis de Cubarral) | 0 | 1 | 1 |
| Cucutilla | 0 | 1 | 1 |
| El Retorno | 0 | 1 | 1 |
| Fómeque | 0 | 1 | 1 |
| Garzón | 0 | 1 | 1 |
| Guachené (← Caloto) | 0 | 1 | 1 |
| Guapi | 0 | 1 | 1 |
| Guayabal de Síquima | 0 | 1 | 1 |

| | | | |
|---|---|---|---|
| Inzá | 0 | 1 | 1 |
| Jericó | 0 | 1 | 1 |
| La Victoria | 0 | 1 | 1 |
| Labateca | 0 | 1 | 1 |
| Líbano | 0 | 1 | 1 |
| Medio Atrato | 0 | 1 | 1 |
| Miraflores | 0 | 1 | 1 |
| Pasto (San Juan de Pasto) | 0 | 1 | 1 |
| Patía | 0 | 1 | 1 |
| Piendamó - Tunía | 0 | 1 | 1 |
| Prado | 0 | 1 | 1 |
| Puerto Caicedo | 0 | 1 | 1 |
| San Juan del Cesar | 0 | 1 | 1 |
| San Rafael | 0 | 1 | 1 |
| Santa Fé de Antioquia | 0 | 1 | 1 |
| Santiago | 0 | 1 | 1 |
| Socotá | 0 | 1 | 1 |
| Solano | 0 | 1 | 1 |
| Toledo | 0 | 1 | 1 |
| Totoró | 0 | 1 | 1 |
| Venadillo | 0 | 1 | 1 |
| Villagarzón | 0 | 1 | 1 |
| Belén de Umbría | 1 | 1 | 0 |
| Cértegui | 1 | 1 | 0 |

| | | | |
|---|---|---|---|
| Guayabetal | 1 | 1 | 0 |
| Ipiales | 1 | 1 | 0 |
| La Palma | 1 | 1 | 0 |
| Morales | 1 | 1 | 0 |
| Ortega | 2 | 2 | 0 |
| Ovejas | 1 | 1 | 0 |
| Puerto Libertador | 1 | 1 | 0 |
| Sipí | 1 | 1 | 0 |
| Tarazá | 1 | 1 | 0 |
| Roncesvalles | 1 | 1 | 0 |
| Tuluá | 1 | 1 | 0 |
| El Tarra | 1 | 1 | 0 |

Appendix B: Municipalities that exhibited an increase in the N of FARC attacks during the period of strikes and municipalities that began to experience attacks following the strike.

| Municipality | Attacks (N) Pre-Period of Strikes | Attacks (N) Post-Period of Strikes | Incidental Change |
|---|---|---|---|
| Neiva | 4 | 34 | 30 |
| Ibagué | 0 | 25 | 25 |
| Arauquita | 1 | 9 | 8 |
| Santander de Quilichao | 0 | 8 | 8 |
| Argelia | 1 | 7 | 6 |
| San Andrés de Tumaco (Tumaco) | 0 | 6 | 6 |
| Caloto | 0 | 6 | 6 |
| Yarumal | 0 | 6 | 6 |
| Planadas | 1 | 6 | 5 |
| Corinto | 0 | 5 | 5 |
| Caldono | 0 | 5 | 5 |
| El Tarra | 1 | 5 | 4 |
| Algeciras | 0 | 4 | 4 |
| Cajibío | 0 | 4 | 4 |
| Jambaló | 0 | 4 | 4 |
| Ricaurte | 0 | 4 | 4 |
| Maicao | 0 | 4 | 4 |
| Miranda | 0 | 4 | 4 |
| El Paujíl | 0 | 4 | 4 |
| Apartadó | 1 | 4 | 3 |
| Florida | 1 | 4 | 3 |
| Isnos (San José de Isnos) | 1 | 4 | 3 |
| Popayán | 1 | 4 | 3 |
| Funes | 2 | 5 | 3 |
| Puerres | 2 | 5 | 3 |
| Toribío | 4 | 7 | 3 |
| Municipality (cont.) | 0 | 3 | 3 |
| San José del Guaviare | 0 | 3 | 3 |
| San Antonio | 0 | 3 | 3 |
| Medio Atrato | 0 | 3 | 3 |

| | | | |
|---|---|---|---|
| Patía | 0 | 3 | 3 |
| Puerto Caicedo | 0 | 3 | 3 |
| Toledo | 0 | 3 | 3 |
| Uribia | 0 | 3 | 3 |
| Valle del Guamuez | 0 | 3 | 3 |
| Colombia | 0 | 3 | 3 |
| Anorí | 1 | 3 | 2 |
| Barbacoas | 1 | 3 | 2 |
| Tuluá | 1 | 3 | 2 |
| Teorama | 2 | 4 | 2 |
| Ituango | 0 | 2 | 2 |
| Quibdó (San Francisco de Quibdó) | 0 | 2 | 2 |
| Rioblanco | 0 | 2 | 2 |
| Aipe | 0 | 2 | 2 |
| Fómeque | 0 | 2 | 2 |
| Miraflores | 0 | 2 | 2 |
| Pasto (San Juan de Pasto) | 0 | 2 | 2 |
| Piendamó - Tunía | 0 | 2 | 2 |
| Solano | 0 | 2 | 2 |
| Campamento | 0 | 2 | 2 |
| Capitanejo | 0 | 2 | 2 |
| Milán | 0 | 2 | 2 |
| Orito | 0 | 2 | 2 |
| San Miguel | 0 | 2 | 2 |
| Alvarado | 0 | 2 | 2 |
| Cartagena del Chairá | 1 | 2 | 1 |
| Chaparral | 1 | 2 | 1 |
| Guadalupe | 1 | 2 | 1 |
| Roncesvalles | 1 | 2 | 1 |
| San Carlos | 1 | 2 | 1 |
| San Andrés | 2 | 3 | 1 |
| Arauca | 4 | 5 | 1 |
| Buenaventura | 6 | 7 | 1 |
| Baraya | 0 | 1 | 1 |
| Barrancas | 0 | 1 | 1 |

| | | | |
|---|---|---|---|
| Betania | 0 | 1 | 1 |
| Bituima | 0 | 1 | 1 |
| Cabrera | 0 | 1 | 1 |
| Cáceres | 0 | 1 | 1 |
| Chita | 0 | 1 | 1 |
| Chitagá | 0 | 1 | 1 |
| Municipality (cont.) | 0 | 1 | 1 |
| Cubarral (San Luis de Cubarral) | 0 | 1 | 1 |
| El Retorno | 0 | 1 | 1 |
| Garzón | 0 | 1 | 1 |
| Guachené (← Caloto) | 0 | 1 | 1 |
| Guapi | 0 | 1 | 1 |
| Guayabal de Síquima | 0 | 1 | 1 |
| Inzá | 0 | 1 | 1 |
| Jericó | 0 | 1 | 1 |
| La Victoria | 0 | 1 | 1 |
| Labateca | 0 | 1 | 1 |
| Líbano | 0 | 1 | 1 |
| Prado | 0 | 1 | 1 |
| San Juan del Cesar | 0 | 1 | 1 |
| San Rafael | 0 | 1 | 1 |
| Santa Fé de Antioquia | 0 | 1 | 1 |
| Santiago | 0 | 1 | 1 |
| Socotá | 0 | 1 | 1 |
| Totoró | 0 | 1 | 1 |
| Venadillo | 0 | 1 | 1 |
| Villagarzón | 0 | 1 | 1 |
| Aguazul | 0 | 1 | 1 |
| Balboa | 0 | 1 | 1 |
| Becerril | 0 | 1 | 1 |
| Belén | 0 | 1 | 1 |
| Cajamarca | 0 | 1 | 1 |
| Cisneros | 0 | 1 | 1 |
| Convención | 0 | 1 | 1 |
| Cumaribo | 0 | 1 | 1 |
| El Carmen de Atrato | 0 | 1 | 1 |

| | | | |
|---|---|---|---|
| El Molino | 0 | 1 | 1 |
| El Peñol | 0 | 1 | 1 |
| El Tambo | 0 | 1 | 1 |
| Frontino | 0 | 1 | 1 |
| Municipality (cont.) | 0 | 1 | 1 |
| Guachucal | 0 | 1 | 1 |
| Jamundí | 0 | 1 | 1 |
| Manizales | 0 | 1 | 1 |
| Medio San Juan | 0 | 1 | 1 |
| Páez | 0 | 1 | 1 |
| Pupiales | 0 | 1 | 1 |
| Remedios | 0 | 1 | 1 |
| Samaniego | 0 | 1 | 1 |
| San Benito Abad | 0 | 1 | 1 |
| San José de Cúcuta (Cúcuta) | 0 | 1 | 1 |
| Santa Rosa de Cabal | 0 | 1 | 1 |
| Segovia | 0 | 1 | 1 |
| Silvia | 0 | 1 | 1 |
| Suárez | 0 | 1 | 1 |
| Timbío | 0 | 1 | 1 |
| Timbiquí | 0 | 1 | 1 |
| Puerto Asís | 4 | 4 | 0 |
| Ortega | 2 | 2 | 0 |
| Córdoba | 2 | 2 | 0 |
| Dabeiba | 2 | 2 | 0 |
| La Montañita | 1 | 1 | 0 |
| San Agustín | 1 | 1 | 0 |
| Belén de Umbría | 1 | 1 | 0 |
| Cértegui | 1 | 1 | 0 |
| Guayabetal | 1 | 1 | 0 |
| Ipiales | 1 | 1 | 0 |
| Morales | 1 | 1 | 0 |
| Ovejas | 1 | 1 | 0 |
| Puerto Libertador | 1 | 1 | 0 |
| Sipí | 1 | 1 | 0 |
| Tarazá | 1 | 1 | 0 |

| | | | |
|---|---|---|---|
| Barrancabermeja | 1 | 1 | 0 |
| Buenos Aires | 1 | 1 | 0 |
| Íquira | 1 | 1 | 0 |
| La Argentina | 1 | 1 | 0 |
| Pereira | 1 | 1 | 0 |
| Pitalito | 1 | 1 | 0 |
| Sácama | 1 | 1 | 0 |
| San Pablo | 1 | 1 | 0 |
| Tadó | 1 | 1 | 0 |
| Valdivia | 1 | 1 | 0 |
| Villa Rica | 1 | 1 | 0 |
| Villarrica | 1 | 1 | 0 |
| Tibú | 1 | 1 | 0 |

Appendix C: Municipalities that exhibited an increase in the N of ELN Attacks before and after the treaty and municipalities that began to exhibit attacks following the treaty.

| Municipality | Attacks (N) Pre-treaty | Attacks (N) Post-treaty | Incidental Change |
|---|---|---|---|
| Valdivia | 0 | 6 | 6 |
| Teorama | 6 | 10 | 4 |
| El Peñón | 0 | 4 | 4 |
| Aguachica | 1 | 4 | 3 |
| Aguazul | 0 | 3 | 3 |
| Fortul | 2 | 4 | 2 |
| Buenaventura | 0 | 2 | 2 |
| Caloto | 0 | 2 | 2 |
| Campamento | 0 | 2 | 2 |
| Corinto | 0 | 2 | 2 |
| San José del Palmar | 0 | 2 | 2 |
| Soledad | 0 | 2 | 2 |
| Curumaní | 1 | 2 | 1 |
| Nóvita | 1 | 2 | 1 |
| Altamira | 0 | 1 | 1 |
| Amagá | 0 | 1 | 1 |
| Angostura | 0 | 1 | 1 |
| Arenal | 0 | 1 | 1 |
| Barranquilla | 0 | 1 | 1 |
| Bochalema | 0 | 1 | 1 |
| Caldono | 0 | 1 | 1 |
| California | 0 | 1 | 1 |
| Chimichagua | 0 | 1 | 1 |
| El Dovio | 0 | 1 | 1 |
| El Litoral del San Juan | 0 | 1 | 1 |
| Juradó | 0 | 1 | 1 |
| La Florida | 0 | 1 | 1 |
| Labateca | 0 | 1 | 1 |
| Magüí | 0 | 1 | 1 |
| Mallama | 0 | 1 | 1 |
| Marinilla | 0 | 1 | 1 |

| | | | |
|---|---|---|---|
| Puerto Nariño | 0 | 1 | 1 |
| Quibdó | 0 | 1 | 1 |
| Sácama | 0 | 1 | 1 |
| San Alberto | 0 | 1 | 1 |
| San Cayetano | 0 | 1 | 1 |
| San Martín | 0 | 1 | 1 |
| Santa Bárbara | 0 | 1 | 1 |
| Santa Rosa | 0 | 1 | 1 |
| Socorro | 0 | 1 | 1 |
| Sogamoso | 0 | 1 | 1 |
| Tamalameque | 0 | 1 | 1 |
| Támara | 0 | 1 | 1 |
| Toledo | 0 | 1 | 1 |
| Tunja | 0 | 1 | 1 |
| Uribia | 0 | 1 | 1 |
| Vetas | 0 | 1 | 1 |
| Vigía del Fuerte | 0 | 1 | 1 |
| Villa del Rosario | 0 | 1 | 1 |
| Villanueva | 0 | 1 | 1 |
| Villavicencio | 0 | 1 | 1 |
| Yarumal | 0 | 1 | 1 |
| Argelia | 1 | 1 | 0 |
| Bajo Baudó | 1 | 1 | 0 |
| Chitagá | 1 | 1 | 0 |
| Cubará | 5 | 5 | 0 |
| El Carmen | 4 | 4 | 0 |
| La Playa | 1 | 1 | 0 |
| Morales | 1 | 1 | 0 |
| Norosí | 1 | 1 | 0 |
| Ricaurte | 2 | 2 | 0 |
| Segovia | 1 | 1 | 0 |
| Sipí | 1 | 1 | 0 |

Appendix D: Top 100 municipalities with the highest percentage increase in N and Rate of Homicides before and after the treaty.

| Municipality | Department | Homicides (N) pre-peace accord | Homicide Rate pre-peace accord | Homicides (N) post accord | Homicide rate post accord | Incidental Change in Homicides (N) | Incidental Change in Homicides (Rate) |
|---|---|---|---|---|---|---|---|
| Puerto Colombia | Atlántico | 15 | 1597 | 36 | 2566 | 21 | 968 |
| Tarazá | Antioquia | 113 | 351 | 228 | 874 | 115 | 522 |
| Betania | Antioquia | 40 | 373 | 83 | 817 | 43 | 445 |
| El Peñol | Nariño | 148 | 2010 | 175 | 2342 | 27 | 332 |
| Jardín | Antioquia | 8 | 58 | 45 | 316 | 37 | 258 |
| Tibú | Norte de Santander | 137 | 380 | 254 | 594 | 117 | 214 |
| Cáceres | Antioquia | 133 | 459 | 191 | 668 | 58 | 210 |
| Venecia | Antioquia | 25 | 176 | 41 | 360 | 16 | 183 |
| Olaya Herrera | Nariño | 56 | 197 | 100 | 380 | 44 | 183 |
| Argelia | Cauca | 139 | 547 | 180 | 690 | 41 | 143 |
| Ituango | Antioquia | 78 | 308 | 116 | 438 | 38 | 130 |
| Caicedo | Antioquia | 4 | 51 | 14 | 171 | 10 | 120 |
| Bahía Solano | Chocó | 26 | 227 | 34 | 339 | 8 | 112 |
| Acandí | Chocó | 17 | 135 | 33 | 246 | 16 | 111 |
| Padilla | Cauca | 11 | 125 | 22 | 233 | 11 | 108 |
| Unguía | Chocó | 22 | 162 | 32 | 255 | 10 | 93 |
| Miranda | Cauca | 48 | 143 | 70 | 234 | 22 | 91 |
| Santa Bárbara | Nariño | 88 | 677 | 103 | 762 | 15 | 86 |
| Bucarasica | Norte de Santander | 8 | 138 | 13 | 222 | 5 | 84 |
| El Rosario | Nariño | 22 | 162 | 30 | 245 | 8 | 83 |
| Toribío | Cauca | 12 | 42 | 40 | 124 | 28 | 83 |
| Maní | Casanare | 7 | 50 | 20 | 125 | 13 | 75 |
| Marulanda | Caldas | 2 | 70 | 4 | 143 | 2 | 72 |
| Liborina | Antioquia | 3 | 32 | 10 | 102 | 7 | 70 |
| Cañasgordas | Antioquia | 19 | 108 | 27 | 177 | 8 | 69 |
| Pailitas | Cesar | 9 | 50 | 22 | 119 | 13 | 68 |
| Urrao | Antioquia | 65 | 190 | 76 | 257 | 11 | 67 |
| Hispania | Antioquia | 12 | 232 | 16 | 299 | 4 | 67 |
| Samaniego | Nariño | 127 | 238 | 127 | 303 | 0 | 65 |
| Cumbitara | Nariño | 19 | 285 | 23 | 344 | 4 | 59 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| La Jagua del Pilar | La Guajira | 2 | 72 | 4 | 130 | 2 | 57 |
| Puerto Triunfo | Antioquia | 31 | 177 | 38 | 235 | 7 | 57 |
| González | Cesar | 9 | 92 | 8 | 149 | -1 | 57 |
| Hacarí | Norte de Santander | 22 | 243 | 28 | 297 | 6 | 54 |
| Canalete | Córdoba | 11 | 70 | 20 | 124 | 9 | 54 |
| Candelaria | Valle del Cauca | 136 | 181 | 190 | 233 | 54 | 52 |
| Bojayá | Chocó | 3 | 27 | 9 | 79 | 6 | 52 |
| Ragonvalia | Norte de Santander | 3 | 51 | 6 | 102 | 3 | 51 |
| Mallama | Nariño | 14 | 160 | 19 | 211 | 5 | 50 |
| Providencia | Archipiélago de San Andrés, Providencia y Santa Catalina | 13 | 109 | 9 | 155 | -4 | 46 |
| San Juan de Betulia (Betulia) | Sucre | 4 | 32 | 10 | 77 | 6 | 45 |
| Magüí | Nariño | 11 | 74 | 22 | 119 | 11 | 44 |
| Peque | Antioquia | 8 | 109 | 12 | 153 | 4 | 44 |
| Betulia | Antioquia | 31 | 192 | 36 | 234 | 5 | 43 |
| Caucasia | Antioquia | 307 | 352 | 358 | 393 | 51 | 40 |
| El Carmen de Bolívar | Bolívar | 23 | 34 | 52 | 74 | 29 | 40 |
| Lenguazaque | Cundinamarca | 4 | 41 | 8 | 80 | 4 | 39 |
| Quipile | Cundinamarca | 1 | 12 | 3 | 47 | 2 | 35 |
| Nuquí | Chocó | 3 | 39 | 10 | 74 | 7 | 35 |
| Gigante | Huila | 13 | 52 | 21 | 85 | 8 | 33 |
| Roberto Payán | Nariño | 12 | 119 | 19 | 151 | 7 | 32 |
| San Diego | Cesar | 5 | 33 | 11 | 65 | 6 | 32 |
| Mapiripán | Meta | 27 | 221 | 17 | 253 | -10 | 32 |
| Vergara | Cundinamarca | 3 | 42 | 5 | 73 | 2 | 31 |
| San Roque | Antioquia | 24 | 122 | 32 | 152 | 8 | 30 |
| Coper | Boyacá | 3 | 72 | 4 | 102 | 1 | 29 |
| El Carmen | Norte de Santander | 19 | 153 | 23 | 182 | 4 | 29 |
| Paicol | Huila | 1 | 17 | 3 | 46 | 2 | 29 |
| Tarso | Antioquia | 12 | 158 | 13 | 186 | 1 | 29 |
| Gramalote | Norte de Santander | 2 | 26 | 4 | 53 | 2 | 27 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Quetame | Cundinamarca | 1 | 15 | 2 | 40 | 1 | 25 |
| Galeras | Sucre | 2 | 11 | 7 | 35 | 5 | 24 |
| Güicán de la Sierra | Boyacá | 2 | 43 | 3 | 67 | 1 | 24 |
| Clemencia | Bolívar | 5 | 43 | 9 | 67 | 4 | 24 |
| Pauna | Boyacá | 4 | 39 | 5 | 62 | 1 | 23 |
| Puerto Escondido | Córdoba | 9 | 38 | 14 | 60 | 5 | 22 |
| San Fernando | Bolívar | 1 | 8 | 4 | 30 | 3 | 22 |
| Ábrego | Norte de Santander | 32 | 95 | 39 | 117 | 7 | 22 |
| Jericó | Antioquia | 5 | 36 | 8 | 57 | 3 | 21 |
| Alejandría | Antioquia | 1 | 24 | 2 | 44 | 1 | 20 |
| Los Córdobas | Córdoba | 16 | 83 | 19 | 103 | 3 | 20 |
| La Peña | Cundinamarca | 1 | 14 | 2 | 34 | 1 | 20 |
| San Luis de Gaceno | Boyacá | 2 | 31 | 3 | 51 | 1 | 20 |
| Santa Ana | Magdalena | 3 | 12 | 8 | 31 | 5 | 19 |
| Guaca | Santander | 2 | 28 | 3 | 47 | 1 | 19 |
| Montebello | Antioquia | 3 | 38 | 4 | 56 | 1 | 18 |
| Curumaní | Cesar | 19 | 60 | 27 | 78 | 8 | 18 |
| La Belleza | Santander | 2 | 28 | 3 | 44 | 1 | 16 |
| Puerto Parra | Santander | 2 | 29 | 3 | 44 | 1 | 16 |
| Espinal | Tolima | 53 | 72 | 61 | 86 | 8 | 14 |
| San Carlos | Córdoba | 20 | 78 | 24 | 90 | 4 | 12 |
| Dolores | Tolima | 2 | 24 | 3 | 36 | 1 | 12 |
| Colosó | Sucre | 1 | 13 | 2 | 24 | 1 | 12 |
| San Rafael | Antioquia | 6 | 41 | 8 | 52 | 2 | 11 |
| Agrado (El Agrado) | Huila | 1 | 11 | 2 | 22 | 1 | 11 |
| Alto Baudó | Chocó | 5 | 16 | 7 | 25 | 2 | 10 |
| Arbeláez | Cundinamarca | 3 | 24 | 4 | 34 | 1 | 10 |
| Campo de la Cruz | Atlántico | 2 | 10 | 4 | 19 | 2 | 9 |
| San Antonio del Tequendama | Cundinamarca | 6 | 54 | 7 | 63 | 1 | 9 |
| Chocontá | Cundinamarca | 1 | 5 | 2 | 10 | 1 | 5 |
| Salamina | Caldas | 6 | 30 | 7 | 34 | 1 | 5 |
| El Piñón | Magdalena | 1 | 5 | 2 | 9 | 1 | 4 |
| Topaipí | Cundinamarca | 1 | 20 | 1 | 24 | 0 | 4 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Tubará | Atlántico | 3 | 24 | 4 | 27 | 1 | 4 |
| Onzaga | Santander | 2 | 34 | 2 | 37 | 0 | 3 |
| Úmbita | Boyacá | 1 | 10 | 1 | 13 | 0 | 2 |
| Santa Helena del Opón | Santander | 1 | 22 | 1 | 24 | 0 | 2 |
| Purificación | Tolima | 5 | 18 | 5 | 20 | 0 | 2 |
| Socotá | Boyacá | 1 | 10 | 1 | 11 | 0 | 1 |

Appendix E: Results of T-test analysis and mean number of homicides and homicide rate in three groups reported by INEGI.

| | Pre | Post | *t*-test | Incidental Change |
|---|---|---|---|---|
| **Homicide Rate** | | | | |
| N of Months | 24 | 60 | | |
| No Vigilantes | .83 | 2.19 | - 6.749*** | + 1.36 |
| CRAC | .26 | .42 | - 2.761* | + .16 |
| UPOEG | 2.11 | 2.80 | - 3.170** | + .69 |

Note: UPOEG established, Pre = January 2011 – January 2014, Post = February 2014 – December 2017.
*$p < .05$; **$p < .01$, ***$p < .001$ (Two-tailed test).

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| | |
|---|---|
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| 2012 | Henry Milander Scholarship Recipient |
| 2012 | Criminal Justice Department Graduate Assistantship Award - FIU |
| 2011 | Henry Milander Scholarship Recipient |

Peer Reviewed Journal Publications

Del Rio, J. (2022). Do high value target strikes reduce cartel-related violence? An empirical assessment of crime trends in Tijuana, Mexico. *Trends in Organized Crime*, 1-24.

Del Rio, J. (2020). Do vigilante groups reduce cartel-related violence? An empirical assessment of Crime trends in Michoacán, Mexico. *Studies in Conflict & Terrorism*, 1-25.

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Illustrative Study on Low Self-Control, Class Attendance, and Student Performance.