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DRUG CARTELS AND GOVERNMENT IN MEXICO: A REPLICATION AND  
EXTENSION

by

Lindsey A. Beckstead

A thesis submitted in partial fulfillment  
of the requirements for the degree

of

MASTER OF SCIENCE

in

Political Science

Approved:

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Austin Knuppe, Ph.D.  
Major Professor

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UTAH STATE UNIVERSITY  
Logan, Utah

2023

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## ABSTRACT

Drug Cartels and Government in Mexico: A Replication and Extension

by

Lindsey A. Beckstead, Master of Science

Utah State University, 2023

Major Professor: Dr. Austin Knuppe  
Department: Political Science

This paper provides background information regarding the history of cartels in Mexico, the effects of cartels on local and global environments, the actions governments have taken to curb cartel success, and whether or not these actions have proven to be successful. As well as a discussion of theories pertaining to civil war, crime, and violence.

Next, this paper introduced the article entitled Trejo, Guillermo and Sandra Ley. 2021. "High-Profile Criminal Violence: Why Drug Cartels Murder Government Officials and Party Candidates in Mexico." *British Journal of Political Science* 51(1): 203-229 and presented a replication of their figures and data.

Next, this paper proposed a research design to extend Trejo and Ley's work using their original dataset and a supplementary dataset. I gave a detailed description of the research design and a summary of my hypothesis and expected results.

(54 pages)

PUBLIC ABSTRACT

Drug Cartels and Government in Mexico: A Replication and Extension

Lindsey A. Beckstead

This paper analyzes the relationship between drug cartels and the government in Mexico. It also seeks to determine the reasons for an upsurge of violence and cartel related murders in Mexico.

## ACKNOWLEDGMENTS

I would like to thank Dr. Austin Knuppe for agreeing to chair this committee and for his kind and constructive assistance in this project. I would also like to thank my committee members, Drs. Anna Pechenkina and Anna Cohen, for their support and assistance in this process.

I give special thanks to my family, friends, and colleagues for their encouragement, moral support, and patience as I worked my way from the initial proposal writing to this final document.

Lindsey A. Beckstead

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## I. INTRODUCTION

According to Fernanda Sobrino, a Postdoctoral Researcher at the University of Chicago's Harris School of Public Policy, "drug trafficking is the second most lucrative illegal activity with an estimated global revenue of \$539 billion dollars each year" (2019, p. 2). Due to an extensive opportunity for profit and the violence associated with drug trafficking, there are numerous gaps in research pertaining to these organizations. This is consistent with most criminal organizations as they are not required to report things like employment and profits.

According to Guillermo Trejo and Sandra Ley, "One of the most surprising developments in Mexico's ongoing drug wars is the strategic decision by drug cartels to target local elected officials and political leaders for assassination" (2019, p. 203). This paper addresses two research questions. The first question is from Trejo and Ley: "Why do drug cartels murder government officials and party candidates in Mexico?" The main argument in this paper is that cartels engage in high-profile criminal violence, in order to satisfy a need or a goal. My results here are consistent with Trejo and Ley's. Officials and politicians are more likely to experience attacks during turf wars and subnational elections, when political power is fragmented, and when the number of attacks in neighboring cities increase.

My second research question is: Does the state of the unity of the government affect the presence and threat levels of cartels? This is addressed in the extension portion with a proposed research design.

This paper analyzes the relationship between governments and drug cartels in Mexico and will proceed as follows: First, I provide background information regarding

the history of cartels in Mexico, the effects of cartels on local and global environments, and the actions governments have taken to curb cartel success. The second section of this paper introduces an article by Guillermo Trejo and Sandra Ley titled “High Profile Criminal Violence: Why Drug Cartels Murder Government Officials and Party Candidates in Mexico.” I provide a summary of the article and discuss the four existing explanations as to why cartels kill subnational officials. I also include a replication of their figures, two regression tables, and a summary of their results.

Next, I propose a research design to extend Trejo and Ley’s research and answer the following research question: Does the state of the unity of the government affect the presence and threat levels of cartels? I plan to combine two data sets:

1. High Profile Criminal Violence Dataset (Trejo & Ley, 2021): measures violence against government officials and party candidates in Mexico.
2. Mapping Criminal Organizations in Mexico: State Panel 2007-2015 (Signoret et al., 2021) also referred to as MCO: maps the intensity of the presence of drug cartels in Mexico.

Then, using the government juxtaposition variable and the position/type/level of presence variable I plan to run OLS regressions in R to determine results. I expect that when the government is more divided (juxtaposed) this should be reflected in an increase in the presence of drug cartels.

Finally, this paper concludes with an explanation of ongoing data collection and the challenges associated with research pertaining to Drug Trafficking Organizations or DTOs.

## II. BACKGROUND

Mexico has a tumultuous and violent history that has not always been tainted with drugs. The Institutional Revolutionary Party (PRI) formed in 1946 and offered some much-needed stability and organization to the Mexican political landscape. The PRI did not tolerate opposition and maintained “a stable and predictable political system” until drug trafficking began to take off in Mexico (Osorio, 2016, p. 8). This background section will proceed as follows: information regarding the history of drug trafficking in Latin America, particularly Colombia and Mexico. This precedes a discussion of more recent developments in drug trafficking since the year 2000.

It has been determined by scholars that the Mexican drug trade was largely spurred by drug activity in Colombia. During the 1960s and 70s, drug consumption became more popular in the United States and drug producing areas in South America seized the opportunity to begin growing large amounts of coca and processing it into cocaine for export to the United States. This lucrative business would turn Colombian drug cartels into highly organized and well-structured businesses. Initially, Colombia designed their shipments of cocaine to go through the Caribbean, into Miami, and then into the entirety of Dade County. This area is where Colombian cartels imported 80% of their cocaine into the U.S. drug market (Gootenberg, 2010). U.S. anti-drug agencies would quickly reinforce these ports and drive the Colombians to look for other routes to traffic their drugs into the country (Aguilera-Reza & Feron, 2014).

They found a solution in Mexico and began to use Mexican mafias and gangs to carry their cocaine over the border into the United States. In the 1970's the Mexican drug trade began with the help of Colombia and “the emergence of the U.S. counter-culture movement and the breaking of the ‘French connection’ for heroin trafficking in the late-

1960s produced a significant increase in the demand for illicit drugs from Mexico” (Astorga & Shirk, 2010, p. 5). Returning U.S. Vietnam veterans also increased the demand for opium and marijuana; therefore, Mexico increased production and distribution of these two substances.

During this time, the PRI was able to maintain itself by coexisting with DTOs rather than trying to fight against them. Many government officials would become involved in the drug trade during this time. There was a clear set of rules created by the PRI that DTOs were expected to follow. According to Javier Osorio, this set of rules was called “The Decalogue” and is quoted below:

*(1) there should be no bodies on the streets; (2) criminals were not allowed to sell drugs in schools; (3) there should be no media scandals; (4) traffickers should allow periodic drug seizures and arrests of low members; (5) traffickers must generate economic revenues for their communities; (6) there should be no proliferation of gangs; (7) criminals should not pact directly with the police or the judiciary; (8) mistakes are to be punished with imprisonment by the authorities, not with execution by rivals; (9) criminals must respect territorial boundaries; and (10) profits from illicit markets should be reinvested in Mexico (2016, p. 17).*

By coexisting with drug traffickers rather than attempting to combat them, the PRI would maintain order for decades in Mexico. Eventually the PRI’s ability to control political and criminal events would wane.

Amidst allegations that the PRI was rigging elections, changes in the criminal and political environment in Mexico would dismantle the PRI and throw Mexico back into their previous state of disorder. In the mid-1980’s, the U.S. would experience what Osorio referred to as a “crack epidemic,” which would grow DTOs in Columbia and Mexico (2016, p. 19). During the crack epidemic there was an upsurge of violence in

both the United States and Mexico. Many people believed that the sudden increase in violence was due to “the growth of the crack markets in that decade and played a role in the development of draconian penalties for possession of that drug” (Reuter, 2009, p. 2).

While PRI was managing the situation in Mexico, things started to fall apart in Colombia. Colombian cartels posed a major threat to the governments of North and South America and eventually, with some help from U.S. intelligence agencies, “the government in Colombia started carrying out a strategy to battle the criminal organizations by targeting the main leaders of the cartels” in order to make their organizational structures and leadership systems fail (Aguilera-Reza & Feron, 2014). This tactic, which would later be called “kingpin capture strategy” had some unfortunate consequences. Not only does kingpin strategy result in higher rates of violence, the removal of a mid-level lieutenant from the cartel structure has been shown to increase kidnapping rates as well (Jones, 2013).

Now that the Colombian cartels had been dismantled, there was an immense demand for these drugs with no one left to fill it. Scholars Tomas Kellner and Francesco Pipitone go as far as to say that the “Mexican problem” is a direct result of the successful takedown of “the Cali and Medellín drug cartels,” in Colombia during the 1990s (2010, p. 29).

In the 1990s, Mexico saw the opportunity to fill the gap in the market left by the disappearing Colombian cartels. This period of time would create some of the most famous cartels of all time including the Sinaloa cartel, Guadalajara cartel, Juarez cartel, and the Tijuana cartel. What began as simple transportation of drugs by families would soon transform into “drug cartels in larger regional areas and then into polygot criminal

organizations" (Bunker, 2013, p. 130). Drug cartels and other lawless groups, such as the mafia, exhibit certain traits such as, "structure/hierarchical organization, continuity, violence or use of force, entrance requirements, illegal businesses, penetration into legitimate businesses, ideology, and corruption" (del Pilar Fuerte Celis et al., 2019, p. 189). While mafias and cartels do have a lot in common, it is important to note that, traditionally, the major difference is a cartel's focus on producing and smuggling narcotics.

Each of the cartels in Mexico today can trace their roots back to a cartel that became active in the 1980's. During this time, the Mexican government also began to dismantle their security forces. People who were dismissed from their security jobs would turn to the DTOs for employment. Disbanding the security forces also eliminated the government's biggest and best resource in combating cartels. The final blow to the PRI would come in the form of democratization. Mexico's democratic transition was unique in that it was "characterized by a gradual liberalization derived from the interaction between the party system and the electoral system" (Osorio, 2016, p. 22). Eventually opposition parties would succeed in bringing electoral reform to Mexico, at the expense of weakening state institutions.

In the 1990s and early 2000s, PRI began to lose elections, and "the subnational party alternation in gubernatorial power...led to the breakdown of informal networks of government protection forged under the PRI" (Trejo & Ley, 2020, p. 160). It was during this time that the drug cartels would look for their own ways to manage enforcement and began to heavily arm themselves. The head of the Golfo Cartel, Osiel Cardenas-Guillen, "co-opted a division of the Mexican army's best trained Special Forces unit" (Paoli,

2014, p. 208). This unit was plagued by resignations and defections; however, the Golfo Cartel also recruited civilians for their other armed wing known as the Zetas. The Zetas are one of the most violent armed groups existing in Mexico today.

Although the first presidential victory for The National Action Party (PAN) took place in 2000, it was the 2006 election of President Felipe Calderón (2006-2012) that would disrupt Mexico's political landscape. Only ten days after his inauguration, Calderón began the first of many military deployments in his declared War on Drugs. This was an attempt to quell the inter-cartel violence that had been taking place among the five major cartels (Tijuana, Juárez, Sinaloa, Gulf, and La Familia Michoacana) for the past two decades (Trejo & Ley, 2020, p. 158-160, Reuter, 2009, p. 3-4). Felipe Calderón, made official statements regarding their intentions to crackdown on cartels and begin combatting DTOs in earnest. Mexican officials began to target cartel leadership in an attempt to dismantle DTOs. Governments began to use the "kingpin capture strategy," where they specifically targeted the leaders of cartels, after seeing its success in breaking down cartels in Colombia (Calderón et al., 2015, p. 1457).

Although the removal of cartel leadership is largely regarded as an effective strategy in combating cartels, the decapitation of leadership would also result in increased violence all over the country and drive cartels into a vital period of fragmentation. This period of fragmentation is what would create armed wings of the cartels. With the government fighting back now, it was vital that the cartels find some way to defend themselves. This turned out to be remarkably easy because as "the drugs flow north, fueled by American demand. The guns, widely available in Texas, flow south. Soon, most cartels possessed armed branches similar to Los Zetas (Malkov, , p. 8).



According to the Council on Foreign Relations, Mexico has counted over three hundred thousand homicides since 2006 (2021). In 2019 alone, “Mexico’s national public security system reported more than 34,500 homicides” (Beittel, 2020). It has been determined that the vast majority of this violence is inflicted on gangsters and other cartel members (Crandall, 2014), however; in recent years, cartels have expanded their illegal activities to include not only drug trade and homicide, but also kidnapping, extortion and oil theft. In the past nine months, there have been reports of a surge of violence against tourists in the state of Quintana Roo. This state, which is home to popular tourist destinations like Cancún and Tulum, has turned into a breeding ground for cartel turf wars which have so far killed at least three tourists (Malkin, 2022).

In the United States, cartel violence committed against tourists in Mexico consistently makes news headlines; however, some of the most vulnerable groups in Mexico are migrants and the poor. In the 1960s and 70s, “poor and rural communities in Latin American and Caribbean countries started to see the chance of exporting marijuana to the United States as the revenues [were incredibly high],” (Aguilera-Reza & Fearon, 2014). According to researcher Paola Iliana de la Rosa Rodríguez, since 2010 there has been an increase in the flow of migration through Central America and, “migration occurs despite knowing that they will end up facing an unfavorable and unhappy environment in Mexican territory” (p. 2, 2022). Once in Mexico, cartels take advantage of these immigrants and, “have even succeeded in corrupting Mexican authorities who allow the former to perpetrate crimes or even collaborate in committing crimes against immigrants” (de la Rosa Rodríguez, p. 2, 2022). The poor are equally as vulnerable as

migrants. In May of 1984, a group of bishops, interviewed by Mexican journalist Manuel Buendía, were quoted saying:

*Poverty was increasingly luring (indigenous) peasants into the production of marijuana and poppies, after which they became trapped in a production and trafficking system run by domestic and international mafias; money and violence have enabled these mafias to become powerful actors and take 'practical control of people's lives'; the capacity to exercise social, economic and coercive power with impunity 'is itself inexplicable unless one assumes the direct or indirect complicity of senior public officials at both the state and federal levels'; finally, the bishops were deeply concerned about clandestine trafficking networks exerting more and more political influence (Pansters, 2018, p. 315).*

Today, cartels not only use violence and crime to target their competitors in the drug trafficking world, but they have also begun to target journalists and government officials. Mexico's drug war has killed "more than 100 Mexican journalists since 2000, while 30,000 people have disappeared all together" (Grillo, 2018, p. 15). The violence against journalists became so severe that, "journalism professors began pushing students to cover politics or sports— or if they must cover crime, to avoid picking sides in the drug wars (D'Amato, 2015, p. 22). Mexico is a dangerous place to work in media due to the fact that more than "200 media workers have disappeared or been killed since 2000" (Sobrinho, 2020, p. 20). Cartels have a desire to control and manipulate the media in order to maintain control over the civilian population and the information they receive.

The violence exhibited towards journalists has also affected government officials and the state itself. Cartels do this in order to gain more resources and influence state policies (Lessing, 2012). According to Robert C. Bonner, between 2007 and 2012, "cartels have assassinated 32 mayors and 83 police chiefs" (2012). . Due to the violent nature of DTOs, there have been attempts to classify them as terrorist organizations; however, although DTOs do exhibit some aspects of ideology, they "appear to lack a

discernible political goal,” which is part of the definition of terrorism (Beittel, 2020, p. 2-3).

While DTOs are not officially classified as terrorist organizations, there are many similarities between the two. For example, there have been many bombings by not only cartels in Colombia in the late 1980s and early 1990s, but also by the Sicilian Mafia in 1993 and OGCs in Russian where the “first car bomb to hit Moscow came in 1994” (Phillips, 2018, p. 53). The term “Narco-Terrorism,” which is defined as the “use of terror tactics by the narco-traffickers and drug lords to protect their illegal business,” was first used in 1983 by Belaunde Terry, a former Peruvian president and is becoming more widely used today (Teiner, 2020, p. 84). Scholars have coined other terms like “Narco-Terrorism” to aid in the discussion of these organizations, but the most widely used term is “Criminal Insurgency.” The concept of Criminal Insurgency argues that behavior exhibited by cartels attempts to weaken the state that they are operating in to gain “support and legitimacy within their own organizations and the geographical areas they control” (Teiner, 2020, p. 87).

Although there are ways to resist narco-rule, particularly when “indigenous customary laws and traditions provide communal accountability mechanisms that make it harder for narcos to take control over indigenous villages,” it is not always in the best interest of ordinary citizens to fight narco-rule (Ley et al., 2019, p. 182). Unbeknownst to many, drug cultivation and trafficking are deeply embedded into Mexican culture and even further involved in the economy. Drug trafficking in Mexico helps to “stabilize the peso, and directly or indirectly provide[s] thousands of jobs, many in underserved regions desperate for a way out of poverty” (Crandall, 2014, p. 235). It is also important to note

that cartels have capitalized on publicity using violence “involving particularly gruesome images of beheadings, bodies hanging from bridges and audacious grenade attacks on public buildings. The amount of violence seen on a regular basis by Mexican citizens strengthens the connection between Mexican life and drug violence (Hiskey et al., 2020).

Drug violence, although proven to be rather seasonal, has claimed thousands of lives in Mexico and researchers continue attempting to find answers (Martínez & Phillips, 2021, p. 68). It is clear that the war on cartels organized by President Felipe Calderón was unsuccessful and only resulted in more violence. Things would change when Andrés Manuel López Obrador was elected as president in 2018. He quickly called for an end to the drug war and began a process of “desecuritization.” Desecuritization occurs when a government chooses to shift “issues out of emergency mode and into the normal bargaining process of the political sphere” (Buzan, Waever and De Wilde, 1998 as cited in Gámez, 2022, p. 120). Obrador held the position that DTOs were not a grave security problem as Calderón suggested, but were instead “a symptom of economic and social injustice in Mexico,” and should be resolved in the normal political sphere (Gámez, 2022, p. 119). While this seems like a logical solution to the problem, the changes made by Obrador have shown no evidence of reducing the violence in Mexico. In fact, researcher Erin Huebert attempted to show that criminal procedure reform can decrease violence, however; she uncovered that in “Mexican drug states— where drug cartels challenge the state’s monopoly of violence— criminal procedure reform has no effect, in the short or the long run, on homicides,” and more research is needed to determine the correct course of action (2019, p. 46).

Empirical studies of the violence in Mexico have been framed by three relevant theories on the economics and sociology of crime. According to Trejo and Ley, these three theories have framed empirical studies thus far:

*(1) competition in criminal markets stimulates criminal violence (Schelling 1971; Buchanan 1973); (2) criminal groups engage in violence when they have access to guns (Dube, Dube, and García-Ponce 2013) and to foot soldiers (Sampson 1993); and (3) organized criminal groups emerge where the state is weak (Gambetta 1996; Skaperdas 2001) and become violent when it represses poorly (Lessing 2015 as cited in Trejo & Ley, 2020, p. 85).*

### III. THEORY

Before continuing with the replication, it is important to note some of the important research and theories surrounding civil war, crime, and violence. Scholars of civil war, James Fearon and David Laitin, note that the practice of insurgency, which they define as “a technology of military conflict characterized by small, lightly armed bands practicing guerrilla warfare from rural based areas,” is the condition most likely to lead to civil violence (2002, p. 3). While has civil war has not officially declared in Mexico in recent years, the country certainly meets the three criteria of a civil war presented by Fearon and Laitin:

*(1) They involved fighting between agents (or claimants to) a state and organized, non-state groups who sought either to take control of a government, take power in a region, or use violence to change government policies (2) The conflict killed or has killed at least 1000 over its course, with a yearly average of at least 100 (3) At least 100 were killed on both sides (including civilians attacked by rebels).*

American economic and foreign policy expert Thomas Schelling attempts to determine the difference between crime and organized crime. He notes that, “there may

be highly organized and well-disciplined groups of burglars, or counterfeiters, or bank robbers, or embezzlers, or charlatans, or agitators,” but what turns these individuals into an Organized Criminal Group (OGC) is the desire to govern and/or operate legitimately outside the bounds of the state to which they belong (1984, p. 181).

This desire to govern is what draws OGCs into the political arena and out the criminal underworld where they would presumably prefer to operate. This is not a Mexico specific phenomena. In fact, “organized crime has emerged as an important political player in numerous countries by building highly resilient organizations, accumulating vast resources, and marshaling the effective use and threat of violence (Barnes, 2017, p. 967). Previous research on organized crime has focused on Italian mafias, American mafias, the Yakuza in Japan, the Triads in Hong Kong, and drug-cartels in Colombia, Mexico, and Brazil (Gambetta, 1993; O’Donnell, 1993; Arias, 2006).

It is crucial to mention that, according to researchers, illegality does not breed violence. Richard Snyder and Angelica Durán-Martinez determine that certain illicit activities result in more violence than others. For example, poaching in Namibia and South Africa result in little to no violence while poaching in the Democratic Republic of Congo, Kenya, and Zimbabwe are associated with high levels of violence. This is largely due to the style of response to the crime by each government, but drug-violence in Mexico was also largely non-existent before the 1980s due to their minimal response (2009, p. 253-254). So, if illegality does not automatically result in violence why are most OGCs associated with high levels of violence?

German economist and sociologist Max Weber states that “the relationship between the state and violence is an especially intimate one” (1919, p. 77). OGCs seek to dominate the political landscape so they can operate without constraints, but this clearly creates tension between the criminal group seeking power and any state-sponsored government already in place. In other research on organized crime it has been asserted that complete “passive acquiescence of crime is rarely advocated,” and “benign neglect of syndicated crime will not suffice” (Buchanan, 1974, p. 121; Backhaus, 1979, p. 631). It is most common that the state will then respond in an attempt to enforce the laws of the land. Enforcement in itself can be a tricky thing for governments to navigate. Research has shown that, “the optimal amount of enforcement is shown to depend on, among other things, the cost of catching and convicting offenders, the nature of punishments— for example, whether they are fines or prison terms— and the responses of offenders to changes in enforcement” (Becker, 1974, p. 2).

In the case of Mexico, certain scholars have presented different theories on the relationship between territorial control and organized crime. Robert D. Sack defines territoriality explicitly as “the attempt by an individual or group to influence, affect, or control objects, people, and relationships by delimiting or asserting control over a geographic area,” with the area in question being referred to as “territory” (Sack, 1983, p. 56). It is important for cartels to select the right geographic area and because of this, impoverished communities, which are often in need of resources and jobs that cartels provide, tend to be the most at risk. Territory is especially important in the discussion of OGCs because “local communities provide a known set of resources for criminal groups, as well as a ready market for goods and services” (Clark et al., 2021, p. 247).

Next, I will introduce the article titled “High-Profile Criminal Violence: Why Drug Cartels Murder Government Officials and Party Candidates in Mexico,” by Guillermo Trejo and Sandra Ley. I will summarize relevant theories as well as the variables being measured and hypotheses presented by the two authors. I will conclude this section with a replication and discussion of their figures and results.

The authors chose to study high-profile criminal violence due to its strange nature. Drug cartels, like any criminal group, should presumably prefer to stay out of the public eye (Durán-Martínez, 2017; Gambetta, 1993 as cited in Trejo & Ley, 2021, p. 204). When drug cartels make the conscious decision to attack elected officials, they act contrary to this assumption. Guillermo Trejo and Sandra Ley attempt to answer why drug cartels are willing to take this risk and the motivation behind this type of violence.

Before Trejo and Ley present their own hypotheses and data, they discuss four relevant mechanisms to explain the phenomena of high-profile criminal violence. These four mechanisms and their associated literature are discussed below.

The first phenomena is the repression hypothesis. This hypothesis has its roots from the University of Chicago’s Benjamin Lessing. In his previous work, Lessing (2015) attempts to explain conflict between the cartels and the state. He argues that when state repression becomes too much cartels retaliate against the state. If this hypothesis holds true then cartels murder government officials due to repressive policies and “crackdowns.” This idea is further supported by the previous discussion on optimal enforcement, and the consequences of too much or too little enforcement.

Next is the competition hypothesis. This hypothesis presumes that drug cartels will use lethal force to “punish mayors who offered protection to their rivals or to coerce



future authorities to protect them” (Trejo & Ley, 2021, p. 206). This hypothesis is supported by another study linking an increase in cartel competition to an increase in the assassination of mayors (Ríos, 2012).

Then, there is the rent-seeking hypothesis. This hypothesis argues that cartels attack the state as a way to capture more resources or “rents.” These rents in turn, allow the cartel to continue to fund violence and conflict with the state.

Finally, there is the criminal governance hypothesis. This final hypothesis is the one Trejo and Ley pursue and develop. This concept was introduced by Gambetta (1993) in studies on the mafia as an Organized Criminal Group (OGC). It was further developed by Enrique Arias in his book *Criminal Enterprises and Governance in Latin America and the Caribbean* (2017) and previously by John P. Sullivan in his article titled, “From Drug Wars to Criminal Insurgency: Mexican Cartels, Criminal Enclaves, and Criminal Insurgency in Mexico and Central America. Implications for Global Security” (2011). Sullivan argues that cartels will battle amongst themselves in the pursuit of state domination (Sullivan, p. 12, 2011). Trejo and Ley use this theory to support their main claim that:

*When drug cartels are engaged in intense military conflicts with the state and rival OCGs, drug lords will have incentives to launch attacks against local authorities and political actors not only to gain protection or capture public rents but, more fundamentally, to gain control over local government structures and thence over local populations and territories (2017, p. 211).*

The dependent variable is the likelihood of high-profile criminal attacks. The dependent variable in this model, unlike other similar studies, includes attacks not only

against mayors but attacks against government officials, party candidates, and party activists as well. Trejo and Ley also chose to collect data on not only murders, but a larger variety of criminal activity including kidnapping, public threats, and any assassination attempts whether they were successful or unsuccessful. Again, Trejo and Ley are trying to determine which factors increase or decrease the odds of high-profile attacks.

The independent variables in this model are turf wars, vertical partisan fragmentation, and subnational election cycles. Each independent variable has a corresponding mechanism: Turf Wars represent the need for cartels to be protected (not repressed) by local governments. This variable is measured using the drug-related murder rate per 1,000 people (CVM) and the drug-related murder rate from the government database. These two databases aggregate “murders committed by OCGs, both as a result of state-cartel and inter-cartel conflicts,” which is why it is the chosen way to measure turf wars (Trejo & Ley, 2021, p. 215).

Vertical Partisan Fragmentation is a way for the authors to measure the amount of vulnerability within the local government. This is measured using the Juxtaposition Index. The index has values ranging from 0 to 8 with each number representing a different party configuration. The first entry represents the party of the president, the second entry represents the party of the state gubernatorial office (governor), and the third entry represents the party ruling the municipality. There are three major parties in Mexico: PAN, PRI, and the PRD. PAN represents The National Action Party (Right). PRI is the Industrial Revolutionary Party (Center) and PRD stands for the Democratic Revolutionary Party (Left).

0. PAN-PAN-PAN
1. PAN-PAN-PRI
2. PAN-PAN-PRD
3. PAN-PRI-PAN
4. PAN-PRI-PRI
5. PAN-PRI-PRD
6. PAN-PRD-PAN
7. PAN-PRD-PRI
8. PAN-PRD-PRD

It is the general consensus that unified governments are stronger than fragmented ones. Trejo and Ley believe that cartels look for these cracks in fragmented governments and exploit them in order to form criminal governance regimes. The authors also hypothesize that the party fragmentation during this time allowed for the incumbent party and its president to purposefully neglect the needs of leftist (PRD) states.

The third independent variable, Subnational Election Cycles, is defined in this article as, “when new governments come in and new administrative appointments are made” (Trejo & Ley, 2021, p. 213). This presents an ideal opportunity for cartels to interfere in their local governments. This independent variable is measured using a dummy variable to “identify years of gubernatorial and/or municipal elections and years of national legislative and presidential elections” (Trejo & Ley, 2021, p. 215).

While building on the theory of criminal governance, Trejo and Ley present four hypotheses:

*H<sub>1</sub>: Local officials and politicians are more likely to become targets of criminal attacks in municipalities experiencing the most intense levels of state-cartel and inter-cartel violence.*

*H<sub>2</sub>: Local authorities are more likely to become targets of criminal attacks in subnational regions where political power is more vertically fragmented– that is, where subnational officials belong to a party that is an ideological rival of the president’s party.*

*H<sub>3</sub>: Local authorities and politicians are likely to become targets of criminal attacks during subnational election cycles (2017, p. 212-13).*

*H<sub>4</sub>: High-profile attacks become more likely as the number of attacks in neighboring municipalities increases.*

#### IV. REPLICATION

Using resources, the authors made available on *Harvard Dataverse*, I was able to conduct a replication of the figures and tables in this article using the original data and the statistical software *STATA*. I will present my replicated findings in the same order as the original authors along with a brief summary of each figure or table. Figure 1 is a line graph representing the rise of criminal attacks against elected officials.

**Figure 1**

*Evolution of Criminal Attacks Against Government Officials and Party Members, 1995-2012*

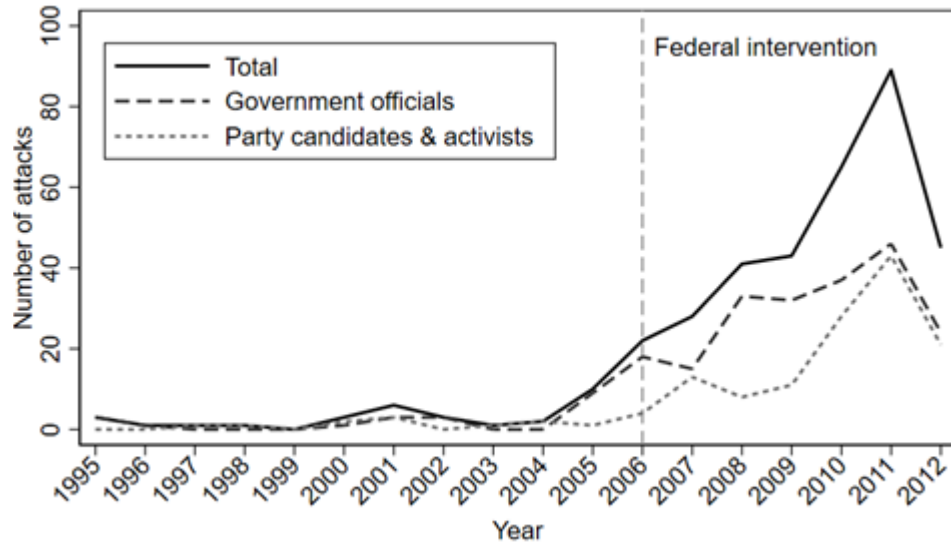


Figure 2 is a bar graph that displays criminal attacks by their chosen targets and levels of government: i.e. federal, state, and municipal.

**Figure 2**

*Criminal Attacks by Target and Level of Government, 2007-2012*

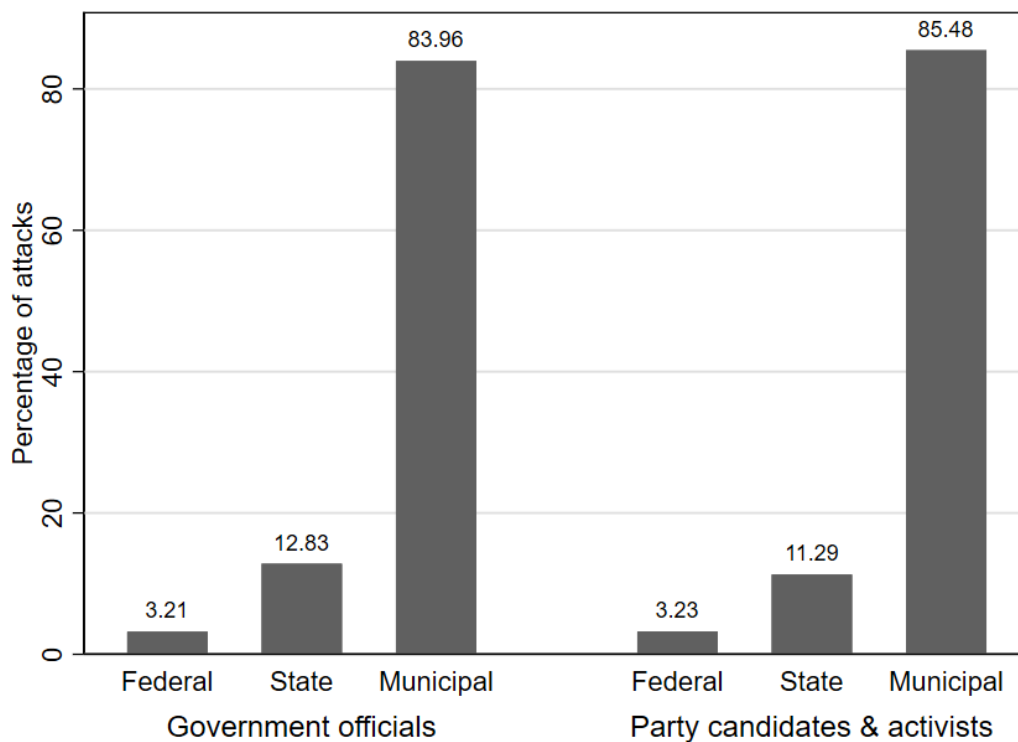
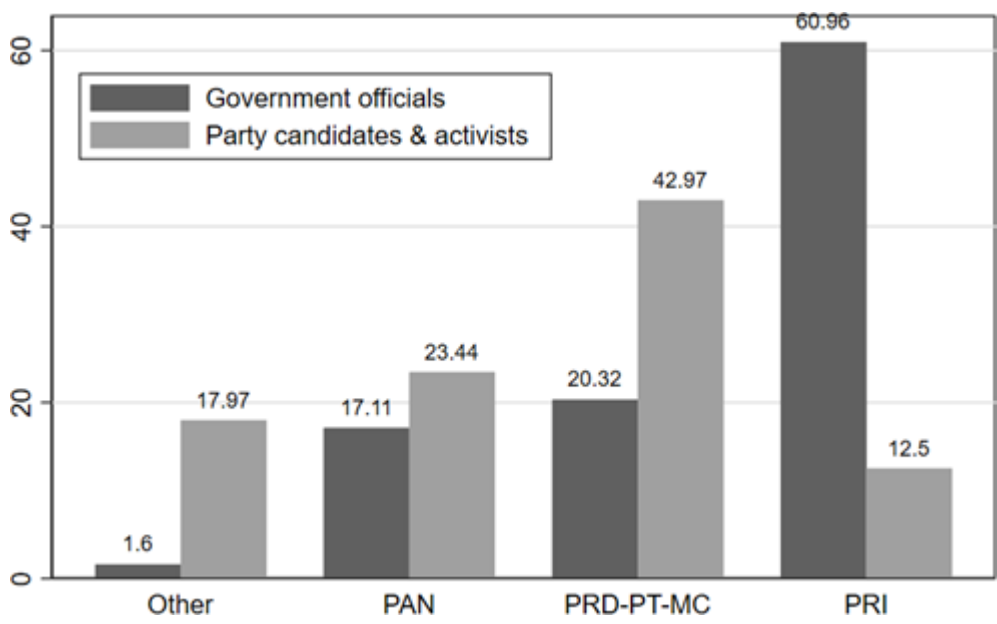


Figure 3 is quite similar to Figure 2 with one major difference. Where Figure 2 shows criminal attacks by target and level of government, Figure 3 shows criminal attacks by target and party as opposed to the level of government.

Figure 3

*Criminal Attacks by Target and Party, 2007-2012 (%)*



**Figure 4**

*Municipalities Ruled by Political Party Compared to Targeted Government Officials and Party Members, 2007-2012*

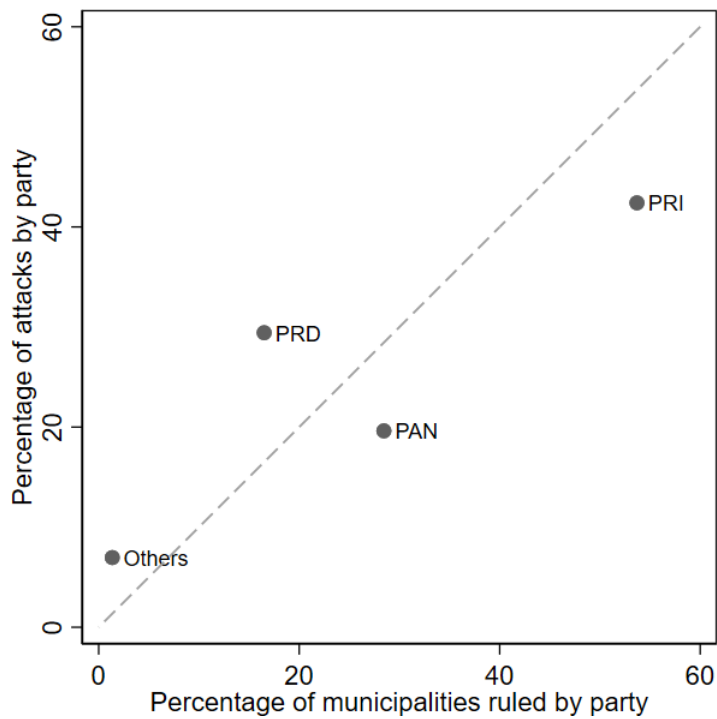


Figure 4 gives the reader a better understanding of the role of political parties in attacks. This figure illustrates the number of municipalities ruled by a certain party compared to the targeted officials and activists.



Figure 5

*Criminal Attacks and Local Election Cycles*

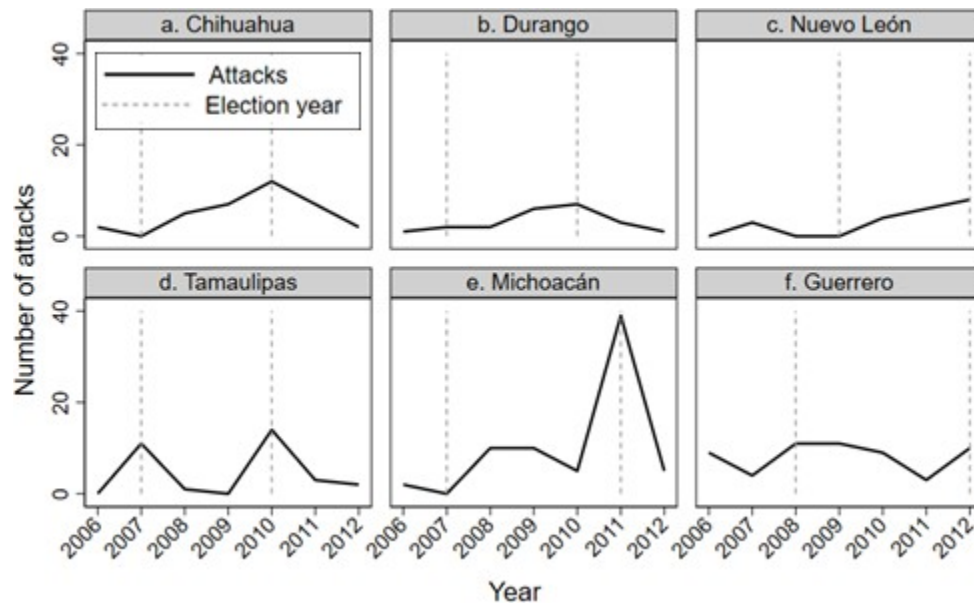


Figure 5, shown above, is the number of attacks that took place in six different Mexican states: Chihuahua, Durango, Nuevo León, Tamaulipas, Michoacán, and Guerrero. This figure shows that there is an electoral connection to the attacks that occur.

## Tables and Results

The first table I was able to replicate is the juxtaposition table. My replicated juxtaposition table uses the party configurations. The only value Trejo and Ley chose to display in their article is the percent values. These are the percentages of Mexican municipalities that have each type of party configuration.

**Table 1.** Layering of parties in Mexico's three levels of government, 2007 - 2012

Party Labels	Percentage of Municipalities
PAN-PAN-PAN	11.30
PAN-PAN-PRI	9.93
PAN-PAN-PRD	2.34
PAN-PRI-PAN	14.26
PAN-PRI-PRI	36.23
PAN-PRI-PRD	8.29
PAN-PRD-PAN	3.29
PAN-PRD-PRI	8.27
PAN-PRD-PRD	6.11

The replications of the rest of the tables were far more difficult. In this particular study, Trejo and Ley calculate not only the coefficients for their negative binomial regression models, but they also transform their coefficients to give an incidence rate ratio (IRR). Incidence rate ratios help to compare rates between two different groups. In this case, the authors are attempting to discover whether or not exposure to their variables increases or decreases incidences of drug-related murders. IRR values are what I will use to interpret results. In order to accurately replicate the tables, I created two separate tables, one for the coefficients and one for the IRR values. Then, I ran the same code for both models. It was necessary for the authors to use two models here as they are working with two data sets to try to determine a total number of incidents. Model 1 uses data collected from newspapers to calculate a drug-related murder rate per 1,000 people (*cvmr1000*). As stated before, I, like Trejo and Ley, will use the IRR not the coefficients to interpret results. Table 2 represents the effects of turf wars on high-profile criminal attacks. My regression results are presented below.

My replicated results are consistent with the results from the authors. These results provide support for Hypothesis 1. Both models one and two show that when cartels are fighting with the state and amongst themselves, the odds of high-profile criminal violence increase. Using the following formula and the IRR values, I can calculate a percentage change in odds:  $(IRR - 1) \times 100$ . Therefore, according to Model 1 for every additional drug-related murder per 1,000 residents, the odds of high-profile criminal attacks increase by 33.4 percent. Model 2 shows a similar story with an odds increase of 54.5 percent. Some of the results for the controls are also statistically significant and are interpreted below. Fiscal revenue is unsurprisingly an important factor

here. For every percentage increase in revenue that comes from local tax revenue, the probability of high-profile attacks increases by 4.5% in Model 1 and 5.3% in Model 2. This table also shows that the probability of attacks increases drastically due to state election competition with a Model 1 value of 93% and a Model 2 increase in the probability of attacks by 132%. On the other hand, municipal electoral competition causes a decrease in the probability of high-profile attacks by 33% in Model 1 and 38% in Model 2.

In both models, the same variables are significant: fiscal revenue, municipal electoral competition, state electoral competition, and the geographic region. The significance of these variables do not provide any evidence to reject the hypotheses and will be supported further by the results in Table 3.

**Table 2.** Turf wars and high-profile criminal attacks, 2007-2012 (random effects negative binomial models)

	Model 1		Model 2	
	Coeff.	IRR	Coeff.	IRR
<b>Turf wars</b>				
Drug-related murder rate CVM <sup>^</sup>	0.288*** (0.075)	1.334		
Drug-related murder rate Gov. <sup>^</sup>			0.435*** (0.078)	1.545
<b>Controls</b>				
Fiscal Revenue	0.044*** (0.013)	1.045	0.051*** (0.013)	1.053
Prosecutor offices <sup>^</sup>	0.919 (1.286)	2.506	0.165 (1.373)	1.179
Mun. alternation	0.009 (0.153)	1.009	0.005 (0.161)	1.006
St. alternation	−0.108 (0.192)	0.897	0.022 (0.202)	1.022
Mun. electoral competition	−0.394*** (0.129)	0.674	−0.474*** (0.138)	0.622
St. electoral competition	0.658*** (0.276)	1.931	0.842*** (0.292)	2.322
Geographic regions	YES		YES	
Constant	−1.588** (0.721)		−1.676** (0.772)	
Observations	9,853		8,959	
Number of municipalities	1,995		1,995	
Log-likelihood	−1,093.954		−990.2702	
BIC	2,335.037		2,126.147	

<sup>^</sup>per 1,000 inhabitants

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.10

The replication of Table 3 worked exactly as the replication of Table 2. This table presents regression results taking into account the independent variables of vertical partisan fragmentation, election cycles, and territorial ambition.

**Table 3.** Governance opportunities and high-profile criminal attacks, 2007-2012 (random effects negative binomial models)

	Model 1		Model 2	
	Coeff.	IRR	Coeff.	IRR
<b>Turf wars</b>				
Drug-related murder rate CVM <sup>^</sup>	0.243*** (0.069)	1.275	0.251*** (0.070)	1.285
<b>Vertical partisan fragmentation</b>				
PAN-PAN-PRI	0.393 (0.460)	1.481		
PAN-PAN-PRD	-0.097 (1.076)	0.908		
PAN-PRI-PAN	0.418 (0.416)	1.519		
PAN-PRI-PRI	0.662* (0.382)	1.938		
PAN-PRI-PRD	0.357 (0.514)	1.429		
PAN-PRD-PAN	1.334** (0.528)	3.795		
PAN-PRD-PRI	1.675*** (0.430)	5.339		
PAN-PRD-PRD	1.765*** (0.427)	5.844		
Juxtaposition index			0.215*** (0.427)	1.240
<b>Election cycles</b>				
Local election	0.495*** (0.140)	1.640	0.476*** (0.141)	1.609
Federal election	-0.486** (0.237)	0.615	-0.573** (0.246)	0.564
<b>Territorial ambition</b>				
Attacks in adjacent neighbors t-1	0.343*** (0.069)	1.409	0.344*** (0.070)	1.411
<b>Controls</b>				
Fiscal Revenue	0.048*** (0.012)	1.049	0.050*** (0.012)	1.051
Prosecutor offices <sup>^</sup>	0.596 (1.271)	1.815	0.606 (1.281)	1.832
Mun. alternation	0.052 (0.155)	1.053	0.025 (0.151)	1.025
St. alternation	-0.065 (0.195)	0.937	-0.045 (0.194)	0.956
Mun. electoral competition	-0.304** (0.129)	0.738	-0.331** (0.130)	0.718
St. electoral competition	0.088 (0.310)	1.092	0.186 (0.300)	1.204
Geographic regions	YES		YES	
Constant	-2.367*** (0.817)		-2.469*** (0.760)	
Observations	9,853		9,703	
Number of municipalities	1,995		1,991	
Log-likelihood	-1,058.508		-1,049.957	
BIC	2,365.295		2,283.518	

<sup>^</sup>per 1,000 inhabitants

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.10

Table 3 provides support for the rest of Trejo and Ley's hypotheses. The results in Model 1 show that "cartels conducted high-profile attacks in politically neglected states

where mayors presumably could not count on federal protection” (Trejo & Ley, 2021, p. 216). Using the same formula from Table 2,  $(IRR - 1) \times 100$ , I can then determine the percentage change in odds. The authors focus specifically on PAN opposition cities from leftist states. This consists of the last two-party configurations in Table 3 where the state office is held by PRD and the municipality office is held by either opposition party (PRD or PRI). When one looks specifically at these two cases, we find the support Hypothesis 2. It is clear that governors and mayors from leftist states were 434 percent and 484 percent more likely to experience an attack than their conservative counterparts.

Table 3 also provides support for Hypothesis 3. The results for election cycles are significant with municipalities being 64 percent (Model 1) and 61 percent (Model 2) more likely to experience attacks during local election cycles. During federal election cycles there was a 44 percent decrease in attacks. The authors interpret this to mean that cartels are interested in using violence to control and influence local governments, but show little to no interest in the federal government.

Finally, Table 3 also provides support for Hypothesis 4. The results are again, consistent with the logic of subnational territorial control: “for every attack experienced by a municipality in year  $t$ , the likelihood of an attack among adjacent neighbors increased by 41 percent” (Trejo & Ley, 2021, p. 219). The authors believe this shows that cartels are interested in controlling entire networks, not just single cities.

It is also important to note that in this analysis the authors state that there is “nothing unique about leftist municipalities” (Trejo & Ley, 2021, p. 217). They did not discover a shared attribute among all leftist states. In other words, not all leftist states were created equal and “the raw data show that PRD municipalities experienced one

attack in PAN states, eight attacks in PRI states and forty-nine attacks in PRD states” (Trejo & Ley, 2021, p. 217). Trejo and Ley believe that it is unlikely leftist PRD governors would purposefully leave their allies and claim that this phenomenon is “consistent with the logic of intergovernmental partisan conflict in a context of extreme polarization between Right and Left” (Trejo & Ley, 2021, p. 217).

As with any empirical analysis, it is important to consider omitted variables, interactions, etc. In Table 4, Trejo and Ley test “whether the impact of the political variables on attacks is conditional on the intensity of turf war violence” (2021, p. 219). Trejo and Ley account for interaction effects in this table and were still able to conclude that the political factors tested do have an independent effect on the odds of high-profile criminal attacks.

### **Case Study**

In order to address endogeneity concerns, Trejo and Ley conduct case studies in the states Michoacán, Guerrero, and Guanajuato, all of which are neighboring states. Although these places are neighbors and share “important geographic, socio-demographic, culture, and economic similarities,” they experienced completely different experiences from 2007-2012 (Trejo & Ley, 2021, p. 221). One of the most important differences between municipalities in these states was that Guerrero and Guanajuato had conservative governors, who coordinated with and were supported by the ruling PAN party in the federal government, while Michoacán and its leftist governor was left vulnerable to attacks. Trejo and Ley are able to conclude that because one region “had a leftist governor and another a conservative governor is an exogenous factor that led the two regions into different trajectories of attacks” (2021, p. 223).



## **Conclusion**

This section of the paper sought to answer the question of why drug cartels murder government officials and party candidates in Mexico. Trejo and Ley hypothesized and concluded that drug cartels are more likely to partake in this form of violence when there is already violence occurring between cartels and the state, when political parties are vertically fragmented, when there is a subnational election cycle, and when neighboring states or municipalities are experiencing similar attacks.

My biggest criticism of this article is that it focuses primarily on the violence that occurred and did not seek to measure cartel “success” or presence. Although drug cartels are known to be violent organizations, the number of murders and attacks are not enough to truly determine the presence or success of the cartel. I address this concern in my extension.

## V. EXTENSION

Replicating the data and figures presented by Trejo and Ley allowed me a chance to look closely at the relationship between government and cartels, but more questions need to be answered. This section of the paper discusses my motivation for extending the research done by Trejo and Ley followed by a research design to extend their previous research.

### **Motivation**

As a longtime student of Latin American politics, I always question the variables that go into the experiments and data collection of the experiments I study and conduct. It is incredibly important for me that my research can be applied to policy. As stated before, my issue with Trejo and Ley article is that they did not seek to propose a solution to the

drug violence occurring, nor did they attempt to discern if attacks against officials and party candidates was a determining factor of cartel presence or success. Their research left me wanting more and I want to further this research in a way that can be applied in policy and other government solutions.

When I visited Mexico last summer, I took it upon myself to conduct a few interviews with local citizens about their attitudes towards the cartel and the government. I was surprised to learn that many Mexican civilians trust the cartels more than they trust the local or federal government. One person I spoke to in particular, talked about the cartel in their area opening high-end restaurants in the area with very affordable prices and told me the community would benefit from the presence of the cartel in many ways.

It is my goal as a political scientist to delve deeper into the relationship between drug cartels, governments, and the Mexican community. I want to determine exactly what makes drug cartels so successful and more trustworthy than the government. Answering these questions could result in policy solutions that benefit the Mexican community and strengthen their relationship with the government, while weakening the constant threat of cartels.

### **Research Design**

The juxtaposition variable from the Trejo and Ley dataset is truly what drove this research design. I wanted to see if I could apply it further with a specific question in mind: Does the state of the unity of the government affect the presence and threat levels of cartels?

To do this, I decided to combine two different datasets:

1. High Profile Criminal Violence Dataset (Trejo & Ley, 2021):  
measures violence against government officials and party candidates in Mexico.
2. Mapping Criminal Organizations in Mexico: State Panel 2007-2015 (Signoret et al., 2021) also referred to as MCO: maps the intensity of the presence of drug cartels in Mexico.

Both datasets use state-year as their units of measurement, therefore; it made sense to combine them.

This second dataset is vital to my research design. In the past, I have scoured articles and datasets looking for one that I believe adequately provides a measure of cartel success. This is obviously very difficult. As stated previously in this paper, cartels prefer to remain in the criminal underworld and in general, it is very difficult to measure the “success” of an OGC due to the inherent criminal nature of their activities (Schelling, 2016; Gambetta, 1993; O’Donnell, 1993; Arias, 2006). In the past, governments attempted to combat cartel success using the infamous Kingpin Strategy, in which the government targets a leader or “kingpin” of a cartel. Governments believed that they could destroy cartels simply by eliminating their leaders. Despite the prevalence of this technique, “there is little conclusive evidence that this strategy is successful in disrupting a terrorist campaign, or even mitigating its destructive effects” (Rowlands & Kilberg, 2011, p. 2).

This second dataset maps the intensity of the presence of drug cartels in Mexico and is the best measure of cartel “success,” I have found thus far in my research. It is my goal to determine which factors do and do not contribute to the intensity and presence of

drug cartels in a particular area. It is important to try and discover which specifically which variables contribute to the success of drug cartels. This is truly the only way governments will be able to combat drug cartels successfully.

In this research design, I am using juxtaposition as my independent variable. This is measured using the Juxtaposition Index established by Trejo and Ley. The index has values ranging from 0 to 8 with each number representing a different party configuration. The first entry represents the party of the president, the second entry represents the party of the state gubernatorial office (governor), and the third entry represents the party ruling the municipality. In order to answer my question, I would compare a unified government (PAN-PAN-PAN) to one of the highly juxtaposed configurations (PAN-PRD-PRI or PAN-PRD-PRD).

The dependent variable is the level of presence. This is measured in the MCO which consists of "hand-coded data on territorial presence found in over 60 documents from 11 sources, including Mexican and U.S. government agencies, specialized sources, and experts" (Signoret et al., 2021, p.1). The level of presence is recorded as minor, significant, or major.

The goal is to see if a state or municipality with a unified government, also sees less presence and less threat from drug cartels.

*Hypothesis 1: Unified governments will score lower on the threat scale than divided governments.*

I believe this hypothesis is a great opportunity for extension. As stated before murder rates are not necessarily the best way to measure cartel presence. I believe that using a variable like the level of presence in conjunction with data on murders and attacks can

give researchers more details about the inner workings of drug cartels and their success regardless of whether or not they are publicly killing people.

In the style of Trejo and Ley, I would continue to control for fiscal revenue, public prosecutor offices, and geographic region. Both datasets show well over ten thousand observations in R. Assuming I do not have a very small  $n$ , I would use OLS regression to determine results for my research question.

### **Conclusion**

As stated before, data consolidation is continually being worked on. It is difficult to collect data on drug cartels as they prefer to remain in the criminal underworld. This paper provided some history on drug cartels and conducted a successful replication of the figures and two regression tables from the article by Guillermo Trejo and Sandra Ley titled “High Profile Criminal Violence: Why Drug Cartels Murder Government Officials and Party Candidates in Mexico.”

Next, this paper proposed a possible research design to test whether fragmented governments result in higher presence from drug cartels and discussed the motivation behind the extension. Between the two datasets used in this paper there is a wealth of knowledge that researchers have clearly spent a lot of time developing but, the research on continued drug violence has clearly been neglected. Unbeknownst to the rest of the world, in 2006, “drug-related violence had reached a historical peak and inter-cartel wars had surpassed the 1,000 annual battle death threshold, which is commonly used to define a civil war” (Fearon & Laitin, 2003, as cited in Trejo & Ley, 2020, p. 160). Researchers must continue to uncover more about the relationship between governments and cartels,

as this information can be used to make policy decisions and help strengthen democracy in Mexico.

## APPENDIX

Table 4 Replication

**Table 4.** Interaction effects and high-profile criminal attacks, 2007-12 (random effects negative binomial models)

	Model 1		Model 2	
	Coeff.	IRR	Coeff.	IRR
<b>Turf wars and partisan fragmentation</b>				
Drug-related murder rate CVM	-1.831*** (0.610)	0.16	0.204** (0.093)	1.226
Juxtaposition index	0.189*** (0.048)	1.208		
Juxtaposition x murder rate CVM	0.514*** (0.150)	1.672		
PAN-PAN-PRI			0.391 (0.461)	1.478
PAN-PAN-PRD			-0.098 (1.076)	0.907
PAN-PRI-PAN			0.413 (0.417)	1.511
PAN-PRI-PRI			0.661* (0.383)	1.937
PAN-PRI-PRD			0.357 (0.515)	1.429
PAN-PRD-PAN			1.335** (0.529)	3.802
PAN-PRD-PRI			1.676** -0.431	5.345
PAN-PRD-PRD			1.769** (0.428)	5.867
<b>Turf wars and election cycles</b>				
Local election	0.475*** (0.141)	1.608	0.479*** (0.142)	1.615

Local election x murder rate CVM			0.108 (0.160)	1.114
Federal election	— 0.675*** (0.253)	0.509	— 0.484** (0.237)	0.616
<b>Territorial ambition</b>				
Attacks in adjacent neighbors t-1	0.349*** (0.069)	1.418	0.342*** (0.070)	1.407
<b>Controls</b>				
Constant	—2.378*** (0.766)		—2.318*** (0.824)	
Observations	9,703		9,853	
Number of municipalities	1,991		1,995	
Log-likelihood	—1,041.014		—1,058.243	
BIC	2,274.812		2,373.962	

·per 1,000 inhabitants

\*\*\* p<0.01, \*\* p<0.05, \* p<0.10



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