Queenpins: Women Leaders and Violence in Organized Crime

Fernanda Quintanilla Domínguez[1] and Marco Alcocer*[2]

[1]Instituto Tecnológico y de Estudios Superiores de Monterrey
[2]University of California, Merced and The Harvard Academy for International and Area Studies

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Abstract

Criminal organizations govern over millions worldwide, making it crucial to understand factors shaping their violence and territorial control. This article examines the impact of women's leadership in organized crime, arguing that gendered pathways to power make women who inherit leadership from male kin less violent than male leaders. We leverage the ascension of Enedina Arellano Félix to leadership of Mexico's Tijuana Cartel in 2008 following her brother's arrest. Synthetic control results show that Enedina's leadership reduced cartel-related violence, violence against women, violence against the state, and territorial expansion, but slightly increase in disappearances, with no changes in drug trafficking patterns or government enforcement. We then construct 44 case studies of women criminal leaders across 16 countries and find that those who succeed male kin are remarkably similar to Enedina, suggesting the results generalize. Our findings highlight the need to incorporate gender into research on organized crime and criminal governance.

Keywords: gender, leadership, organized crime, violence, Mexico

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1 Introduction

Women's involvement in rebel groups has significant consequences for their provision of governance (Loken and Matfess 2024), use of sexual violence (Wood 2009; Mehrl 2022; Ju 2023), violence against civilians (e.g., Mehrl 2023; Harrell 2023), and prospects for peace (e.g. Krause, Krause and Bränfors 2018; Brannon, Thomas and DiBlasi 2024). Like rebel groups, criminal organizations impact the well-being of millions around the world: they control territory, provide governance to members and nonmembers alike, and perpetrate violence against civilians, rivals, and state actors. Yet, we know little about the consequences of women's involvement, and more specifically, women's *leadership* in organized crime. This is despite scholars suggesting that leaders in organized crime profoundly shape their organizations' goals, structure, internal governance, and member behavior (Lessing and Willis 2019; Chopin and Dupont 2024), and that women leaders have distinct profiles and rule differently than their male counterparts. For example, some anecdotal accounts and case studies portray women leaders as needing to be more ruthless than men to reach the top and rule,[1] while others as less violent and more inclined to maintain low profiles (Olvera 2022; Sampó, Troncoso and Paparini 2023).

This article analyzes the consequences of women's leadership in organized crime, focusing on its impact on the violent behavior and territorial presence of the organizations they lead. While recent studies have begun to identify these women and trace their paths to leadership, the literature has yet to systematically examine whether and how women leadership matters. Existing research highlights that while organized crime is a male-dominated sphere characterized by patriarchal and masculine norms, women can and do play active, sometimes even key, roles. Centrally, gender roles impact *which* women rise to power and *how*. Women leaders are not those who fight their way up from lower ranks, but those inherit power when their male partner or relative, who previously held the leadership role, is arrested or killed (Fiandaca 2007; Allum and Marchi 2018; Campbell 2008; Guerreiro, Sousa and Gomes 2023; Fleetwood and Leban 2023). These women generally hold non-violent gendered roles pre-leadership, particularly those related to finances (Fiandaca 2007; Requena, De Juan, Giménez-Salinas and De La Corte 2014; Giacomello and Youngers 2020; Sampó,

[1]For example, "Quien es Delia Patricia Buendía, 'Ma Baker', líder del Cártel de Neza?" *MVS Noticias*, 12/31/2023. "Griselda Blanco and the female drug barons of Latin America," *BBC*, 01/17/2024.

Troncoso and Paparini 2023; Jaraba 2024), meaning that they develop non-violent management skills, are less socialized to use violence, and have limited experience directly wielding violence. Given women's distinct socialization, experiences, and ascension within organized crime, we expect women leaders to be less likely to exercise violence than their male counterparts, including against rival criminal organizations, women, and the state, which limits their willingness or ability to contest territory.

To evaluate these expectations, we turn to Mexico, where powerful criminal organizations that operate across the country began significantly expanding their territorial presence in the mid-2000s, and are responsible for tens of thousands of homicides and hundreds of political assassinations since 2000. We focus on the Tijuana Cartel, one of Mexico's most powerful drug cartels, which was founded by the Arellano Félix family in the late 1980s and came under the leadership of Enedina Arellano Félix in late 2008. We first provide a case study of Enedina, where we highlight how her entry, trajectory, and rise to power were distinctively shaped by gender in ways that very closely resemble the gendered pathways highlighted by exiting studies.

To test the effect of Enedina's leadership on the Tijuana Cartel's violent behavior and territorial presence, we exploit the arrest of the last male sibling of the Arellano Félix family in late 2008 that resulted in the ascension of Enedina Arellano Félix to leadership. Using the synthetic control method (SCM) (Abadie, Diamond and Hainmueller 2010, 2015; Abadie 2021) and a cartel-year dataset measuring the presence and violent behavior of each large drug cartel in Mexico between 2000 and 2018, we find that Enedina's leadership resulted in less in less cartel-related homicides, homicides of women, and violence against the state than the counterfactual. These results do not mean Enedina was did not perpetrate violence, as some violent trends were stable and others increased under her leadership, rather that she did so less than her male counterparts. These results challenge the prevailing argument that kingpin strategies invariably escalate criminal violence (e.g., Calderón, Robles, Díaz-Cayeros and Magaloni 2015; Phillips 2015; Velasco 2023) by showing that a women taking power following leadership decapitation can exert a stabilizing influence under certain conditions. These findings are therefore more consistent with Jones (2013), who finds that leadership turnover in the Tijuana Cartel does not increase violence when there are respected successors. Yet, we also find that Enedina briefly increased disappearances, which suggests that

gender, along with state apparatus cohesiveness (Durán-Martínez 2017), may impact the *visibility* of violence. It also suggests that Enedina is not less violent overall, as she continues to employ "hidden" violence. We further find that Enedina concentrated territorial operations rather than expanding geographically like her male counterparts. Additional results suggest that these findings are unlikely to be driven by changes in drug trafficking patterns or government enforcement.

To assess the potential generalizability of our findings, we create a novel qualitative dataset of 42 women who have led their own criminal organization across 6 continents and 16 countries from 1850 to the present, and analyze key gendered characteristics associated with their violent behavior. To our knowledge, this is the most comprehensive data on women leaders compiled to date. Centrally, we find that women who ascend to leadership following the arrest or death of a male relative exhibit a consistent trajectory: prior to leadership, they exercise influence through male kin, occupy relatively privileged positions within the organization, and often hold gendered, non-violent roles such as financial management. This trajectory closely mirrors that of Enedina Arellano Félix, suggesting that the proposed theory is broadly applicable to this subset of women leaders. The analysis also unexpectedly identifies women leaders who deviate from the theorized pathway: they establish their own criminal organizations. These women typically begin as low-level offenders and rise to leadership by building their own enterprises. Unlike inheritors, they largely lack positions of privilege or high-level connections prior to leadership and tend to have violent reputations. Not only do these leaders necessitate further research, but they delineate a clear scope condition for our findings. Furthermore, we only find three instances of women attaining leadership by rising through the ranks, though two were in all-female criminal organizations, and one instance of a woman wrestling leadership from their male partner, highlighting the uniquely gendered barriers to leadership in organized crime.

This article contributes to our understanding of gender and leadership effects in armed non-state actors in important ways. First, while recent studies of criminal organizations have shifted the question from *whether* women are involved in organized crime to *how* they participate, this study further shifts it to the *consequences* of their involvement. Likewise, existing research on rebel groups examines the participation and effects of women in rank-and-file positions while this article focuses on women *leaders*. We thus complement recent research showing that women hold leadership roles

in rebel (Henshaw 2016; Henshaw, Eric-Udorie, Godefa, Howley, Jeon, Sweezy and Zhao 2019; Loken and Matfess 2022, 2024; Loken 2024) and criminal organizations (see Gillespie, Jones, Kelly and Lynes 2024), though we go further by examining the consequence of their leadership. In doing so, most of our findings extend the women-and-peace hypothesis—women in rebel groups positively affect peace processes (e.g. Krause, Krause and Bränfors 2018; Brannon, Thomas and DiBlasi 2024)—to the study of criminal non-state actors, though other findings add nuance to this claim. We thus provide a much-needed addition to work on criminal governance, which often excludes gender and women, by showing that gender dynamics and women's leadership matter.

Second, we also speak more broadly to nascent research on women leadership in *politics* and their proclivity to use or prevent violence, including against women, differentially than male leaders (e.g. Dube and Harish 2020; Bochenkova, Buonanno and Galletta 2023; Alcocer, Skillman and Torres-Beltran 2025). Finally, by showing the gendered pathway of women who inherit leadership from male kin, this article mirrors findings showing the benefits of dynastic ties for women politicians succeeding their male kin (e.g. Folke, Rickne and Smith 2021), and that factors limiting male political leadership open spaces for their female relatives to attain leadership (e.g. Labonne, Parsa and Querubín 2019). Through these contributions, this study highlights how gender shapes organizational behavior, violence, and territorial presence within organized crime, offering valuable insights into the broader political dynamics of power, authority, and governance in contexts where state authority is contested or undermined by non-state actors.

2 A Theory of Women Leadership in Organized Crime

Our central argument is that women leaders whose trajectories and ascension to power are shaped by gender dynamics are likely to use less violence and exercise more limited territorial presence than their male counterparts. Given the dearth of studies in political science on the topic, we build our argument by drawing on research from disciplines like feminist criminology, anthropology, and sociology, and topics including narco-culture, gender studies, conflict studies, and women leadership effects. In doing so, we highlight that women experiencing organized crime differently than men is not to reduce everything to gender, but rather to acknowledge gendered perspectives. We also

take intersectionality seriously by acknowledging that gender differences are also a result of other structural conditions, such as inequality, race, ethnicity, economic class, and social status.

2.1 Gender Dynamics and Women Leaders

Organized crime presents an especially important context for studying gender because it is a male-dominated sphere characterized by patriarchal and masculine norms (see Arsovska and Allum 2014; Selmini 2020; Guerreiro, Gomes and Sousa 2022) that are perpetuated through its hierarchy, traditions, and constant reliance on the use or threat of violence. Not surprisingly, the gender gap in crime (the difference in the rates of offending between men and women) is even larger in organized crime than in other types of criminal activities (see Arsovska and Allum 2014; Selmini 2020; Guerreiro, Gomes and Sousa 2022). Naturally, longstanding views of women involvement in organized crime are based on traditional gender stereotypes and either omitted them or portrayed them as passive and non-violent actors without agency or as victims (e.g., wives, sisters, mothers, love interests, or prostitutes) (see Arsovska and Allum 2014; Selmini 2020; Guerreiro, Gomes and Sousa 2022). Early work by feminist scholars contested these views by showing that women play active roles and exert power, though these tend to follow gendered dynamics.

We now know that while women leadership in organized crime is much less common than male leadership, women do occasionally become leaders. Yet, it has also became clear that the trajectories and socialization of women leaders are deeply shaped by gender dynamics, with some suggesting this impacts how they rule. For example, some anecdotal accounts and case studies portray women leaders as needing to be more ruthless than men to reach the top and rule, while others as less violent and more inclined to maintain low profiles. To build expectations about the behavior of women leader, we contend that it is crucial to first understand *which* women come to power and *how*, as these factors shape their gendered experiences and socialization both before and after attaining leadership.

Crucially, existing studies find that women leaders are rarely those who work or fight their way up from lower ranks, but rather those with some degree of privilege who succeed a male partner or family member that previously held the leadership role. That is, women leaders tend not to be those that enter as low-ranking members and work their way up, which may be precisely the women

that have to use more violence to prove their status and worthiness. Instead, it is women with relative privilege who often hold important or high-ranking positions that gain leadership—they are the partners, sisters, or daughters of male leaders. Furthermore, women's ascension to leadership appears more likely during crises when male leaders are heavily targeted—whether by rivals or the government—and are unable to continue leading, often due to arrest or death (Fiandaca 2007; Massari and Motta 2007; Ingrasci 2007; Allum and Marchi 2018; Otomo 2007; Campbell 2008; Guerreiro, Gomes and Sousa 2022; Sampó, Troncoso and Paparini 2023; Fleetwood and Leban 2023). This suggests women are not seen as natural successors, but a last resort in moments of instability. Thus, women seem to serve the role of a "reserve army" for men rather than their leadership reflecting female emancipation in organized crime, with some going as far as claiming that women leaders would not make it on their own without male relatives (Pizzini-Gambetta 2009). While women leaders are in command once they assume leadership, some argue that they nevertheless rely on male approval given that these are male-dominated spaces (Selmini 2020).

Given who these women leaders are, before assuming leadership they tend to access and exercise power differently than men. Anderson (2005) argues that in organized crime, male "power-over" (defined by dominance and control over others) is made possible by women's agency and "power-to" (defined as relational power used to benefit others and the self), making women both subservient but active and essential. Case studies of criminal organizations across different countries support this theory by showing that women play active, sometimes even key, roles, but that their influence is often through their male partners or kin and thus indirect, hidden, and unrecorded (Ingrasci 2007; Di Maria and Lo Verso 2007; Pizzini-Gambetta 2009; Requena et al. 2014; Jaraba 2024).

Other scholars have showed that women not only exercise power indirectly through their male relative or partner, but also *directly* through positions with power (Rossi 2007; Allum 2007; Campbell 2008). This is consistent with results showing that women are commonplace and fundamental to drug trafficking organizations (Fleetwood and Leban 2023) and have high centrality positions, with some being decisive and key actors (Guerreiro, Sousa and Gomes 2023). Some scholars have also highlighted that the direct influence of women in organized crime can shift in response to several factors, such as changes in civil society, criminal wars, and the organization's flexible internal structure (Allum 2007) or market and organizational changes (Otomo 2007).

Nevertheless, despite scholars debunking ideas that women in organized crime are passive subjects or victims, researchers largely agree that this does not result in the emancipation of women in these spaces (i.e., parity with men), but rather a pseudo- or ambiguous-emancipation. This is even found in cases where women hold positions of power, though higher positions do provide greater degrees of empowerment and autonomy from male dominance, with women's social class and rank also affecting the degree of freedom vis-à-vis men (Campbell 2008).

2.2 Impacts of Women Leadership in Organized Crime

To the extent that leadership matters in criminal organizations, we argue that women leaders will impact their organization's behavior and outcomes differently than men leaders given their gendered roles and trajectories. This argument builds on scholars suggesting that the type of leadership in organized crime matters (see Chopin and Dupont 2024), and that leaders function as key brokers (Calderoni 2014, 2016; Calderoni and Superchi 2019) and are highly influential for the organizations' goals, structure, internal governance, and member behavior (Chopin and Dupont 2024; Lessing and Willis 2019). We argue that women leadership is likely to matter for four key outcomes: criminal violence, violence against women, violence against the state, and territorial presence.

First, we argue that women leaders will be less likely to use violence, in general, than male leaders. As illegal actors, criminal organizations cannot rely on legal state institutions to enforce contracts, adjudicate disputes, or protect property rights. They thus rely on informal systems of rules and mechanisms to control and regulate member behavior, many of which rely on violence. If access to violence and expectations about the use of violence are shaped by gender dynamics, then women may be less violent. Moreover, if women's pre-leadership roles push them to specialize in nonviolent strategies to business management, then women may rely on internal governance mechanisms that require less violence once they attain leadership.

On the one hand, the drug trafficker, or member of a criminal organization more broadly, represents key pillars of masculinity: social status, wealth, and access to women. Existing research finds that the use of violence in organized crime is often a means for boys and men to construct, measure, and redeem their manhood and masculinity (Penglase 2010; DaMatta 2010; McMillan and Paul 2011; Plaza and Sánchez 2016; Núñez Noriega and Espinoza Cid 2017), so men, in particular,

may believe that the use of violence is necessary. Not surprisingly, the expression of masculinity through violence is often glorified in these spaces (Gillespie et al. 2024) and may partly explain levels of violence in organized crime (Yánez and Salas 2019). Inversely, women are often not socialized to integrate violence into their gender identity in organized crime in the same way as men, particularly those with privileged positions, and instead are generally expected to be non-violent, naive, tender, and passive (e.g., Mejías and Latorre 2022; Leboeuf 2022). To the extent that this difference is salient, women may be less likely to engage in violent behavior.

Beyond masculinity and expectations of violence, gendered differences in participation may also prevent women from having equal access to means of violence. In the Americas, Olvera (2022) argues that women in positions of power prefer less violence. Research finds that women in criminal organizations generally hold non-violent roles, particularly those related to finances, such as business management and money laundering (Fiandaca 2007; Requena et al. 2014; Giacomello and Youngers 2020; Sampó, Troncoso and Paparini 2023; Jaraba 2024). Thus, the gendered market hypothesis argues that conditions increasing the number of non-violent roles in organized crime increase women involvement, particularly in management roles (Savona and Natoli 2007; Zhang, Chin and Miller 2007; Kleemans, Kruisbergen and Kouwenberg 2014). Others argue that entrepreneurial, less hierarchical criminal organizations provide spaces for individuals with nonviolent skills (i.e., women) to fill openings related to running business activities (Pizzini-Gambetta 2009). This is not to say that women do not exercise violence, because they do in some cases, even when they experience private violence and remain largely subordinate to men (Siebert 2007; Massari and Motta 2007; Ingrasci 2007; Allum 2007). Nevertheless, women's access to and use of violence appears to remain limited compared to men.

Additionally, given that women who ascend to leadership often hold key non-violent roles prior to their ascension, including positions in administration, business negotiations, financial planning and management, personnel management, and overseeing business operations, these roles enable them to develop specialized skills in non-violent business and organizational management. This may lead them to adopt internal mechanisms and structures once they gain leadership that rely on less violence. For example, (Lessing and Willis 2019) argue that the PCC in Brazil have adopted a rational-bureaucratic internal structure that allows them to adjudicate internal disputes with

minimal violence. If women leaders are more prone to adopting organizational structures and management styles that rely less on coercion, then the criminal organizations they lead can successfully operate with less violence.

In sum, women who become leaders tend to have held non-violent administrative positions that help them develop non-violent management skills, depended on the male kin they succeed, have been less socialized to use violence, and have had limited experience wielding violence. Even more, some argue that women in organized crime have a stronger preference for collaboration (De Seranno and Colman 2023), which may additionally lead them to run their organizations with fewer conflicts with other criminal organizations. Alternatively, women leaders may use less violence *even if* they seek to use the same violence as male leaders, either because they have less experience using violence effectively or male subordinates being less likely to exercise violence on behalf of women leaders. As Gillespie et al. (2024) pouts out, even women leaders seeking to use violence rely on other members (primarily men) to commit violence on their behalf.

Hypothesis 1 (H1): *Women leaders in organized crime are less likely to use violence than male leaders.*

Second, it may be reasonable to believe that violence against women may be a form of violence that women leaders are particularly sensitive to given their own experiences in hyper-masculine spaces, their (often) gendered roles in organized crime, and that they are subject to more private violence than male leaders (Siebert 2007; Massari and Motta 2007; Ingrasci 2007). Additionally, some studies argue that women attain positions of power more often in human smuggling organizations because this market relies on care giving, interpersonal networks, and concern for clients (Zhang, Chin and Miller 2007), suggesting that women in organized crime may be more prone to this type of behavior. These expectations align with research indicating that increased female participation in rebel groups is associated with a reduction in the organization's use of sexual violence (Wood 2009; Mehrl 2022; Ju 2023).

Hypothesis 2 (H2): *Women leaders in organized crime are less likely to use violence against women than male leaders.*

Third, women leaders may also be less likely to violently confront the state than men leaders if they use less violence in general or if they benefit from less scrutiny from law enforcement institutions. Scholars contend that individuals in law enforcement and judicial institutions often view women in organized crime through prevalent gender stereotypes portraying them as subservient to men, passive actors, and victims (Rossi 2007; Dino, Milia, Milito and Oliveri 2007; Campbell 2008; Fleetwood 2015; Selmini 2020; Farfán-Méndez 2020; Olvera 2022; Sampó, Troncoso and Paparini 2023). This makes women less visible and therefore less likely to come under scrutiny. Some scholars further argue that women's everyday lives in these patriarchal organizations are more private than those of men, making them harder to investigate (Sampó, Troncoso and Paparini 2023). Moreover, women have agency and may strategically use or manipulate their image and stereotypes to their advantage to maintain lower profiles and remain less suspicious to law enforcement (Campbell 2008; Olvera 2022; Sampó, Troncoso and Paparini 2023). Some argue that these factors lead to a "paradox of invisibility" where gender stereotypes invisibilize the functions of women to law enforcement institutions, benefiting the organizations they work for or lead (Farfán-Méndez 2020). In the face of reduced oversight, violence as a defense mechanism against state enforcement is therefore less necessary.

Hypothesis 3 (H3): *Women leaders in organized crime are less likely to use violence against the state than male leaders.*

Fourth, if women leaders generally prefer to maintain lower profiles, resort less to violence, and their identities rely less on using violence, this may translate to women also seeking less territorial control if it is not central to their business. Their expertise in non-violent roles before gaining leadership (e.g., business management or finances) may simply mean they prioritize non-violent strategies to run their organization and achieve profits. This follows some studies arguing that women participation is higher in markets where territorial control is less prominent as an organizing feature (Savona and Natoli 2007; Zhang, Chin and Miller 2007; Kleemans, Kruisbergen and Kouwenberg 2014). Alternatively, women leaders may be more constrained in expanding their territorial operations even when they pursue this goal if it requires violence and women leaders have less experience using violence effectively or male subordinates are less likely to exercise violence on

behalf of women leaders.

Hypothesis 4 (H4): *Women leaders in organized crime are less likely to extend their territorial presence than male leaders.*

3 Mexico's Drug Cartels

To test the consequences of women leadership in organized crime, we turn to Mexico and its powerful drug cartels. Since the late 1980s, a handful of powerful criminal organizations specializing in trafficking drugs to international markets, known as "drug cartels," have dominated the criminal underworld. In December of 2006, the newly elected president declared war against drug trafficking and drug cartels and incrementally deployed the military throughout the country. Key components of this government crackdown included drug interdiction and kingpin strategies where the government sought to capture or kill cartel leaders. In response, drug cartels began attacking the state (Lessing 2017), diversifying their activities (Alcocer 2022; Herrera and Martinez-Alvarez 2022), expanding their geographic presence (Alcocer 2022), and fragmenting (Alcocer 2024).

Within this context, we focus on the case of Enedina Arellano Félix, leader of the Tijuana Cartel since 2008. We believe Enedina provides an important case to study because she is the first woman to lead a contemporary drug cartel in Mexico, she operates within a gendered context, and she exemplifies the prototypical woman leader identified by the literature. Mexico is generally considered a traditional country with strong patriarchal norms, where *machismo* (a stereotypical form of masculinity) was deeply interwoven into the construction of national identity (Gutmann 2007). Within Mexican drug cartels, these views are exacerbated, with "narco masculinities" pushing traditional gender roles and the use of violence to extremes (García-Reyes 2022). These norms are most visibly reflected in "narcoculture,"[2] where there is a near-total overlap between what is valued in drug trafficking and what is masculine (Plaza and Sánchez 2016), pushing those involved to accept and even internalize these gender dynamics (Noriega 2017). This includes establishing male-dominated power dynamics where women are subordinate (Scott 2015) and often reduced to mere objects

[2]Narcoculture is broadly defined as the social and cultural norms, values, behaviors, and aesthetics associated with the world of drug trafficking and organized crime.

of simple use and satisfaction to men (Plaza and Sánchez 2016). Nevertheless, women have been historically involved in drug trafficking in Mexico, albeit primarily through gendered or low-level roles, with only three documented cases of women leaders prior to the 1990s (Santamaría Gómez 2012).

3.1 The Tijuana Cartel

This section presents a case study of the Tijuana Cartel and Enedina Arellano Félix.[3] The case highlights the gender dynamics of her involvement and trajectory within the Tijuana Cartel, which very closely reflect those of women leaders identified in the literature—suggesting she provides a good case to test the theory.

The origins of the structure that eventually became known as the Tijuana Cartel, the Arellano Félix Organization, or Arellano Félix Cartel, are rooted in the 1980s with the Arellano Félix siblings: seven men (only five have been linked to organized crime: Rafael, Benjamin, Ramón, Francisco Javier, and Eduardo) and four women (though only Enedina and Alicia have been linked to organized crime). The family is originally from the state of Sinaloa, where the siblings were born. Benjamin and Eduardo were involved in drug trafficking since at least the early 1970s, with Benjamin becoming an important distributor in California for powerful regional drug traffickers like Pedro Aviles Perez and Jorge Favela Escobosa. During the 1980s, Benjamin gained favor with Mexico's major traffickers who headed a trafficking network later known as the Guadalajara Cartel: Rafael Caro Quintero, Miguel Ángel Félix Gallardo, and Ernesto Fonseca Carrillo. With these connections, Benjamin began taking control of drug trafficking along the western portions of the US-Mexico border. Some media accounts claim that the Arellano Félix siblings are the nephews of Miguel Ángel Félix Gallardo, though Benjamin Arellano Félix once denied this claim during an interview. In 1985, the Arellano Félix siblings were allegedly formally given the Tijuana corridor along the California-Mexico border as their territory by the leaders of the Guadalajara Cartel. With the arrests of Caro Quintero and Carrillo Fuentes in 1985 and Félix Gallardo in 1989, Benjamin, with the support of his male siblings, gained independence and began operating as an autonomous criminal organization with its base Tijuana. Some accounts suggest that by 1989

[3]Refer to the Online Appendix for a complete list of sources used in constructing the case studies.

Benjamin controlled virtually all drug trafficking routes towards California and Arizona.

Through the 1990s, the Tijuana Cartel consolidated itself as one of the most powerful drug cartels in Mexico due to their control of drug trafficking routes along the western US. This did not go without conflict. From 1989 to 2003, the Tijuana Cartel fought the Juarez Cartel over key trafficking routes along the US-Mexico border. Since at least 1988, the Arellano Félix Organization has been at war with the Sinaloa Cartel, leading to the arrest of the eldest brother, Francisco Rafael, in 1993 (released in 2008) and his assassination in 2013, as well as the assassination of a younger brother, Ramón, in February, 2002.

In October of 2002, Benjamin, the family leader, was arrested, leaving Francisco Javier as the head of the organization. In 2004, a high-ranking government official stated that the Tijuana Cartel had forged a short-lived alliance with the Gulf Cartel through the imprisoned Benjamin, who shared prisons with Osiel Cardenas Guillen, leader of the Gulf Cartel. In August of 2006, Francisco Javier was arrested by US authorities and Eduardo—the last active male sibling—gained leadership. In late 2007, internal disputes began between the Arellano Félix family and Teodoro García Simental, a high-ranking member of the Tijuana Cartel, which broke into all-out war in April 2008 and escalated when García Simental forged a military alliance with the Sinaloa Cartel that same year. On October 26, 2008, Eduardo was apprehended by the Federal Police. The DEA published a statement claiming this arrest marked the end of the Arellano Félix Organization. This was not the case. Enedina Arellano Félix took leadership with the support of her nephew Fernando Sánchez Arellano, son of Alicia.[4]

3.2 Enedina Arellano Félix

> [Enedina] is not into the wars of her brothers. She is into making alliances and making money. Her beauty may also have helped her make alliances with powerful traffickers.[5]
>
> —*Mike Vigil, former Chief of International Operations for the DEA*

Enedina was born in 1961 in Mazatlan, Sinaloa, Mexico, and was protected by her family from

[4]Some reports claim Fernando is Enedina's son, not Alicia's, leading to confusion in media reports. However, leading experts on the Arellano Félix Organization and official reports from Mexico's Prosecutor's Office state that he is Alicia's son.

[5]Grillo, Ioan. "Meet the First Woman to Lead a Mexican Drugs Cartel." Time. July 7, 2015.

her brothers' drug trafficking activities during her childhood. According to some accounts, Enedina hoped to compete in a beauty pageant at the Mazatlan Carnival when she was 16 years old, but was unable to given that her brothers were wanted by the authorities. She attended a private university in Guadalajara, Jalisco and graduated with a degree in accounting, after which, according to some accounts, she began helping her mother manage the family's legal businesses.

In 1985, at the age of 24, Enedina married Luis Raúl Toledo Carrejo, a businessman, in Guadalajara, and the couple moved to Tijuana to manage family businesses. According to most credible accounts, this is when Enedina began her involvement in her bothers' drug trafficking operations by using the legal businesses she managed to launder money. In the early 1990s, she became more directly involved when her and her husband acquired a pharmaceutical company that was allegedly used to import precursor chemicals that the nascent Tijuana Cartel used to produce synthetic drugs. This is also when Enedina is said to have begun directly advising her brothers on the financial matters of the Tijuana Cartel.[6]

In early 2000, Jesús Labra Avilés, the financial mastermind of the Tijuana Cartel, was arrested and Enedina allegedly replaced him, putting her in charge of the finances and money laundering operations of the cartel. This event coincides with the United States Department of the Treasury sanctioning Enedina under the Foreign Narcotics Kingpin Designation Act in 2000.

In 2002, Enedina's role expanded and became even more central after Ramon was killed and Benjamin was arrested, leaving the family weakened. In 2005, a U.S. investigation into the Tijuana Cartel identified Enedina and various companies she managed as the backbone of the organization's money laundering operations. With the arrest of Francisco Javier in 2006, Enedina became the key advisor to Eduardo, the last standing male sibling.

On October 26, 2008, Eduardo was arrested following a shootout with the Federal Police in Tijuana, and Enedina took charge of the Tijuana Cartel during the apex of a brutal war against García Simental. Enedina was supported by her nephew Fernando, who took on a prominent role as head of operations, and her sister Alicia. More than a year into her reign, the war ended and

[6] An account that only recently emerged that lacks credibility and is not substantiated by reliable evidence or sources, but which illustrates gender bias in reporting, is that in 1988/89, Enedina fell in love with Armando Lopez, a high-ranking member of the Sinaloa Cartel, and that her brothers, upon discovering the relationship, prohibited it and killed Armando, which initiated the conflict with the Sinaloa Cartel.

the Tijuana Cartel declared victory when García Simental, supported by the Sinaloa Cartel, was arrested in early 2010. Some accounts claim that following the war, Enedina negotiated a business deal with the Sinaloa Cartel that allowed them to traffic through Tijuana for a price, avoiding another war, though this is contested.

Extraordinarily little information exists about Enedina's leadership, likely reflecting both reporting bias and her own low-profile approach. Most accounts claim that Enedina never liked the wars of her brothers and prefers to negotiate. Some also state that her role as money launderer and head of finances before her leadership made her business oriented, calculating, and savvy. Compared to her brothers, her and her sister, Alicia, prefer more private, low-profile lives, with virtually no private information existing about either of them.

Some experts claim that Enedina was preparing her nephew Fernando as her successor. However, in 2014, Fernando was arrested in Tijuana, leaving Enedina without the support of a male family member. By 2016, some reports suggest that Enedina had restructured the cartel, making it more decentralized, with internal factions having more autonomy. In 2016, one faction of the Tijuana Cartel forged an alliance with the Jalisco New Generation Cartel and adopted the name Tijuana New Generation Cartel. In 2018, one of these subgroup leaders formed an alliance with the Chapitos faction of the Sinaloa Cartel.

As of early 2025, Enedina remains the leader of the Tijuana Cartel, and her public image continues to be frequently portrayed through gender stereotypes. For example, media outlets have nicknamed her "La Jefa" (*the female boss*), "La Madrina" (*the godmother*), and "Narco mami" (*narco mommy*)—all nicknames referencing her gender. The most well-known nickname, "La Narcomami," uses the term "mami" which is generally used to sexualize women and reference their physical appearance. Not surprisingly, despite the most recent pictures of Enedina being from more than two decades ago, media outlets often continue to mention her physical beauty, with many asserting that it helps her conduct business with men, illustrating the gendered stereotypes through which her, her image, and her actions continue to be seen, portrayed, and understood. These narratives have helped build a certain gendered mythology around her that continues to be perpetuated by (primarily male) journalists, reporters, and security experts.

4 Data

To test the impact of Enedina Arellano Félix rising to power within the Tijuana Cartel, we follow existing research and employ the SCM, which has been used to study leadership effects, including the effects of populist political leaders (Grier and Maynard 2016; Funke, Schularick and Trebesch 2023), women political leaders (Imamverdiyeva and Shea 2022), and the consequences of leadership turnover in criminal organizations (Calderón et al. 2015). The SCM was developed to advance the comparative case study method by creating a "synthetic" control from units in the control group, or donor pool, that closely resembles the treated unit, thus acting as a counterfactual (Abadie, Diamond and Hainmueller 2010, 2015; Abadie 2021).

In our case, the SCM uses data on Mexico's major cartels to compare the Tijuana Cartel with a synthetic Tijuana Cartel before and after Enedina's rise to power. The SCM relies on the argument that a synthetic Tijuana Cartel can better resemble the Tijuana Cartel than comparisons with a single other cartel, for example, the Juarez Cartel. The SCM is particularly useful and appropriate in our case for multiple reasons. First, the SCM was designed in cases with one treated unit, as is our case with the rise of Enedina in the Tijuana Cartel. Second, the SCM was developed specifically for interventions implemented at an aggregate level affecting a small number of large units, which fits our cartel-level design. Third, the SCM is appropriate in instances with a few units and small samples just like our data structure.

To estimate the SCM, we create a cartel-year dataset on the violent behavior and territorial presence of each major drug cartel between 2000 and 2018 by combining data on the local geographic presence of each drug cartel per year from Sobrino (2023) with data on violent outcomes. We introduce each variable below. Summary statistics are provided in the Online Appendix.

4.1 Control Group

We focus on the Tijuana Cartel given the rise of Enedina in October 2008, and use the other seven major Mexican drug cartels as control units, or the donor pool, to create the synthetic Tijuana Cartel. These include the Sinaloa Cartel, Beltran Leyva Organization, Juarez Cartel, Gulf Cartel, Zetas-Northeast Cartel, Michoacan Family-Knights Templar Cartel, and Milenio Cartel-Jalisco New

Generation Cartel. Following the extensive qualitative data collection effort by Alcocer (2024), we consider the Knights Templar a continuation of the Michoacan Family Cartel since the main leaders remained the same and was more of a re-branding, the Northeastern Cartel as a continuation of the Zetas given that this was also a re-branding, and the Jalisco New Generation Cartel a continuation of the Milenio Cartel since they are the faction that won the succession battle in 2010.

While Mexico has dozens of other powerful criminal organizations, we restrict our donor pool to these seven cartels for substantive reasons. These are all networks that established themselves during the 1990s. They are also the organizations that dominated drug trafficking when our time period of analysis began. That is, they are large drug trafficking organizations and thus comparable to some degree as opposed to smaller more localized criminal groups, many of which do not traffic drugs.

4.2 Treatment

Only one woman rose to leadership in the main drug cartels during the time period under analysis. Enedina assumed the leadership of the Tijuana cartel following the arrest of her brother in October 26, 2008. Our main independent variable is a dummy variable that takes on the value of 1 for the Tijuana Cartel between 2009 and 2018, and 0 otherwise. This variable also takes on a value of 0 for all other cartels.

4.3 Violent Behavior and Territorial Presence

To investigate the violent behavior of each cartel, we combine data on local geographic presence with data on different forms of violence to create three variables: cartel-related violence, disappearances, violence against women, and violence against the state.

First, we create two different variables to measure general violence by cartels (H1). We first create a variable for cartel-related homicides using official data on homicides and following existing research that measures cartel-related homicides as the homicides of young men (ages 15-34) (Calderón et al. 2015). Combining this measure with data on municipal population and cartel presence, we calculate cartel-related homicide rates in the municipalities where each cartel had

presence per year, and aggregate to the cartel-year level. This variable therefore measures the mean cartel-related homicide rates in the municipalities where each cartel operated each year.

Additionally, we also measure disappearances, a less visible form of violence that is also prevalent in Mexico. We use data from the National Registry of Data on Missing or Disappeared Persons (*RNPED*), which identifies the municipality where individuals disappeared between 2000 and 2017. This data only includes individuals reported as missing to authorities, but unless these reports differ systematically for municipalities where the Tijuana Cartel operates per year post-2008, it should not bias the results. Using this data, we calculate disappearance rates in the municipalities where each cartel had presence per year, and aggregate to the cartel-year level.

Second, to examine violence against women (H2), we use official homicide data to calculate the homicides rates of young women (ages 15-44) in the municipalities where each cartel had presence per year. We use this age range given that women in this age group are particularly vulnerable to gender-based violence in Mexico (SEGOB, INMUJERES and ONU Mujeres 2017) and Latin America (ECLAC 2021).

Third, to measure cartels violently confronting the state (H3), we use data on political assassinations from Alcocer and Erickson (2024). This data identifies all politicians (mayors, municipal council members, governors, state legislators, and federal legislators) assassinated in Mexico between 2000 and 2018 and the municipality where they were killed. Using this data, we calculate the total number of political assassinations in the municipalities where each cartel had presence per year.

Finally, we operationalize territorial presence (H4) as the total number of municipalities that each cartel had presence in per year. While this measure cannot tell us *how* or *whether* each cartel controlled these municipalities, it does identify where they operate and the extent of their territorial presence across time.

4.4 Covariates

To create the synthetic control, we identify key variables in the literature that influence the operations and violent behavior of cartels: government crackdowns, leadership decapitation, criminal conflicts, and vertical political alignment.

First, tough-on-crime crackdowns against organized crime have generally been found to increase criminal violence and violence against the state (e.g. Osorio 2015; Lessing 2017; Magaloni, Franco-Vivanco and Melo 2020; Barnes 2022; Blair and Weintraub 2023). To account for Mexico's crackdown that began in December of 2006, we use data on the year anti-drug operations began in each state from Alcocer (2022) and the geographic location of each cartel's stronghold in 2006 from Alcocer (2024) to identify the year these operations began in the strongholds of each cartel.

Second, leadership turnover, particularly from government kingpin strategies that arrest or kill leaders, has been found to increase violence as it can create intra-cartel infighting, inter-cartel conflicts, and fragmentation (e.g., Jones 2013; Calderón et al. 2015; Phillips 2015; Velasco 2023; Alcocer 2024). We use data from Alcocer (2024), who identify the leaders of each cartel across time and the reason for leadership turnover, to create two variables: the number of leaders arrested per cartel per year, and the number of leaders that died per cartel per year. These variables capture key dynamics: government actions targeting high-ranking members of each cartel, the fragmentation of cartels stemming from leadership turnover, internal rearrangements resulting from leadership succession struggles, and moments of leadership vulnerability and instability.

Third, criminal conflicts have been identified as one of the main, if not the main sources of violent outbreaks. To account for this dynamic, we use data on each cartel's geographic presence and create two separate variables that together capture the extent of conflict they are involved in. We first measure contested territories per year by calculating the number of municipalities each cartel operates where other cartels also operate. We also consider territories not actively contested by using the number of municipalities where they were present without other cartels each year.

Fourth, intergovernmental coordination, in the form of vertical political alignment, has been generally found to help combat criminal organizations and reduce violence (Rios 2015; Durán-Martínez 2017; González and Cáceres 2019; Alberti, Díaz-Rioseco and Visconti 2023). We take this factor into consideration by measuring (1) the number of municipalities that each cartel operates in where there is both vertical political alignment with state and federal executives, (2) the number of municipalities that each cartel operates in where there is only vertical alignment with state executives, and (3) the number of municipalities that each cartel operates in where there is only vertical alignment with the federal executive.

In addition to these factors, the research design controls for important covariates through time and unit trends that account for time-varying and time and unit-invariant unobserved confounders.

4.5 Alternative Explanation: Changes in Law Enforcement

If we observe differential uses of violence, one important question is whether it is due to changes in violent behavior by Enedina or changes to the drug business or in drug enforcement against the Tijuana Cartel. Ideally, we would have independent measures for drug trafficking and drug enforcement for each cartel, but this data does not exist. Thus, to measure changes in drug trafficking patterns and state enforcement against each cartel, we calculate the number of kilograms of drugs seized per year in municipalities where each cartel was present between 2000 and 2017 using drug interdiction data from the Mexican military (*SEDENA*). We create two variables, the first measuring the total amount of kilograms of all drugs and another measuring the total number of kilograms of all drugs except marijuana since the amount of marijuana seized is far greater than other drugs.

5 Empirical Strategy

For the SCM, we have data on $J+1$ cartels, the first, $(j=1)$ of which receives the treatment—a woman becoming leader. The other units, $j=2,\cdots,J+1$, are the potential control cartels, or "donor pool." Our data includes T periods (2000 - 2018), with the first T_0 periods corresponding to the pre-treatment period (2000-2008). For each cartel, we also observe a set of k covariates. The outcomes are represented by Y_{it}.

The synthetic control is represented by a $J \times 1$ vector of weights, W, which are used to create the synthetic Tijuana Cartel. The weights, W, represent the contribution of each control cartel to the synthetic control and are restricted to be non-negative and sum to one. The weights are estimated in a way that the synthetic Tijuana Cartel best resembles the pre-treatment covariate values of the Tijuana Cartel. That is, the SCM optimizes the weights, W, that minimize the distance between the covariate values of the Tijuana Cartel and the synthetic control during the pre-treatment period. Next, the weights, W, are used to estimate the outcomes for the synthetic

Tijuana Cartel as follows:

$$\hat{Y}_{it}^{N} = \sum_{j=2}^{J+1} w_j Y_{jt} \tag{1}$$

Since we denote the Tijuana Cartel as $j = 1$, the estimated treatment effect of having a woman, Enedina, become the leader of the Tijuana Cartel in 2009 at $t = T_0 + 1, \cdots, T$ is given by:

$$\hat{\tau}_{1t} = Y_{1t} - \hat{Y}_{it}^{N} \tag{2}$$

Pre-treatment predictors include the number of municipalities each cartel has presence in without rival presence, number of contested municipalities, proportion of municipalities with party alignment with the state, proportion of municipalities with party alignment with the president, proportion of municipalities with party alignment with both state and federal governments, number of arrested leaders, and number of killed leaders. As is recommended by the literature (Abadie, Diamond and Hainmueller 2010; Ferman, Pinto and Possebom 2020), we include pre-treatment outcome trends as predictors for all models. This has been found to improve the model's ability to control for unobserved confounders (Ferman, Pinto and Possebom 2020). For models looking at geographic presence, this includes the total number of municipalities with cartel presence, the number of contested municipalities, and the number of non-contested municipalities.

5.1 Robustness Tests

For each model, we conduct a series of tests to show the robustness of the results. First, we estimate placebo results by iteratively assigning the treatment to each cartel in the control group and estimating the placebo effect. Comparing the main result against the placebo permutations shows how extreme the main results is compared to the full set of placebo effects. To test these differences formally, we follow Abadie, Diamond and Hainmueller (2010, 2015) and Abadie (2021) and calculate the set of pre- and post-treatment root mean squared prediction error (MSPE) values using the main and placebo results, with which we calculate the post/pre-treatment MSPE ratio. MSPE ratios measure the quality of the fit of a synthetic control in the post-treatment period relative to the pre-treatment period, with higher values denoting better synthetic controls. The

comparison of the treated unit's MSPE ratio with the placebos is used for inference in the SCM.

We also follow recommendations by Abadie, Diamond and Hainmueller (2015) and Abadie (2021) and perform a leave-one-out robustness test where iteratively re-estimate the main models excluding one cartel in the donor pool each iteration. This is a type of sensitivity test to evaluate whether the results are driven by any particular unit in the donor pool. Finally, we follow the literature and conduct backdating where we set the start of the treatment period as 2005, 2006, and 2007 rather than 2009 to assess the credibility of the synthetic control (Abadie, Diamond and Hainmueller 2015; Abadie 2021).

6 Results

We first provide the results for cartel-related violence. Figure 1 shows the (A) trends for the Tijuana Cartel and its synthetic control, (B) estimated effect across time along with the distribution of placebos, (C) weight assigned to each unit in the donor pool, and (D) RMSE for the main model and the placebos. These plots not only show the main results but also their robustness. We then present the other main findings on violence in Figure 2 and territorial presence in Figure 3 by plotting the trends of the Tijuana Cartel and its synthetic control, with the robustness tests for each included in the Online Appendix. For every outcome, we find that the pre-treatment trends of the Tijuana Cartel and its synthetic control closely resemble each other, giving us confidence in the results.

Our results are clear: The Tijuana Cartel under Enedina is less violent than the counterfactual with respects to homicides, but just as violent if not more when looking at disappearances, or "less visible" forms of violence. First, while cartel-related homicides were increasing starting in 2008, they remained relatively stable with the ascension of Enedina but increased for the synthetic control and remained lower for her first six years in power, with a subsequent increase. The increase in cartel-related homicide rates in 2014 coincides with the arrest of Fernando Sánchez Arellano, nephew of Enedina, who supported her aunt and was seen as her possible future successor. He was also the last remaining male family member supporting Enedina. This may suggest that while Enedina had been able to rely on her last name for legitimacy when she rose to power, she may

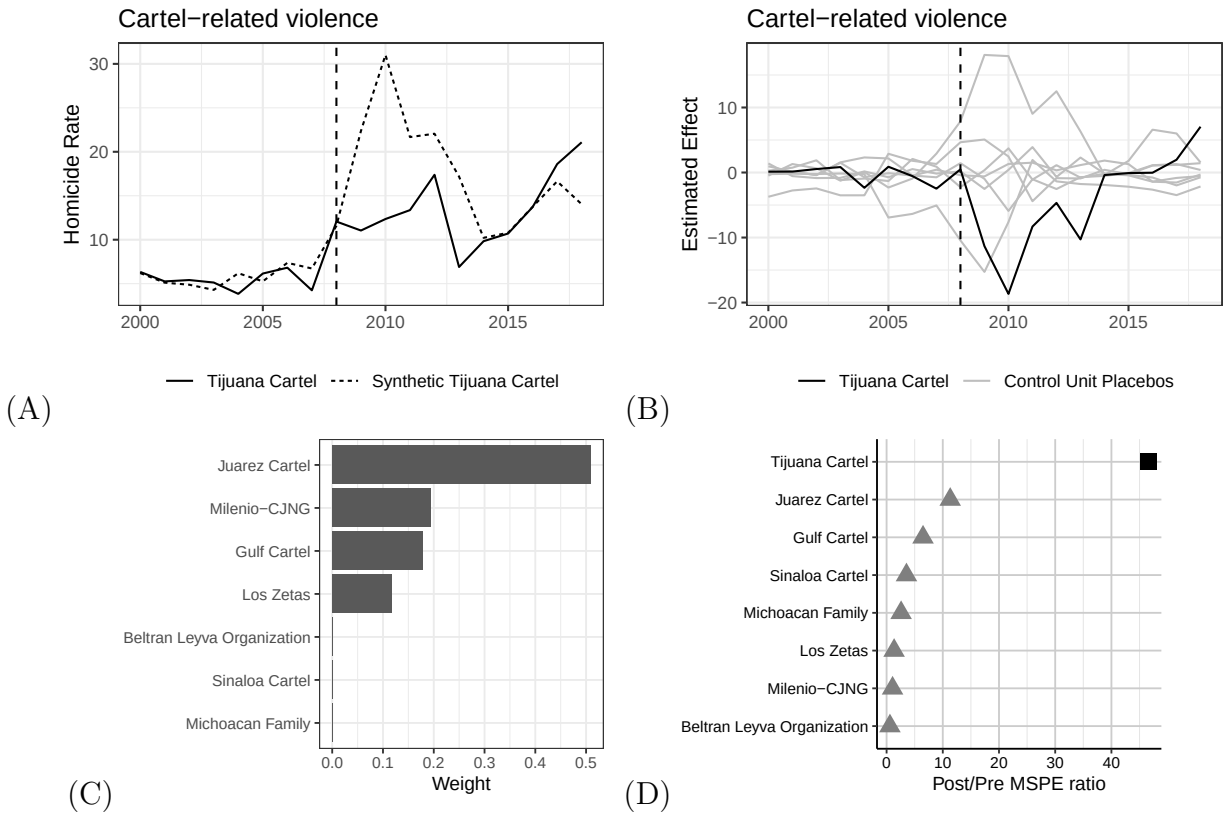

Figure 1: Results for cartel-related homicides. (A) Tijuana Cartel and synthetic control outcome trends. (B) Main effect and placebo effects. (C) Donor pool weights. (D) MSPE for treated and control units. Vertical lines in (A) and (B) denote last pre-treatment year.

have needed to showcase her coercive powers following the arrest of the last male figurehead in the Tijuana Cartel. Nevertheless, even considering the 2014-2018, the negative effects of Enedina's reign are substantively large, with the mean cartel-related homicide rate in the post-treatment period being 13.5 for the Tijuana Cartel and 17.97 for the synthetic Tijuana Cartel. These results are robust to a series of tests. As Figure 1 shows, the synthetic control is a good fit according to the pre-treatment trends, the distribution of the placebo effects, and the MSPE ratio. In the Online Appendix we also show that they are also robust to the leave-one-out test and backdating.

Second, disappearances under Enedina seem to have increased much more than the counterfactual between 2011 and 2012 in the aftermath of the war against García Simental, suggesting she may have used less visible forms of violence to retake control over her territories. This indicates that Enedina is not incapable of coercion, but instead prefers more subtle, lower-profile violence. Yet, the overall effect is not robust and seems to be null, pointing to her perpetrating fewer homicides but the same number of disappearances as her male counterparts.

Third, we find that the Tijuana Cartel under Enedina is also associated with fewer homicides of young women during the first seven years of her leadership, with these homicides increasing significantly starting in 2016. Before this sharp increase, the mean post-treatment homicide rate of young women was 0.9 for the Tijuana Cartel and 1.25 for the Synthetic Tijuana Cartel, though this difference is essentially erased with the substantial increase after 2015. The increase of violence against women also coincides with the arrest of her nephew, though with a year lag. Moreover, even before 2016, the difference between the Tijuana Cartel and its counterfactual is not as large for violence against women than those of cartel-related violence or territorial presence, perhaps suggesting the entrenched nature of patriarchal norms that have allowed violence against women to increase in Mexico over the past two decades and make it hard for Enedina to combat this form of violence.

Fourth, results show that Enedina appears to have used less violence against the state, though these results are less robust given the small number of pre-treatment assassinations. However, they do suggest that Enedina had a less violent approach to dealing with the state. Estimates suggest that Enedina's reign up to 2018 averaged 1.9 assassinations per year, while the counterfactual has a post-treatment mean of 7.9. These results may suggest both her less violent approach and less

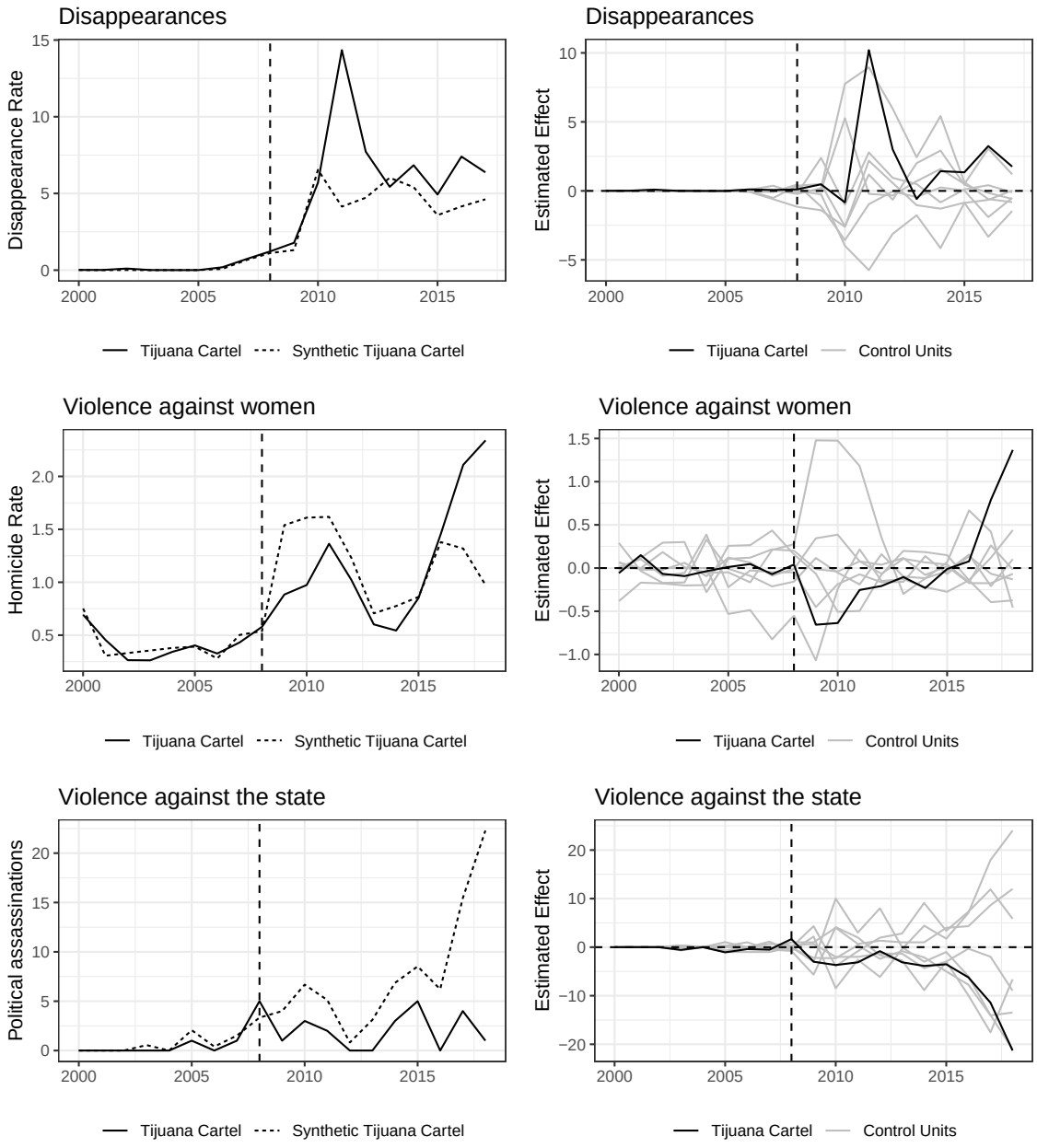

Figure 2: Results for disappearances, violence against women, and assassination of politicians. Trends show the Tijuana Cartel and its synthetic control. Vertical line denotes the last pre-treatment year.

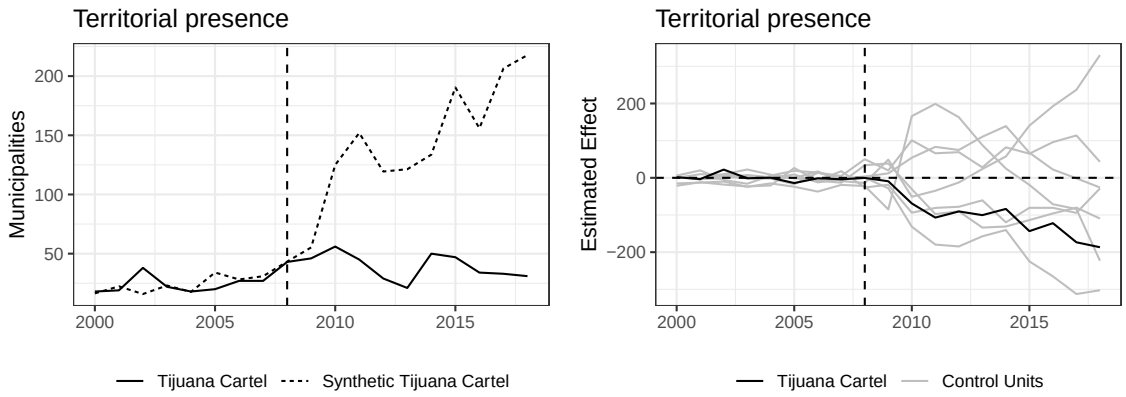

Figure 3: Results for territorial presence. Trends show the Tijuana Cartel and its synthetic control. Vertical line denotes the last pre-treatment year.

scrutiny from the state leading to less need to violently confront the state. However, results on drug interdiction (see below) show no effect, casting doubt on the latter.

Turning to territorial presence, results show a clear divergence, more than for other results. The Tijuana Cartel did not expand geographically like other cartels under Enedina, suggesting that they instead entrenched their presence and operations in their strongholds. This effect could be due to different explanations. It could reflect an explicit decision by Enedina to strategically remain in their strongholds, it could reflect her inability to effectively use the coercive means of the cartel to extend their territorial presence, it could be due to male subordinates who wield coercive means refusing her orders to expand, or a weakening given the arrest of the last male sibling and an inability to expand. Given the secretive nature of organized crime, it is difficult for us to parse these explanations and attribute the effect to one of them. However, we find no indications of internal mutinies, fragmentations, or new attacks from rivals that would have weakened the Tijuana Cartel when Enedina gains leadership. In fact, she gained leadership during a deadly war and was able to win that war within two years.

One concern is that the differential uses of violence and territorial presence may not be due to changes in violent behavior by Enedina, but changes to the drug business or drug enforcement against the Tijuana Cartel. Figure 4 plots the results for both measures of drug interdiction and shows no effect on the amounts of drugs seized in territories where the Tijuana Cartel operated. Since interdiction numbers reflect both government actions and drug flows by cartels, these results

could stem from different explanations. One interpretation is that the rise of Enedina did not affect the government's anti-drug operations in territories where the Tijuana Cartel operated. Alternatively, they could indicate that the Tijuana Cartel's drug trafficking operations were unaffected by Enedina's reduced violent behavior. If less attention was given the Tijuana Cartel with the rise of a woman to leadership and this resulted in a fewer proportion of their drug shipments being interdicted, they could also indicate that the Tijuana Cartel began trafficking more drugs under Enedina. Given existing data limitations, it is difficult to adjudicate between these interpretations. However, they clearly indicate that the reduced levels of violence and territorial expansion are not a result of the Tijuana Cartel trafficking fewer drugs or the government interdicting fewer or more of their drugs.

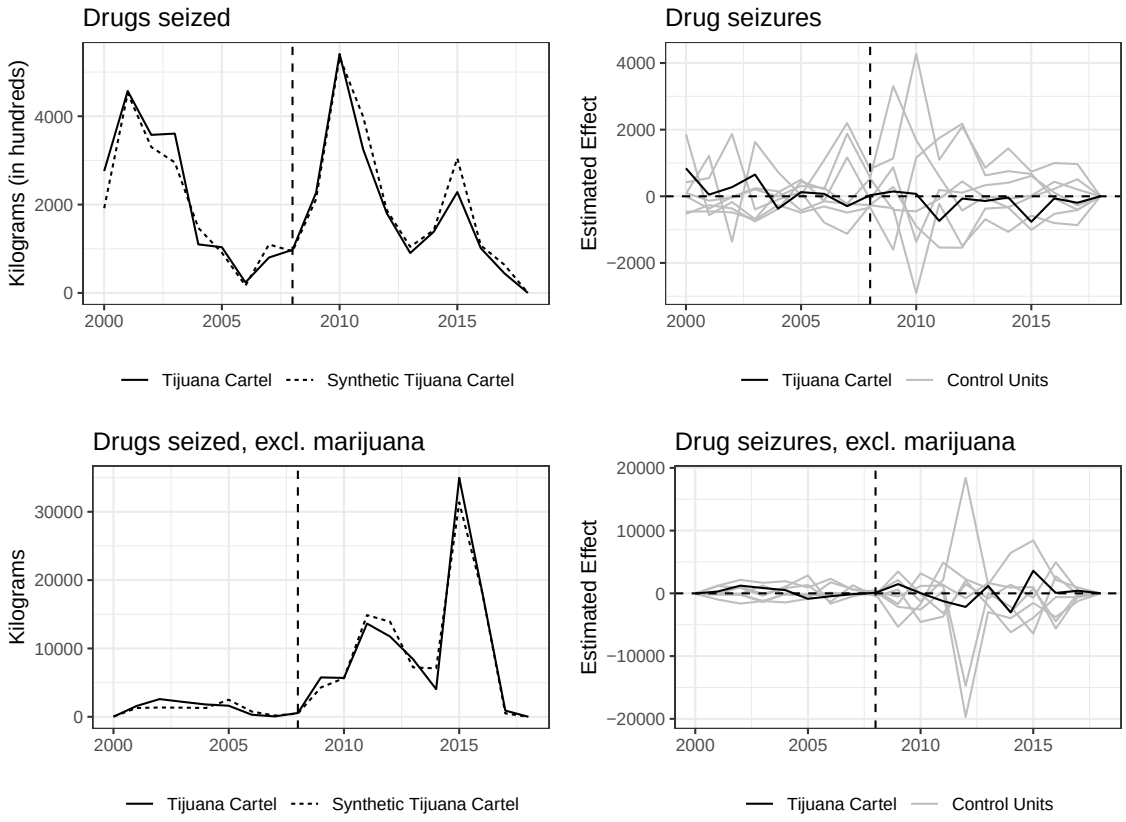

Figure 4: Results for government drug interdiction. Trends show the Tijuana Cartel and its synthetic control. Vertical line denotes the last pre-treatment year.

Overall, the results indicate that the Tijuana Cartel under Enedina was less violent, though not in more obscure forms of violence (i.e., disappearances), confronted the state less, and victimized

fewer women than the synthetic Tijuana Cartel. This differential use of violence may also have impacted territorial presence, as the Tijuana Cartel under Enedina did not expand to new territories like the counterfactual. We have argued that these results are driven by gender dynamics that shape women leader's violent expectations, socialization, skill development, and ascension. However, key alternative explanations exist. First, self-selection could mean that women gain leadership in organizations that are less violent or during periods of declining violence. This concern is addressed by the SCM, which accounts for pre-leadership outcome trends and leverages the arrest of a male leader, plus Enedina rose to power amidst a deadly war. Second, women may disproportionately lead less militarized organizations, which could explain lower violence. The SCM accounts for this by including the Tijuana Cartel's pre-woman leadership period and constructing a synthetic control with male-led organizations. Finally, a decline in violence could reflect changes in reporting patterns, especially if women leaders operate in ways that discourage publicized violence or gender biases result in fewer reports on women. We circumvent this worry by using data that does not rely on reporting.

7 Generalizability of Results

We contend that to the extent that the trajectories of women leaders follow those outlined in the theory and share similar characteristics with Enedina Arellano Félix, then our results are likely to generalize to these cases. To assess the potential generalizability of our findings beyond contemporary Mexico and our specific treated unit (Tijuana Cartel under Enedina), we create a novel qualitative dataset of 42 women who have led their own criminal organization from across 6 continents and 16 countries from 1850 to the present. Through in-depth research, we create short case studies for each, collecting data on key gendered characteristics the literature associates with their gendered experiences, leadership, and violent behavior, and analyze their similarities and differences. We track the following characteristics:

Background information: i) Country of operation and name of criminal organization, if applicable. ii) Leadership period. iii) Main illicit market criminal organization is involved in. iv)

Are the organization's operations and reach extended, moderate, or limited.[7] *Entry*: i) Was their entry into organized crime through a (male) kin or self-initiated? *Pre-leader roles*: i) Did they hold positions associated with exercising violence during their criminal career before ascending to leadership. ii) Their position in the criminal organization prior to ascending to leadership or, in the case of founders, their occupation before establishing their criminal organization. *Leadership*: i) Once in power, did they have an important male right-hand that clearly benefited their nascent leadership. ii) Was their ascendance to leadership seen as legitimate as a result of their kinship with the previous leader and if so, from whom did they inherit this legitimacy.[8]

To our knowledge, this is the most comprehensive data on women leaders compiled to date.[9] Our sample does not represent the universe of cases and it is unclear how it compares to it. The Appendix includes case selection details, a full list of sources used to construct each case study, and the potential impacts of gender bias in reporting that may affect the information we collect.

Table 1 presents the main findings. We find that the most influential factor differentiating women leaders are the distinct pathways to leadership, so we organize the table according to how women ascended to leadership. Centrally, we find that the 18 women who ascend to leadership following the arrest or death of a male relative exhibit a consistent trajectory: they enter organized crime due to a male kin, exercise influence through male kin prior to leadership, occupy relatively privileged positions within the organization, often hold gendered, non-violent roles, and tend to take over powerful and well-established criminal organizations. This trajectory closely mirrors that of Enedina Arellano Félix, whose rise to leadership of the Tijuana Cartel exemplifies the gender dynamics shaping women's pathways to power. These findings span countries, types of criminal organizations and illicit markets, and historical periods, suggesting that the proposed theory is broadly applicable to this subset of women leaders.

We unexpectedly identify four other paths to leadership that deviate from the theorized pathway: 18 women found their own criminal organizations, two exhibit a hybrid pattern where they

[7] We roughly categorize the "power" of each criminal organization based on their market, membership, geographic reach, and influence

[8] Unfortunately, while we would ideally be able to measure other factors from the theory, including violent expectations and gender bias by law enforcement, data limitations prevent us from doing so.

[9] Gillespie et al. (2024) offer the most comparable dataset, focusing on "36 female drug lords." However, their dataset primarily includes non-leadership high-level women, whereas ours exclusively features women *leaders*.

Table 1: Women leaders and key factors identified by literature that may shape their violent behavior.

Woman leader	**Background**				**Entry**	**Pre-leader roles**		**Leadership**	
	Country (criminal organization)	*Leadership period*	*Type of market*	*Organization reach*	*Entry*	*Violent roles*	*Position*	*Male support*	*Inherited legitimacy*
Inherited Leadership from Male Kin									
Enedina Arellano Félix	Mexico (Tijuana Cartel)	2008 - present	Drugs	Extended	Brothers	No	Finance	Nephew	Brothers
Raffaella D'alterio	Italy	2002 - 2012	Drugs	Extended	Husband	No	High-rank	No	Husband/ father
Raquel de Oliveira	Brazil	1998 - 2005	Drugs	Extended	Husband	Yes	High-rank	No	Husband
Sebastiana Cottón Vásquez	Guatemala	2011 - 2014	Drugs	Limited	Husband	No	High-rank	No	Husband
Marllory Chacón Rossell	Guatemala	2002 - 2014	Drugs	Extended	Husband	No	Finance	No	Husband
Yoshiko Matsuda	Japan (Matsuda-Gumi)	1946 - 1947	Extortion	Limited	Husband	No	Ane-san	No	Husband
Chizue Anzai	Japan	1980s - ?	Drugs	Limited	Husband	No	Ane-san	Husband	Husband
Paola Torrisi	Italy (Laudani Clan)	1992 - 2016	Drugs	Extended	Family	No	NEI	Uncle	Father
Maria Scuderi	Italy (Laudani Clan)	1992 - 2016	Drugs	Extended	Family	No	NEI	Torrisi's uncle	Family
Concetta Scalisi	Italy (Laudani Clan)	1992 - 2016	Drugs	Extended	Family	No	NEI	Torrisi's uncle	Family
Jasiane Silva Teixeira	Brazil	2014 - 2019	Drugs	Extended	Husband	No	NEI	Husband	Stepfather/ husband
Thelma Wright	USA	1986 - 1991	Drugs	Extended	Husband	No	Drug distributor	No	Husband/ boyfriend
Perrion Roberts	USA	1984 - 2004	Drugs	Limited	Boyfriend & cousin	No	Drug dealer	No	No
Maria Angela di Trapani*	Italy (Resuttana Clan)	2017	Drugs	Extended	Husband	No	High-rank	No	Father/ husband
Vũ Thị Hoàng Dung (Dung Hà)	Vietnam	1990 - 2000	Illegal Casinos	Extended	Boyfriend	No	High-rank	No	Boyfriend
Simone Jasmin	South Africa (The Cartel)	20XX - 2020	Drugs	Limited	Boyfriend	No	NEI	No	No
Fumiko Taoka	Japan (Yamaguchi-gumi)	1981 - 1984	Extortion	Extended	Husband	No	Ane-san	No	Husband
Isel Suñiga	Guatemala (Los Pochos)	2019 - present	Drugs	Extended	Father	No	NEI	Husband	Father
Olive Yang+	Myanmar	1952 - 1963	Drugs	Extended	Self-initiative	Yes	Rebel	No	Family

Notes: NEI = Not enough information. *Did not succeed male kin, but did succeed male leader due to husband's ties. +Although born a woman, Olive adopted a male gender identity and made his followers use masculine pronouns.

Table 1 Continued: Women leaders and key factors identified by literature that may shape their violent behavior.

Woman leader	**Background**				**Entry**	**Pre-leader roles**		**Leadership**	
	Country (criminal organization)	*Leadership period*	*Type of market*	*Organization reach*	*Entry*	*Violent roles*	*Position*	*Male support*	*Inherited legitimacy*
Founded Criminal Organization									
Maria Serraino	Italy (Serraino-Di Giovine clan)	1960 - 1994	Drugs	Limited	Self-initiative	No	Goods smuggler	Sons	Father
Angie Sanclemente	Mexico-Argentina	2009 - 2010	Drugs	Extended	Self-initiative	No	Model	Husband	No
Cheng Chui Ping	US-China	1981 - 2000	Human Smuggling	Moderate	Self-initiative	No	NEI	No	No
Delia Patricia Buendía	Mexico (Neza Cartel)	19XX - 2002	Drugs	Extended	Self-initiative	No	Drug dealer	Mentor	No
María Dolores Estévez Zuleta	Mexico	1919 - 1957	Drugs	Extended	Mother	No	Mule	Husband	No
Luz Irene Fajardo Campos	Mexico	2010 - 2017	Drugs	Extended	Self-initiative	No	NEI	No	
Griselda Blanco	Colombia-USA	1960 - 1985	Drugs	Extended	Husband	Yes	Prostitute	Husbands	No
Yang Fenglan	Tanzania	1998 - 2014	Ivory	Moderate	Self-initiative	No	Trade representative	Co-leaders	No
María Dolores MG	Spain (Clan de La Loles)	? - 2023	Drugs	Moderate	NEI	NEI	NEI	No	No
Jemeker Thompson-Hairston	US	1980 - 1992	Drugs	Extended	Husband	No	Distributor	No	No
Mery Valencia de Ortiz	Colombia-USA	Mid-1980s - 1997	Drugs	Extended	NEI	NEI	NEI	No	No
Shashikala Patankar	India	1980 - 2015	Drugs	Moderate	Self-initiative	No	Milk adulterer	Boyfriend	No
Matilda Mary Devine	Australia	1927 - 1968	Prostitution	Limited	Self-initiative	No	Prostitute	No	No
Kathleen Leigh	Australia	1919 - 1954	Drugs & Alcohol	Limited	Self-initiative	Yes	Prostitute	No	No
Stephanie St. Clair	US	1916 - 1938	Numbers Racket	Limited	Self-initiative	No	Domestic worker	Co-leader	No
Xie Caiping	China	2000 - 2009	Illegal Casinos	Extended	Self-initiative	No	Tax officer	Brother in law	No
Fredericka Mandelbaum	US	1850 - 1884	Fencing	Limited	Self-initiative	No	Shop owner	No	No
Mary Carr	England (Forty Thieves)	Late 1800s - 1920	Fencing	Limited	Self-initiative	NEI	NEI	No	No

Notes: NEI = Not enough information.

Table 1 Continued: Women leaders and key factors identified by literature that may shape their violent behavior.

Woman leader	**Background**				**Entry**	**Pre-leader roles**		**Leadership**	
	Country (criminal organization)	*Leadership period*	*Type of market*	*Organization reach*	*Entry*	*Violent roles*	*Position*	*Male support*	*Inherited legitimacy*
Helped Found Criminal Organization then Inherited Leadership from Male Kin									
Maria Licciardi	Italy (The Licciardi)	1994 - 2001, 2011 - 2021	Drugs	Limited	Self-initiative	No	Finance	Brothers	Brothers
Ignacia Jasso	Mexico	1930 - 1970s	Drugs	Extended	Husband	No	Finance	No	Husband
Took Leadership from Male Partner									
Saleha Saed	England (The Fat Boy Line)	2021 - 2024	Drugs	Limited	Boyfriend	No	High-rank	NEI	No
Rose Ranks to Leadership									
María Baldemar León	US (Avenues Gang)	1986 - 2008	Drugs	Limited	Self-initiative	Yes	Trafficker	No	No
Alice Diamond	England (Forty Elephants)†	1910s - 1930	Theft	Limited	Self-initiative	No	NEI	No	No
Lillian Rose Kendall	England (Forty Elephants)†	1930 - 1939	Fencing	Limited	Self-initiative	No	NEI	No	No

Notes: NEI = Not enough information. †All-female organization.

co-found the organization with a male kin before inheriting leadership form them, three rise through the ranks to assume leadership, and one seized control from her male kin.

The women who found their own criminal organizations typically begin as low-level offenders, often experiencing private violence, and rise to leadership by establishing and building their own enterprises. Unlike inheritors, they largely enter organized crime on their own initiative and lack positions of privilege or high-level connections prior to leadership, perhaps explaining why they often lead criminal organizations with less reach than inheritors. Moreover, unlike most inheritors, women founders tend to have very violent reputations. Not only do these leaders necessitate further research as they are largely excluded from existing research,[10] but they delineate a clear scope condition for our findings.

We identify only three cases of women rising through the ranks to leadership—a path common for men—though in two of these instances they did so within the same all-female organization. This indicates that it is easier for a woman to create her own space in the underworld than to rise through the ranks and take over a man's. Additionally, we find one case of a woman forcibly seizing control from her male partner. These patterns underscore the structural barriers limiting women's ascension in organized crime: they typically either inherit leadership from male kin or establish their own criminal syndicates. Without male familial connections to leverage and crises that hinder male leadership, breaking the glass ceiling in patriarchal criminal structures remains nearly impossible.

Additional findings provide interesting insights about gender dynamics in organized crime. First, drug markets appear to be especially conducive to women leadership. This could reflect the visibility bias stemming from operating in such a lucrative market or an actual underlying distribution. Second, many women leaders involve their family members in their operations, perpetuating criminal dynasties. This familial involvement is especially pronounced among inheritors but is also evident in some founders. Third, market characteristics appear to influence women's paths to leadership, as women inheritors overwhelmingly operate in drug markets while founders sometimes operate in other markets (e.g., human trafficking, prostitution, gambling, and fencing).

[10]Women founders are also overlooked in the rebel group literature, with Loken (2024) only recently identifying nine cases. Interestingly, these differ from criminal founders as they are largely women with relative privilege.

Fourth, these women are important figures in the criminal underworld, often amassing incredible power, but their roles and influence are often downplayed, underappreciated, or underreported.

8 Conclusion

This article argues that women leaders whose trajectories are shaped by gender dynamics are less likely to use violence and pursue more limited territorial operations than their male counterparts. Focusing on the Tijuana Cartel in Mexico and the ascension of Enedina Arellano Félix to leadership following the arrest of her brother in late 2008, we show that Enedina's leadership resulted in less cartel-related violence, violence against women, violence against the state, and limited geographic expansion, but no effect on disappearances. Through 35 case studies of other women leading criminal organizations, we find that those who attain power by succeeding male kin closely resemble Enedina and follow the gendered pathways outlined by existing research, suggesting that our results likely generalize to similar cases.

This article makes important contributions and provides clear avenues for further research. First, it advances academic scholarship by bringing attention to gender and gender dynamics within organized crime. This article provides the first, to the best of our knowledge, quantitative analysis on the effects of leadership and women involvement in organized crime. It is also one of the first studies in political science on gender and organized crime, a topic that has received scant attention despite a burgeoning literature on organized crime, ample anecdotal accounts of women involvement, frequent mentions of the hypermasculinity underpinning organized crime, and the common nexus between organized crime and gender-based violence. Explicitly recognizing the degree to which organized crime is a patriarchal and masculine space unequivocally helps us better understand the phenomenon and offers a much-needed addition to existing research that often leaves gender dynamics implicit or simply excludes them.

Second, our qualitative case studies identify two distinct pathways for women to assume leadership roles: those who succeed male kin and those who establish their own independent criminal organizations. The latter group is largely neglected in existing research. These women have systematically different experiences than those who inherit leadership from male kin and appear to

have more violent reputations as a result, marking a clear scope condition to our findings. Understanding the potential consequences of these women's leadership represents an important avenue for further study.

Third, while this article focuses on the violent and territorial consequences of women leadership, their leadership likely matters for other important outcomes, such as internal governance and how they rule over the individuals in their organizations, market governance and how they govern non-members crucial for controlling illicit markets, and civilian governance and how they rule over civilians within their territories. Future research could investigate these dynamics.

Finally, policy implications are equally significant. Our findings challenge the prevailing understanding that leadership decapitation invariably escalates criminal violence. The rise of women to leadership in organized crime represents an unintended consequence of government strategies targeting male leaders. Policymakers should account for these dynamics when designing interventions, recognizing that the consequences of leadership transitions may vary significantly depending on who the successor may be. Our evidence suggests that leadership decapitations that result in a women taking power may exert a stabilizing influence under certain conditions. These insights could inform more nuanced approaches to combating organized crime and mitigating violence.

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