Taking the Bang Out of the Gang: The Impact of Catholic Schools on Gang Homicides in El Salvador

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Abstract (100-150 words): This study explores the impact of Catholic presence on homicide rates in El Salvador, specifically focusing on the role of Catholic schools in reducing violence in gang-afflicted municipalities. Analyzing municipality-level data from various years, I used Ordinary Least Squares (OLS) and Instrumental Variable (IV) regressions to study the association between school enrollment and homicide rates. Results show that higher enrollment in Catholic schools is linked to a reduction in homicide rates in gang-affected areas, contrasting with an increase in homicides for non-religious schools. This research sheds light on the importance of investing in Catholic education as a strategy for violence prevention and community development in El Salvador.

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1. Introduction

The small Central American nation of El Salvador has long been plagued by high rates of homicide, with gang violence being a prominent contributing factor. Since 1994, the country has recorded high rates of homicides per inhabitants of any country in the world: ranking first to fourth highest in the years until 2019, and in the recent years ranking twelfth, sixteenth and nineteenth (2020-2022, respectively) (UNODC, 2024). In this context, various institutions, including the Catholic Church, have made substantial efforts to mitigate violence and enhance social cohesion.

Historically, the Catholic Church has been influential in El Salvador, contributing to social and moral guidance and even facilitating peace initiatives such as the 2012 gang truce, which temporarily decreased homicide rates. Catholic schools provide not only academic education but also moral and ethical teachings, which are crucial in regions afflicted by gang violence. These schools often involve themselves in broader community development efforts that potentially deter criminal behavior. This thesis examines the role of the Catholic Church, particularly through Catholic schools, in influencing homicide rates in El Salvador. It investigates whether increased enrollment in Catholic schools correlates with reductions in local homicides, particularly in municipalities with longstanding histories of gang violence. The study aims to determine how faith-based educational initiatives can contribute to violence prevention and strengthen community resilience.

Gang activity in El Salvador, exemplified by groups such as MS-13 and Barrio 18, traces back to the civil unrest of the 1980s. This period of instability, compounded by mass deportations from the United States in the 1990s, laid the foundation for the expansion of gang culture. The socio-economic disruptions resulting from the civil war and subsequent deportations created fertile conditions for gang recruitment and growth. This study suggests that the presence of gangs in certain municipalities is not solely a contemporary issue but is rooted in historical patterns of violence. This hypothesis is supported by an instrumental variable regression analysis using 1915 homicide rates by department/municipality as an instrument for present gang presence, showing that areas with historical propensities for violence continue to face gang-related challenges.

The dynamics between religious institutions and crime are critical for stakeholders seeking to address persistent violence in El Salvador. By employing an instrumental variable regression approach, the study provides insights into the potential benefits of religious
education in regions with high crime rates. The focus is on the impact of enrollment in Catholic schools on local homicide rates, contributing to broader discussions on how non-state actors influence public safety and social outcomes.

Additionally, the study argues that gang violence in El Salvador has deep historical roots. Demonstrating that municipalities with higher homicide rates in 1915 tend to be gang-prone areas today highlights the enduring impact of historical violence on contemporary crime patterns. This perspective is vital for understanding gang violence persistence and devising interventions that tackle these deep-seated issues.

The findings of this research have significant policy implications and can guide community initiatives. They suggest that enhancing the presence and quality of Catholic education could be an effective strategy for reducing violence in El Salvador. The study also underscores the importance of historical context in understanding and addressing modern crime, advocating for policy and community strategies that recognize and intervene in the legacy of past violence to create more effective and sustainable solutions.

Following this introduction, Section 2 describes the historical background, providing context of Catholic presence, gangs, and homicide rates in El Salvador. Section 3 presents the data and methodology. In Section 4 I interpret the results of OLS and IV regressions, finding that moving from secular to religious enrollment is associated with a reduction in local homicide rates in gang areas. Section 5 summarizes and concludes.

2. Historical Background

2.1 Country Context

El Salvador has a population of 6.33 million in 2022 (World Bank, 2024). Situated in Central America, the country is composed of 14 larger administrative divisions and 262 municipalities. El Salvador has shown modest economic growth, with a GDP per capita of US$5,127.3 and an annual GDP growth rate of 2.6% (World Bank, 2024). The economy is supported by sectors like agriculture, manufacturing, services, and remittances. Despite progress, challenges persist—high levels of crime and violence hinder development and investment.

2.2 Catholic Presence
Like in most Latin American countries, the Catholic Church has a significant presence in El Salvador, with approximately 43.3% of Salvadorans identifying as Catholic as of 2021 (Office of International Religious Freedom, 2022). This strong Catholic presence is reflected in the numerous dioceses, churches, and priests that serve the faithful throughout the country. Additionally, the Catholic Church plays a vital role in the education sector, with the establishment of Catholic schools that contribute to the religious and academic development of students.

The Catholic Church established its presence in El Salvador during the colonial era, following the Spanish conquest of the region in the early 16th century. The initial Catholic missionaries to arrive were members of the Franciscan order, who accompanied Spanish conquistadors and settlers as part of Spain’s mission to evangelize and convert indigenous populations to Christianity (Fernández-Morera, 2019). At the time, the region was inhabited by indigenous peoples, including the Pipil and Lenca tribes. The Spanish conquest led to significant upheaval and disruption in indigenous societies, along with the imposition of Spanish colonial rule, forced labor, and the introduction of European diseases, which had devastating effects on indigenous populations (Lovell, 2005). The Church played a central role in colonial governance, education, and religious practices, influencing the beliefs and customs of the Salvadoran population (Stanley, 1996).

Throughout history, the Catholic Church has played a vital role in El Salvador, particularly in social and political movements that it has emerged as a prominent advocate for human rights (Levine, 2009) In times of crisis, such as refugees and internal migrants seeking refuge from violence, churches have often provided essential community support and aid in new neighborhoods. The Church’s influence has been instrumental in mobilizing the marginalized sectors of society for political action (Grenier, 1999).

After the Civil War, the Catholic Church in El Salvador supported peace and social justice efforts by aiding communities impacted by violence and promoting dialogue. However, differing views on issues in human rights and politics occasionally strained the Church’s relationship with the government. Liberation theology arose to tackle social injustices, encouraging citizens to speak out. Church groups participated in political advocacy, calling for land rights and better working conditions, which drew increasing repression from the Salvadoran government. Priests who espoused liberation theology became specific targets;
during 1976 and 1977, more than 25 Catholic priests were either imprisoned, tortured, or killed.

Numerous studies have delved into the intricate connection between religious presence and criminal activities, offering a spectrum of insights that underscore the complexity of this relationship. Religion might work through persistence translating to positive economic outcomes, which indirectly affect violence and crime (Caicedo, 2018). Moreover, moral beliefs and self-control can act as mediating factors, suggesting that a strong religious inclination may exhibit lower propensities towards engaging in criminal behavior (Harris et. al, 2015; Brauer, 2013). The effect of religion on crime might also vary across religions and age groups; for instance, it has been found that Catholic adherence is associated with reduced adult violence but not juvenile violence, while Evangelical Protestant adherence is negatively associated with juvenile violence but not adult violence (Harris et. al, 2015).

In education, research examining the role of Catholic schools in crime prevention has yielded mixed results. Education is widely recognized as a protective factor against violence, particularly homicide, within communities (Lochner and Moretti, 2004; Curtis and Ingram, 2014). Educational institutions create safe, conducive environments that deter criminal activities among young individuals. Directly, if children are in schools, they are less likely to engage in criminal activities as both perpetrators and victims. This prolonged exposure to educational settings not only fosters personal development but also diverts individuals from potentially harmful environments on the streets. Catholic schools hold the potential to enhance neighborhood stability and curb crime (Viteritti, 2014). It has been suggested that the closure of Catholic schools may inadvertently contribute to increased crime rates (Brinig, 2010, 2011; Garnett, 2010, 2011). However, other studies have found no conclusive evidence that Catholic schooling reduces risky behaviors among teenagers (Mocan, 2002).

Indirectly and in the long term, it is evident that higher levels of educational enrollment and attainment contribute to creating a safe and socially controlled environment for individuals, especially young men. Education plays a crucial role in empowering individuals to make informed decisions regarding their livelihoods and interactions within society. Better-educated populations are more equipped to secure stable employment, navigate available opportunities, and overcome adversities, thereby reducing the likelihood of engaging in criminal behavior. Education also enhances individuals' abilities to assess the
consequences of criminal actions, such as the risks of losing employment or facing incarceration. This heightened awareness serves as a deterrent against violent crime, particularly homicide, due to the significant personal costs involved.

El Salvador has a diverse non-state education sector that includes private Catholic schools (Consejo Educativo Católico Escolar (Catholic Education School Council, or CECE)), subsidized by the government, as well as low-cost religious schools of various denominations. The Ministry of Education (MINED) figures report an average of 7.5 percent faith-based educational institutions, with Catholic and Protestant schools comprising 4.5 and 2.9 percent of all educational institutions. Out of 6,030 schools in 2023, 290 were Catholic and 181 were Protestant. Enrollment in faith-based educational institutions has been steadily increasing over time. In 2023, enrollment was divided into 86.5 percent non-religious (including public and non-faith-based private providers), and 13.5 percent faith-based, the majority of which are either Catholic or Protestant.

Faith-based and other low-fee private schools, except CECE schools, are often overlooked by the Ministry of Education and donors due to being perceived as for-profit ventures (USAID, 2023). Despite this, these schools play a crucial role in promoting access to education and supporting public education efforts. While only CECE schools receive subsidies from the public education budget, other low-fee and faith-based schools serve similar communities and offer comparable services. Faith-based organizations form valuable connections within local communities and enhance the educational experience by contributing to socioemotional learning, workforce development, and education project implementation, ultimately strengthening public education systems.

2.2 The Origins of Gangs
Gangs in El Salvador have historical roots traced back to family clans battling for territory. In the United States, the White Fence gang, initially a pro-Social Mexican group, formed in a Los Angeles church in the 1920s and became more violent and territorial by the 1940s (Offutt, 2023). The term “mara” was first coined in El Salvador in 1954 and by the 1960s, maras were groups of friends in churches and schools. As political and social unrest escalated in El Salvador, maras evolved into more violent groups, culminating in the civil war that started in 1980.
The deportation of Salvadoran youth from the United States in the 1990s, particularly those involved in gangs and criminal activities in Los Angeles, is often considered a key factor in the rise of gangs in El Salvador (Ambrosius, 2021; Sviatschi, 2022). The Mara Salvatrucha Stoners (MSS) gang was established by Salvadorans in LA in the mid-1970s, with members also coming from the Clanton 14 and 18th Street (Barrio 18 or B18) gangs. MSS and B18 were initially allies in the 1980s, with members having family ties across the gangs. However, a rivalry began in 1989 when a brawl resulted in a B18 member killing an MSS member, sparking a series of revenge killings (Offutt, 2023). In 1993, MSS joined the Mexican Mafia and changed its name to MS-13, with the “13” symbolizing the 13th letter of the alphabet, “M.” By the late 1990s, the “Letters” (MS-13) and “Numbers” (B18) had become the dominant gangs in El Salvador, with MS-13 establishing its global headquarters in the country's prisons in the early 2000s. Only a few smaller gangs persist today (Amaya and Martínez 2014).

The global reach of gang activities has introduced a new dimension to the turf conflicts in El Salvador. Gangs have leveraged advancements in globalization and communication technologies to extend their sway beyond national borders, fostering cross-border collaborations and partnerships with other criminal enterprises in the United States, Mexico, and Central America. This expansion has facilitated the proliferation of organized crime, the illicit trade of drugs and weapons, and the displacement of populations across regional boundaries (Pérez, 2013). The surge in gang turf wars in El Salvador has been fueled by multiple factors, including the profits derived from illicit enterprises, the easy access to firearms and weaponry, and the erosion of social and institutional controls within gang-dominated localities. A combination of deficient law enforcement, rampant corruption, and pervasive impunity has further perpetuated the cycle of violence, granting gangs a sense of invulnerability and fostering an atmosphere of fear and insecurity among the civilian people.

Gangs employ the tactic of “plata o plomo” (money or bullets) to establish control over territories, using bribery and violence to influence authorities. This strategy has allowed gangs to become de facto authorities in many regions, regulating who can enter or exit areas, imposing curfews, and dictating lifestyle rules. Children from vulnerable backgrounds, such as those from poor families or with relatives in the US, are at higher risk of gang recruitment. Gangs coerce young children to engage in criminal activities under the threat of harm to themselves or their families. This control over neighborhoods also disrupts children's access
to education, as they may be prevented from attending schools located in the territory of rival gangs (Musalo, 2019; Offutt, 2023).

Research on El Salvador's gang members and their religiosity or spiritual beliefs reveals a complex relationship. Santa Muerte is recognized as a patron saint among gang members and drug traffickers (Chesnut 2016, 2018). Gang members almost universally believe in God (Offutt, 2023), and 95.3 percent of gang members and former gang members highlighted the importance of their relationship with God (Cruz, 2017). A majority of gang members identify as evangelicals (Cruz, 2017). Moreover, a significant number of gang members perceive their beliefs regarding God to be largely aligned with those of conventional church members (Offutt, 2023).

It has been found that religious coping and spirituality among high-risk and gang-involved youth are linked to reduced levels of violence and substance abuse (Salas-Wright, 2013; Offutt, 2019). Religion can provide a safer path and support desistance: Catholics primarily focus on gang prevention through community development and social programs, whereas Evangelicals primarily advocate for gang members to leave through religious conversion (Ventura, 2017; Gordon, 2017). In most instances, evangelical conversion has been used by gang members to exit without fear of reprisals (e.g. the “morgue” rule), navigate limited job opportunities due to low education levels and public stigma, and address addiction issues linked to the gang lifestyle (Brenneman, 2009). Evangelical organizations also provide programs for the children of gang members within the church (e.g. Children First).

Social marginalization and economic exclusion have been key factors in the growth of gangs in El Salvador. Youth from marginalized and impoverished communities are particularly vulnerable to gang recruitment as they lack access to education, employment, and social support networks. For these individuals, gangs offer a sense of belonging, identity, and protection, providing a form of social capital in the absence of viable alternatives. As gangs gain influence and control over local communities, the competition for territory and resources becomes increasingly intense, leading to violent turf wars between rival factions.

To address the issue of gang violence, the Salvadoran government has implemented a comprehensive range of policies and strategies. These efforts include suppression, rehabilitation, and prevention measures. Aggressive law enforcement measures, often known as “Mano Dura” (Iron Fist) policies, have targeted gangs through crackdowns, enhanced penalties, and specialized police units. Rehabilitation and reintegration programs have been
established to provide alternatives for at-risk youth, including vocational training, educational support, job placement services, and psychosocial counseling. These initiatives aim to offer pathways out of gang life and address the underlying social and economic factors that drive gang recruitment and retention.

Recognizing the importance of prevention, the Salvadoran government has also invested in community-based approaches to address gang violence. These efforts focus on building social cohesion, strengthening family and community ties, and addressing root causes such as poverty, inequality, and social exclusion. Collaboration between government agencies, local authorities, non-governmental organizations, and grassroots community groups is emphasized in these prevention programs. The goal is to promote youth development, civic engagement, and provide positive alternatives to gang involvement.

The role of the Catholic Church and evangelical churches has also been instrumental in gang truces (Dudley, 2013; Stoll, 2013). In 2012, the Salvadoran government, with support from civil society and religious leaders, brokered a truce between rival gangs MS-13 and Barrio 18 to reduce homicides and improve public security. Although initially successful, the truce faced criticism and opposition from political leaders and security forces, ultimately collapsing in 2015. This led to renewed violence as the gangs resumed hostilities in competition for territory and resources.

2.3 Homicide Rates in El Salvador

Since 1994, El Salvador has recorded the highest rates of homicides per inhabitants of any country in the world: ranking first to fourth highest in the years until 2019, and in the recent years ranking twelfth, sixteenth and nineteenth (2020-2022, respectively) (UNODC, 2023). At the national level, these rates range from 8 to 139 homicides per 100,000 people. However, there are multiple municipalities with rates over 100: the capital, San Salvador, reached a high of 1,416 in 2015, and a low of 182 in 2020; Santa Ana, Soyapango and San Miguel also consistently recorded extremely high homicide rates. These communities co-exist with other communities that have extremely low rates of homicide. On average from 2002 to 2021, 56 municipalities out of El Salvador’s 262 did not experience any homicides.

The high levels of violence in El Salvador are often attributed to the proliferation of gangs and organized crime (Sviatschi, 2022; Carcach, 2015). Moreover, this violence has a neighborhood effect (Curtis and Ingram, 2014). Historically, the Salvadoran state has
frequently resorted to extreme violence to uphold the exploitative status quo that serves the interests of economic elites.

Throughout the early 20th century, El Salvador grappled with a multitude of social, economic, and political challenges that contributed to an environment characterized by volatility and instability. Conflicts over land, labor, and political power frequently escalated into violence and bloodshed during this period (Haggerty, 1990). The country's agrarian structure was marked by significant land concentration, with a small elite class of landowners owning large estates. Consequently, the majority of the population, primarily indigenous and peasant communities, faced widespread rural poverty and inequality due to limited access to land and resources. The labor conditions for agricultural workers, especially in the coffee and indigo industries, were harsh and exploitative, with workers enduring low wages, long hours, and poor working conditions, leading to social unrest and labor conflicts (Montgomery, 1995).

Politically, the early 20th century in El Salvador was characterized by a succession of authoritarian regimes, military dictatorships, and oligarchic rule. Periods of political instability, coup attempts, and internal strife were common as different factions competed for power and influence (Haggerty, 1990). Deep-seated social divisions based on ethnicity, race, and class exacerbated tensions, resulting in the fragmentation of Salvadoran society (Montgomery, 1995).

The year 1913 marked the ascent of a political dynasty following the violent assassination of Salvadoran President Manuel Enrique Araujo. From 1913 to 1927, the “Meléndez–Quiñónez dynasty” held the presidency amidst brewing social unrest. In 1920, a coalition of communist and socialist students, teachers, and artisans established the Regional Federation of Salvadoran Workers (FRTS), the nation's first trade union aimed at organizing rural and urban laborers. By the late 19th and early 20th centuries, El Salvador's economy heavily depended on the export of coffee and coffee beans, constituting 75 to 95 percent of all exports by 1929. However, the global collapse of coffee prices due to the Great Depression in 1929 left coffee producers unable to cover production costs or pay their workers, leading to the failure of various coffee plantations and widespread unemployment among workers, with national income plummeting by 50 percent from the previous year (Haggerty, 1990).

In 1932, members of the Communist Party of El Salvador and Pipil peasants initiated a rebellion against the Salvadoran military government in response to widespread social
unrest and the curtailment of democratic political freedoms, particularly following the annulment of the results of the 1932 legislative election. Estimates indicate that approximately 70,000 to 80,000 rebels partook in the rebellion, later known as “La Matanza” (The Massacre). Following the suppression of the revolt, the government conducted large-scale killings in western El Salvador, resulting in the deaths of 10,000 to 40,000 people.

The civil war in El Salvador from 1980 to 1992 primarily pitted the government against leftist guerrilla groups. Rooted in entrenched social, economic, and political inequalities, the conflict was exacerbated by land concentration, widespread poverty, and political repression. Atrocities committed by both government forces and rebel groups during the war resulted in tens of thousands of deaths and mass displacements of civilians. Violence and homicides were rampant during the civil war, as both government forces and guerrilla groups engaged in widespread atrocities. The conflict also paved the way for the proliferation of armed groups and paramilitary organizations, setting the stage for the emergence of youth gangs in the post-war era. Factors such as poverty, unemployment, weak law enforcement, and the presence of transnational criminal organizations further fueled the escalation of gang violence, intensifying social tensions and perpetuating a cycle of violence and instability in El Salvador.

Following the signing of the peace accord in 1992, a series of reforms aimed to curb state violence in El Salvador (Holden, 1996). The armed forces underwent reduction, with their political influence curbed, the judiciary was restructured, and a new civilian police force replaced the three military police forces of the past (Williams and Walter, 1997). However, the development of democratic institutions and practices progressed slowly and unevenly (Call, 2003; Wade, 2016).

Unlike the politically motivated violence of the 1980-1992 conflict, the postwar era was marked by a shift towards criminal violence (Bergmann 2015; Moodie 2010). In the 1990s, homicide rates in El Salvador spiked significantly, with numbers peaking at 138.7 per 100,000 individuals in 1995. At the same time, the United States had initiated stringent immigration crackdowns, leading to the deportation of numerous Salvadoran nationals, many of whom had criminal backgrounds or gang affiliations. This deportation strategy played a pivotal role in the transnational dissemination of gang culture and criminal networks, as deported gang members reintegrated into El Salvador, bringing with them the organizational hierarchy and violent methodologies of US-based gangs (Sviatschi, 2022).
The early 2000s witnessed the implementation of successive administrations’ “Mano Dura” (Iron Fist) policies, designed to combat gang-related violence through aggressive law enforcement tactics, including mass arrests, targeted operations, and harsher penalties for gang-affiliated crimes. These policies, characterized by their heavy-handed approach to crime control, resulted in widespread human rights violations, such as extrajudicial killings, police brutality, and arbitrary detentions. Moreover, the measures had limited success in curbing violence over the long term. Such repressive law enforcement and criminal justice policies have failed to effectively curb armed violence or facilitate essential societal changes (Holland, 2013; Wolf, 2017).

One consequence was the shift towards a society marked by mass incarceration, with the number of prisoners per 100,000 inhabitants skyrocketing from 132 in 2000 to 604 in 2018, making it the second-highest rate globally after the United States (Walmsley, 2018). This surge in incarceration has had a significant impact on the organizational strength of Salvadoran gangs: as the prison population swelled, authorities began segregating inmates based on gang affiliations starting September 2004 (Valencia, 2014). While this measure did lead to a decrease in intra-prison gang violence (Peirce and Fondevila, 2020), it also facilitated the consolidation of gang members from various parts of the country in unprecedented ways. Essentially, the strategy of mass incarceration paved the path for Salvadoran gangs to build cohesive organizations with a reach that spans the nation, both within the streets and the prison system (Lessing, 2017).

A notable approach, however, has been the implementation of gang truces. In 2012, a truce was established among El Salvador's main gangs with crucial support from the government and the Catholic Church (Dudley, 2013). The Gang Truce (“Tregua entre Pandillas”) was brokered to reduce the rate of homicides and extortions in exchange for improved prison conditions and certain visitation privileges. Gangs surrendered their weapons and the government established “peace zones” in several municipalities (Insight Crime, 2013). During the truce, the Funes government supported a mediation team, improved prison conditions, and provided gang leaders with the necessary communication capabilities to direct the truce. This process resulted in an immediate and significant reduction in homicides, dropping 40 percent in the 22 months post-truce compared to the 26 months pre-truce, even achieving the lowest homicide rate since before the start of the civil war (Katz,
The truce was particularly effective in municipalities with high numbers of imprisoned MS13 gang members (Katz, 2016).

The truce gradually broke down in the latter half of 2013 and leading into the early 2014 elections as government support dwindled (van der Borgh and Savenije, 2019). The Salvadoran government neglected its responsibilities to communities during the gang truce process, leading to counterproductive measures that allowed gangs to reorganize and control territories, impacting the daily lives of civilians (Martínez-Reyes and Navarro-Pérez, 2020). In 2015, homicides in El Salvador once again skyrocketed, such that one in every 970 Salvadorans was murdered—the highest rate of homicides per inhabitants in the twenty-first century of any country in the world with more than one million people.

More recently, under the government of President Nayib Bukele, which began in June 2019, homicides dropped by 53 percent over three months and 52 percent over six months. While the administration implemented a multifaceted approach of social programs, economic incentives, and law enforcement measures such as the deployment of military personnel to high-crime areas, a “secret” truce with gangs might have also been negotiated (Foreign Policy, 2023).

3. Data
I use data from multiple sources. The Ministry of Education (MINED) of El Salvador publishes a school census annually containing enrollment at the school level, including indicators for type of school, municipality, department, education level, and total matriculation. The data for years 2006-2011 are publicly available on an archived webpage of the MINED, each year titled “Base de Centros Escolares Censo.” While most variables in the census for these years are similar, only year 2006, 2010 and 2011 contain disaggregated enrollment by sex; from 2007 onwards, more information is added at the school level, for example, the number of sections at each education level and available facilities (water, electricity, internet access, infrastructure). The census appears to primarily serve as a school directory as well as a summary table of enrollment by educational level.

The later years include tables for repeating and overage students by grade and sex, without the number of sections and indicators for facilities. Enrollment for these years is also disaggregated by education level and sex. Data for 2015 is publicly available on the Salvadoran government’s central transparency portal. The data from 2021 and 2023 are from
the MINED, the former retrieved earlier and coded whether each school is Catholic, Protestant, or Religious. This coding is carried over to the same school IDs across years, and refined further by tagging based on school administration (ACE (Asociación Comunal para la Educación), CDE (Consejo Directivo Escolar), CIE (Consejo Institucional Educativo) or CECE (Consejo Educativo Católico Escolar)).

I recreate the map identifying gang areas and leader-born municipalities from Sviatschi (2022) on ArcGIS, following the administrative shapefiles at the municipality level. Annual, national homicide counts and rates per 100,000 people are available at UNODC (2024). At the subnational level, I use counts of homicides compiled by Carlos Carcach and cross-referenced to El Salvador’s annual statistical yearbook, Anuario Estadistico. The Anuario Estadistico further dates back to 1915, with figures at the department level.

While homicides data are complete, the gaps in the school census data allow me to estimate for years 2006-2011, 2015, 2021 and 2023. The analysis employs an instrumental variable (IV) regression approach to address potential endogeneity issues arising from the relationship between gang areas and homicide rates. Following Sviatschi (2022), I use an indicator for whether a municipality has a gang leader born; additionally, I use the historical homicide figures at the department level as a baseline for violence in municipalities.

The baseline model is specified as follows:

\[
Homicides_{it} = \beta_0 + \beta_1 Enrollment_{it} + \beta_2 Gang Area_i + \beta_3 (Enrollment_{it} \times Gang Area_i) + \theta_i + \phi_t + u_{it}
\]

where \(Homicides_{it}\) is municipal-level log homicide rate at year \(t\), \(Enrollment_{it}\) denotes the proportion of enrollment in Catholic (Protestant, non-religious) schools at the municipality level at year \(t\), \(Gang Area_i\) is an endogenous variable at the municipal level, \(\theta_i\) and \(\phi_t\) are municipal and year fixed effects, and \(u_{it}\) is the error term. I include municipal and year fixed effects to control for invariant differences between gang and non-gang municipalities, and for changes in aggregate time trends across years.

To address the endogeneity of \(Gang Area_i\), I specify two first stage regressions, using instrumental variables:

\[
(2) \quad Gang Area_i = \gamma_0 + \gamma_1 Leader Born_i + u_i
\]
\[
(3) \quad Gang Area_i = \delta_0 + \delta_1 Leader Born_i + \delta_2 Historical Homicides_i + u_i
\]
The instrumental variable strategy hinges on the assumption that the historical homicide rate in 1915 and leader born areas affects contemporary homicide rates primarily through its impact on the municipalities, particularly in gang areas. My identification rests on differences in Catholic (Protestant, non-religious) school enrollment within years and this is negatively related to municipal homicides, however, fluctuations in non-religious enrollment are positively related.

4. Results: Does Catholic Presence Reduce Homicide Rates?
Table 1 presents the results of the OLS regressions examining the relationship between school enrollment and homicide rates, with a focus on the interaction between enrollment and gang areas. The results indicate that the coefficient on Catholic Enrollment x Gang Area is negative and statistically significant, suggesting that higher enrollment in Catholic schools is associated with a reduction in homicide rates in gang areas. Similarly, Protestant Enrollment x Gang Area also shows a negative and significant coefficient. In contrast, the coefficient for Non-religious Enrollment x Gang Area is positive and significant, indicating an increase in homicide rates with higher enrollment in non-religious schools.

The first set of IV regressions uses municipalities where gang leaders are born as an instrument for the endogenous Gang Area variable. The IV results in Table 2 confirm the OLS findings, with the Catholic Enrollment x Gang Area coefficient remaining negative and statistically significant. This reinforces the conclusion that Catholic school enrollment has a mitigating effect on homicide rates in gang-dominated areas. Similarly, the coefficient for Non-religious Enrollment x Gang Area is positive and significant. However, while the coefficient for Protestant school enrollment remains negative, it loses its statistical significance in the IV regressions.

The final set of IV regressions includes an additional instrument, historical homicide rates, to further address endogeneity. Table 3 demonstrates that the inclusion of historical homicide rates as an additional instrument strengthens the robustness of previous results. The coefficient on Catholic Enrollment x Gang Area remains negative and statistically significant, providing strong evidence that Catholic school enrollment contributes to reducing homicide rates in gang-affected municipalities. The results for non-religious schools also remain consistent with previous findings.
The results from both the OLS and IV regressions consistently show that increased enrollment in Catholic schools is associated with a significant reduction in homicide rates in gang areas. This effect is robust to different model specifications and the use of multiple instruments. Protestant school enrollment also appears to have a similar, albeit slightly less pronounced, impact. In contrast, non-religious school enrollment is associated with higher homicide rates in gang areas.

5. Conclusion

This thesis has investigated the correlation between Catholic educational institutions and homicide rates in El Salvador, particularly focusing on areas with prevalent gang activities. By adopting a methodological approach that incorporates both Ordinary Least Squares (OLS) and Instrumental Variables (IV) regression analyses, the study has found evidence suggesting that increased enrollment in Catholic schools significantly diminishes local homicide rates in regions heavily influenced by gang violence. This association persists as robust even when addressing potential endogeneity concerns through the use of historical instrumental variables.

The analysis strongly supports the premise that Catholic schools contribute vitally to violence mitigation, likely owing to their commitment to moral education, extensive community involvement, and the establishment of robust social support frameworks. In stark contrast, the findings also highlight that enrollment in non-religious schools may, in fact, contribute to escalating local homicide rates, thereby emphasizing the distinct and positive role that faith-based educational institutions can play in violence prevention.

The implications of these findings are manifold and significant. Most directly, they suggest that policymakers should consider bolstering investments in Catholic educational infrastructures as a strategic approach to curb violence and enhance community safety. The evident success of Catholic schools in mitigating violence implies that faith-based education, not limited to Catholicism but possibly extending to other faith traditions like Protestantism, could be pivotal in cultivating social stability.

Moreover, the historical and social contexts that catalyze gang violence deserve deeper exploration to tailor more effective interventions. For example, understanding the community dynamics that facilitate or hinder gang recruitment could inform the development of targeted educational programs and community initiatives that address specific local needs.
However, the scope of this study, while comprehensive, suggests several avenues for further research. One limitation is the concentration solely on the gross enrollment figures in Catholic schools. Future research could refine this approach by dissecting enrollment statistics further, perhaps examining how enrollment among different demographics (such as young males at critical educational thresholds) correlates with choices between education and gang affiliation. Additionally, investigating the reasons behind student dropout rates could illuminate whether there is a trend of abandoning education in favor of joining gang ranks, thereby offering further insights into the interplay between education and gang involvement.

An exploration into the curricula of Catholic schools could also yield important insights. Identifying specific elements within Catholic education—such as conflict resolution programs, mentorship opportunities, and community service projects—that may actively discourage gang affiliation and encourage peaceful conflict resolution could significantly inform policy and educational practices.

Furthermore, this thesis underscores the importance of examining the broader interplay of soft power in communities where religious institutions and gangs compete for influence. The role of religious conversions, the support structures for former gang members, and the overall impact of religious community engagement on reducing gang violence are all fertile areas for future study.

Finally, the interdependencies between religious institutions and various social factors such as economic conditions, family dynamics, and accessible social services should be integrated into a comprehensive violence prevention strategy. This holistic approach will undoubtedly provide a more complete understanding of the mechanisms through which education and religion can contribute to societal peace and development in El Salvador.

In conclusion, this thesis not only underscores the importance of integrating religious and educational perspectives into strategies aimed at combating violence but also highlights the potential for Catholic schools and similar faith-based organizations to forge substantial progress toward a more stable and prosperous society in El Salvador. Continued research into these areas is essential for evolving effective strategies to reduce violence and enhance the well-being of communities, thereby encouraging ongoing engagement and support from policymakers, academics, and practitioners alike.

5. References


6. Figures

Figure 1. Number of schools by affiliation over time.
Source: Ministry of Education.

**Figure 2. Share of enrollment by affiliation over time.**

Source: Ministry of Education.

**Figure 3. Gang Areas**
Source: Sviatschi (2022).

Figure 4. Homicide Rates Over Time

Source: UNODC (2024)

Figure 5. 2021 Homicide Rates at the Municipality Level
7. Tables

Table 1. OLS Regressions (1)
### Table 2. Instrumental Variable Regression (2): Leader Born

<table>
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<th>(1) Catholic</th>
<th>(2) Protestant</th>
<th>(3) Non-Religious</th>
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<tr>
<td>Enrollment</td>
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<td>[0.0173]</td>
<td>[0.0134]</td>
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<tr>
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<td>-0.0854</td>
<td>0.0969***</td>
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<td>-2.202*</td>
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N = 1579

**Robust standard errors in brackets**

* p<0.05, ** p<0.01, *** p<0.001

### Table 3. Instrumental Variable Regression (3): Leader Born, Historical Homicides

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<td><strong>First-stage F statistic</strong></td>
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<td>40.74</td>
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Robust standard errors in brackets
* p<0.05, ** p<0.01, *** p<0.001