

Bridging Boundaries: Exploring the Interplay of Schools and Communities in Mitigating
Violence

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Dissertation
Submitted to the Faculty of the
Graduate School of Vanderbilt University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

in

Community Research and Action

May 10, 2024
Nashville, Tennessee

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ACKNOWLEDGEMENTS

This dissertation would not have been possible without the help of many people. First and foremost, I would like to express my deepest gratitude to my advisor, Dr. Maury Nation, for his unwavering support and understanding throughout this journey. I am immensely grateful for Dr. Nation's care and encouragement, which helped me navigate the ups and downs of completing my PhD program. I also owe a huge thank you to Dr. Will Doyle for introducing me to a novel research method and to Drs. David Diehl and Paul Spear for their feedback and guidance on violence research.

Writing has always been a struggle for me, but I am incredibly thankful for the various writing groups that provided me with encouragement and camaraderie along the way. Special thanks to Jessie Wang, Micaela Harris, and Jess Stasick for their uplifting words, laughter, and collaborative writing sessions. I am also grateful to Lucy Kim and Drew Shipley from the Writing Studio, for organizing the Graduate Student Writing Groups with delicious snacks, and to Nick Hyer from the Graduate and Postdoc Academic Success Program for creating a supportive writing community. To all the graduate students and staff members from the Robert Penn Warren Center for the Humanities, thank you for holding me accountable and providing a structured program that kept me focused on my dissertation goals.

During the final stretch of my dissertation, I encountered injuries that significantly impacted my ability to write. I want to extend my appreciation to all the healthcare professionals who assisted in my recovery journey. A special shoutout to Ms. Ericka Brandon for her encouragement and belief in me, to Dr. Shavaughn Green for ensuring that all my health needs were addressed, and Drs. Tyler Acher, Matthew Connor Jordan, and Robert Silverberg, and Mr. Anthony Sonera for their consistent care and support throughout this challenging time. Lastly, I

want to thank my sister, Leah Chung, for everything—your time, listening, advice, companionship, gifts, and love. It is because of you that I not only completed my dissertation but am also approaching my next journey with more excitement and determination.

Research reported in this dissertation was supported by the National Institute of Justice under Award Number 2016-CK-BX-K002. The content is solely the responsibility of the author and does not necessarily represent the official views of the National Institute of Justice.

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CHAPTER I

Introduction

Community violence is influenced by various demographic and geographical characteristics. Higher rates of violence have been associated with greater residential mobility, racial heterogeneity, poverty, and population density (Hawley, 1950; Krug et al., 2002; Schuerman & Kobrin, 1986; Shaw & McKay, 1942; Stucky & Ottensmann, 2009). Furthermore, areas characterized by a greater concentration of alcohol outlets, vacant or abandoned properties, and public housing have reported elevated rates of violence (Branas et al., 2012; Fagan & Davies, 2000; Griffiths & Tita, 2009; MacDonald, 2015; Roncek et al., 1981). Exposure to schools has also been identified as a contributing factor to community violence. Studies have demonstrated that areas that contain a school have greater numbers of homicides, robberies, and aggravated assaults across cities in the United States (De Castro Harth et al., 2022; Murray & Swatt, 2013; Roncek & Lobosco, 1983).

While higher rates of violence are observed around schools, understanding the reasons behind this phenomenon is complex. Two primary perspectives offer explanations for the increased frequency of violent crime near schools. The first suggests that schools act as focal points, bringing together potential perpetrators and victims in one location. The second perspective posits that violence in a neighborhood spills over to schools, suggesting that the violence in and around schools mirrors the local community's violence. This dissertation explores the role of schools in shaping the patterns of community violence, aiming to enrich the theoretical and methodological landscape of existing literature. It seeks to understand how school exposure impacts community violence with a particular focus on the number and size of schools

within neighborhoods—elements overlooked by previous research. Chapter III presents a novel methodology by utilizing inverse distance weighted interpolation to assess school exposure, thereby offering a more detailed exploration of how school-related factors contribute to community violence.

Furthermore, the dissertation examines the patterns of violence across four different types—homicide, sexual assault, robbery, and aggravated assault. Previous studies have often combined the four types of violent crime into one variable without exploring the patterns of each violent crime type. However, a recent study found little overlap between high-risk violence areas across four violent crime types and also determined that risk factors for violent crime differ between large cities in the United States (Connealy, 2020). The dissertation assesses statistical and spatial patterns of community violence by type and considers whether different types need to be examined separately to draw more accurate conclusions. The dissertation also includes several factors that are understudied in current literature. For example, land use is known to influence violent behaviors in geography literature; however, it has not been incorporated in the studies of school and community violence until recently. Additionally, other relevant concepts that have not been well studied (e.g., social cohesion, antisocial peer behavior, student-teacher trust) were analyzed in this dissertation.

The dissertation addresses limitations and gaps in the current literature by using consistent measures and units of analysis across all analyses. Studies have yielded mixed evidence regarding the relationship between school and community violence, partially due to differences in their measurements and units of analysis (Brinig & Garnett, 2012a; MacDoland et al., 2018; Murray & Swatt, 2013). The dissertation examines the relationship without being subjected to biases from inconsistent units and measurements. Lastly, the dissertation adds value

by studying community violence in Nashville, Tennessee (TN)—one of the most dangerous cities in the United States (NeighborhoodScout, 2021) and a city that has not been studied in extant literature.

The dissertation is composed of three papers. Chapter II explores patterns of community violence and demographic characteristics. Maps of violent crime, broken down into four types (i.e., murder/homicide, abduction/robbery, rape/sexual assault, aggravated assault) are created to examine whether the crime types show different geographical patterns. The study also investigates whether the patterns differ for incidents that involve firearms. Three community characteristics were mapped at the smallest available geographic unit: economic status, residential mobility, and the position of racial minorities.

Chapters III and IV discuss literature from two disciplines, namely public health and criminology, and apply methods that have been used in those disciplines. Chapter III examines the perspective of schools as generators of community violence. Following the routine activities theory, this study analyzes the extent to which exposure to schools is geographically associated with community violence. School exposure indicates the extent to which neighborhoods are geographically close to schools. The study considers both temporal and demographic aspects of schools' influence by restricting the sample to when schools are in operation and analyzing effects by school level. The results illuminate school and community characteristics that may contribute to an increased risk of violence and facilitate policy discussions among multiple stakeholder groups.

Chapter IV examines the perspective of school violence as a reflection of neighborhood violence. This study assesses the extent to which neighborhood violence leads to school violence through structural equation modeling. The study also estimates the effects of

other relevant community and school characteristics, including community poverty, residential mobility, racial composition, school size, antisocial peer behaviors, and student-teacher trust.

CHAPTER II

Context of Community Violence

Community violence depends heavily on context. For example, social disorganization theory asserts that the observed signs of disorganization result from larger structural forces that impact communities (Shaw & McKay, 1942). Community violence is an observed form of disorganization that is influenced by poverty and low levels of social cohesion within communities. The World Health Organization's (WHO) ecological model for understanding violence also highlights residential mobility, racial heterogeneity, population density, unemployment, and poverty as correlates of violence victimization and perpetration at the community level (Krug et al., 2002). Connealy (2020) reported that the spatial overlap between four types of violent crime was different for three U.S. cities (Indianapolis, Denver, and Washington, D.C.) and that each crime type featured a different set of risk factors. Criminology literature also suggests that community violence is not randomly distributed. Violent incidents are clustered in certain areas of a city—even down to a number of specific street blocks (MacDonald, 2015).

This chapter explains the context of community violence by mapping different violent crime types and relevant demographic characteristics. The descriptive analysis helps to determine the spatial distribution of community violence and the spatial relations between schools and community violence. Additionally, this analysis examines potential spatial relationships between community violence and population demographic characteristics to identify possible unique and interactive effects that may connect schools to community violence. Finally, the spatial analysis is evaluated for potential policy recommendations based on the

statistical and spatial relations between community violence and important elements of community structure.

Literature Review

Community violence has been a persistent problem for U.S. cities. Early efforts to understand community include Shaw and McKay (1942), who found that the distribution of community violence is associated with several demographic factors. In their study of violence and delinquency in Chicago, Shaw and McKay discovered that incidents of community violence were not randomly scattered but were instead highly concentrated in specific neighborhoods over many years. Their analysis revealed a strong correlation between the prevalence of community violence and neighborhoods characterized by distinct features: economic deprivation, high levels of residential mobility, and a significant presence of racial minorities. They detailed that neighborhoods with low economic status were more prone to higher rates of violence. Similarly, areas experiencing high residential mobility, indicative of frequent resident turnover, also faced elevated violence levels. Moreover, neighborhoods with a substantial composition of racial minorities—particularly those with a high percentage of foreign-born and minority heads of household—exhibited higher violence rates, suggesting a complex interplay of socioeconomic factors in the spatial distribution of community violence.

Shaw and McKay (1942) explained these spatial patterns of community violence with social disorganization theory (SDT). The theory posits that a community's ability to maintain effective social control and prevent violent behaviors depends largely on the strength of social cohesion and control among its members. According to this theory, neighborhoods characterized by economic deprivation, high residential mobility, and significant racial or ethnic diversity face

challenges in developing strong, cohesive social networks. These conditions undermine the community's ability to supervise its youth, enforce norms, and foster a sense of belonging and mutual trust among residents. As a result, such neighborhoods become socially disorganized, lacking the informal mechanisms necessary to regulate behavior and deter violence. This lack of social cohesion and control alters the neighborhood environment, making it conducive to the promotion of violent behaviors. It is not merely that the local residents are more inclined to act violently; rather, the environment itself becomes a fertile ground for violence, affecting anyone present in or cognizant of the neighborhood's diminished social control. Consequently, areas suffering from social disorganization experience higher rates of community violence, as their weakened social control is less capable of curbing the emergence and escalation of violent behaviors.

In terms of measuring community violence, approaches have varied by reporting agency and context in which violent incidents occur. Violent crime, according to the Federal Bureau of Investigation's (FBI) Uniform Crime Reporting (UCR) program, is one of the most common measures of violence. According to the UCR program, violent crime consists of four offenses: murder and nonnegligent manslaughter, rape, robbery, and aggravated assault (FBI, 2019). This definition of violent crime is widely used in criminal justice studies as crime data have often been collected based on the FBI's definition. Gun violence further considers the involvement of firearms in violent crimes, referring to any harm or death that involved a firearm as the primary weapon for the violent incident, regardless of the intent of the user (CDC, 2023). Focusing on a specific demographic, youth violence concerns violent behaviors prominent among those aged from 10 to 24 years old. The Centers for Disease Control and Prevention (CDC) operationalizes youth violence as “fighting, bullying, threats with weapons, and gang-related violence” and

reports its prevalence through youth homicide rates (CDC, 2022a; David-Ferdon & Simon, 2014). Shaw and McKay (1942) adopted the FBI's definition of violent crimes to measure community violence, given its reliability and widespread acceptance at the time.

In the decades since Shaw and McKay (1942), there have been numerous studies that have continued to explore the role of social disorganization in the distribution of community violence. For example, Block (1979) examined the relationship between community violence and 32 neighborhood characteristics and found that poverty most strongly predicted violent crimes followed by the percentage of residents from the South. SDT found empirical support in various U.S. cities, including Cleveland, OH, and San Diego, CA (Roncek, 1981), as well as Rochester, NY, Tampa, FL, and St. Louis, MO (Smith & Jarjoura, 1988). Recent studies have broadened the scope of influential factors to include population density, the rate of owner-occupied housing units, the proximity to public schools, and specific land use patterns as significant predictors of community violence (De Castro et al., 2022; MacDonald, 2015; Murray & Swatt, 2013).

Furthermore, MacDonald's (2015) systemic literature review highlighted that urban planning and design greatly influence community violence. For instance, zoning policies that encourage mixed land uses have been shown to reduce crime in commercial areas by fostering more vibrant, populated public spaces that deter criminal activities through natural surveillance. Similarly, street configurations that limit through traffic, such as cul-de-sacs, have been linked to lower crime rates due to reduced opportunities for criminals to access and escape from residential areas. The role of housing, particularly the configuration and management of low-income and public housing, is also critical, with evidence suggesting that certain designs and placements can either concentrate or disperse crime. These contextual variables emphasized the

necessity of incorporating a nuanced understanding of how demographic factors interact with the spatial configuration of urban environments in violence research. MacDonald advocated for policymakers and urban planners to develop strategies that are finely tuned to the complex interplay between the design of urban spaces and community behavior. This approach not only addresses the immediate factors contributing to violence but also fosters a living environment conducive to long-term social stability and community well-being.

Although generally the extant research has supported the importance of SDT-related factors in distribution of community violence, there are some questions that still remain about its ability to explain community violence. First, it is unclear whether SDT affects all types of community violence equally. Prompted by this gap, Connealy (2020) assessed how risk factors and spatial patterns of community violence vary by the different types of violent crime (i.e., assault, homicide, rape, and robbery). This inquiry was particularly motivated by previous findings suggesting that environmental predictors of crime might not be universally applicable across different types of violent crimes or geographical settings (Barnum et al. 2017; Connealy & Piza, 2019). Thus, the study sought to explore whether the risk factors and spatial patterns of community violence exhibited variability across distinct categories of violent crime.

Connealy (2020) found that out of 26 risk factors identified in the violent crime literature, only two factors—restaurants and abandoned/foreclosed properties—significantly predicted all four types of violent crime in Indianapolis, Indiana. Schools were a significant risk factor for aggravated assaults, rape, and robbery, but not for homicide. High-risk areas differed by types of violent crime, and only 6.26% of the high-risk areas overlapped across the four types. Patterns of community violence also differed between the three cities of Indianapolis, Denver, and Washington, D.C., which highlights the importance of context for studying community violence.

Second, the extant research has not examined how violence involving firearms might be differentially affected by SDT-related factors. CDC (2020) highlights that firearms have contributed to the recent spike in homicides across all states. The impact of firearm violence has been especially pronounced in areas with concentrated neighborhood disadvantages. Semenza et al. (2023) analyzed the association between gun violence and community health in nearly 16,000 neighborhoods across 100 U.S. cities. Their findings revealed that firearm violence not only correlates with adverse health outcomes but also suggests a reciprocal relationship between the well-being of neighborhoods and the prevalence of firearm violence. This relationship was exacerbated in areas of concentrated disadvantage—marked by high poverty, unemployment, family disruption, and racial segregation. This vicious cycle suggested that gun violence both stems from and exacerbates the challenges faced by disadvantaged communities, further increasing their disadvantages through higher levels of violence.

The purpose of this study is to address the research gaps highlighted by prior studies by analyzing the patterns of community violence by violent crime type and firearm involvement. Connealy (2020) suggested that the nature and risk factors of violence can vary depending on the type of violence, yet many studies lump together various forms of community violence without distinguishing them by type. Furthermore, Semenza et al. (2023) highlighted the specific role of firearms in violent crimes and suggested that the involvement of firearms, in conjunction with certain neighborhood characteristics, warrants closer examination in the context of violence research. Additionally, the notion that violence patterns are city-specific was reinforced by Connealy (2020), who found distinct spatial patterns and risk factors across Indianapolis, Denver, and Washington, D.C. This underlines the importance of examining SDT's effectiveness in uniquely affected locales that have not been extensively studied. This study intends to bridge

this gap by focusing on Nashville, a city has seen limited research on this topic. Through this lens, the study aims to enrich our understanding of how SDT-related factors specifically interact with different types of violence and to assess if these dynamics are consistent or diverge significantly in different urban settings. Specifically, the study explores the following questions:

- 1) How is community violence distributed statistically and spatially across neighborhoods?
- 2) How do the patterns of community violence differ by the four violent crime types (i.e., homicide, robbery, rape/sexual assault, aggravated assault)?
- 3) What is the relationship between community violence and other neighborhood characteristics (e.g., economic status, minority composition, residential mobility)?

Methods

Setting

The study focused on the demographic characteristics of Nashville, Tennessee, from 2017 to 2019. Nashville is centrally located in Davidson County, which comprises 487 census block groups with a population of 690,540 averaged between 2016 and 2020 (Census, 2020). As Tennessee's second largest county by population, Nashville-Davidson County experienced approximately 14% growth in its population since 2010. (Census, 2022; Tennessee State Data Center, 2021). This growth has significantly altered the demographic landscape in certain areas. East Nashville, once a predominantly Black neighborhood, has undergone extensive redevelopment, transforming into an area characterized by diverse businesses, expensive homes, and a more racially and socioeconomically varied populace. Similarly, North Nashville is experiencing a surge of development, echoing the changes observed in East Nashville. Long-standing residents express concerns that gentrification has displaced many community members,

arguing that efforts to improve the neighborhood no longer benefit the original inhabitants (Cantrell, 2023).

In parallel with its demographic shifts, Nashville has faced higher levels of violence compared to many U.S. cities, with a rate of 10.95 violent crimes per 1,000 residents (NeighborhoodScout, 2021). The downtown area, at the city's core, registers the highest incidence of violent crime, with North and East Nashville following (GISGeography, 2024). Notably, gentrification has altered crime patterns in areas traditionally afflicted by high levels of violence. For example, East Nashville has seen a steady decrease in violent crime over the past decade, a trend some attribute to neighborhood redevelopment (Felix, 2020). Conversely, areas receiving the displaced populations have witnessed an increase in violence (Tatter, 2020). This study considers Nashville's historical and demographic context crucial for understanding the link between violence and demographic characteristics at the census block group level, offering insights into the broader implications of urban development and demographic change.

Data/Sample

The study used datasets from the Metropolitan Nashville Police Department (MNPD) and the American Community Survey (ACS). The MNPD dataset includes all crime incidents reported to police from the 2017–2019 school years. The dataset was pulled from the [Community Oversight Database](#) on June 15, 2023. Each record includes the date and time of the incident, the type of offense committed in the incident, the type of weapon involved (if any), and the type of location where the incident occurred. The data also have the geographic coordinates of all incidents, which allows geocoding at the census block group level. Among the four types of violent crime, sexual offenses were not available due to data privacy reasons and were thus excluded from the analysis. The ACS dataset includes the following demographic variables at the

census block group or census tract levels: total population, population by minority racial groups, median household income, population below poverty, and population who lived in the same residence over 1 year. The ACS data provide an average estimate of the variables from 2016 to 2020.

Variables/Measures

For this study, there are four key variables of interest: community violence, economic status, minority composition, and residential mobility.

Community Violence

Community violence is measured using data provided by the Metro Nashville Police Department on violence offenses committed in Davidson County, Tennessee. Violent offenses are offenses that involve force or a threat of force, as defined by the FBI's UCR program (FBI, 2018). Offenses are generally categorized using four types: homicide, robbery, sexual assault, and aggravated assault. Previous research suggests that the types of violent crime may need to be examined separately as they may have different spatial patterns (Connealy, 2020). The MNPDP data have nine violent offenses that meet the FBI's definition, and they are categorized into the four violent crime types as described above. In this research, community violence is quantified by the actual number of violent crimes, rather than a crime rate. This methodology was selected to pinpoint the locations where violent crimes occur. Although the count-based approach may introduce bias due to differences in population sizes, it remains preferable for examining the full scope of violent incidents within the city, including those perpetrated by non-residents or visitors. This method provides a comprehensive overview of violence that transcends the

limitations imposed by resident population size. The implications of using a count variable are extensively discussed in the Discussion section of the study.

Residential Mobility

Residential mobility indicates moves that occur within a jurisdiction (US Census, 2015). The ACS data include information about different types of moves (e.g., moving across states, regions, metropolitan areas). Residential mobility is measured by the proportion of the population that did not live in the same residence in the prior year; this “mobile” population is calculated by subtracting the population that lived in the same residence in the prior year from the total population for each census block group.

Economic Status and Minority Composition

Economic status comprises two variables: median household income and the proportion of the population below 100% poverty. Median household income is available at the census block group level in the ACS data. The population below 100% poverty is available at the census tract level, and it is divided by the total population to estimate the proportion. Minority composition indicates the population identifying with a race other than White. The ACS data break down the population into seven racial groups: White, Black/African American, American Indian or Alaska Native, Asian, Native Hawaiian or Pacific Islander, Other, or Multi-Racial. Minority composition is measured by aggregating the total population of all seven racial groups and dividing it by the total population for each census block group.

Analysis

The analysis involved estimating descriptive statistics and creating thematic maps of four variables (i.e., community violence, residential mobility, economic status, and minority

composition) in the smallest geographic unit available. Prior to the analyses, MNPDP data were merged with the ACS data to link the location of violent crime to its corresponding census block group. Violent crimes that occurred outside of Nashville's census block groups were excluded from the analysis.

Descriptive Statistics

For community violence, summary statistics (i.e., mean, standard deviation, median, minimum, maximum) were estimated for all violent crimes and by their crime type, firearm involvement, and year at the census block group level. These statistics were used to identify the most prevalent violent crime and how the distribution varies across different types and years. Due to data privacy concerns, the American Community Survey (ACS) does not provide specific estimates (e.g., the number of individuals who have moved within the last 12 months or those living below the poverty line) at the census block group level. Consequently, summary statistics for residential mobility and poverty were calculated at the census tract level. Summary statistics for median household income and racial minority composition were calculated at the census block group level.

Mapping

Choropleth maps were generated for all four variables at the smallest geographic unit available. Three sets of maps illustrate the spatial patterns of community violence at the census block group level. The first set of maps demonstrates total violent crimes per block group for the 2017–2019 school years, with separate maps for each school year positioned side by side for comparison. The second set of maps depicts violent crimes by the four types (i.e., homicide, sexual assault, robbery, aggravated assault) to assess whether the patterns are similar across

violent crime types. The third set of maps compares the patterns of violent crimes with firearms and those without firearms. A map of residential mobility was created at the census tract level. For economic status, separate maps were made and compared for median household income and the proportion of the population below the poverty line at the census tract level. A map of minority composition was generated at the census block group level. WGS84 was used as the geographic coordinate system for all maps. RStudio was the main programming software, and the "sf" package was utilized for mapping the data.

Regression Analysis

The ordinary least squares (OLS) regression was used to analyze the relationship between community violence and demographic characteristics. There were four models with different dependent variables: all violent crime, robbery only, aggravated assault only, and violent crime with firearms. All variables in the model were log-transformed due to their skewed distribution. The variables that represent a proportion of population (i.e., under poverty, residential mobility, and minority composition) were multiplied by 100 for better interpretability.

Results

Most communities experienced relatively low violence between 2017 and 2019. In 2019, an average of 14.95 violent crime incidents were reported to police per census block group (Table 1). Most block groups had fewer than 10 violent incidents (Figure 1). However, the range of violent crime incidents varied widely across block groups. While every block group experienced at least one violent incident, some block groups reported as many as 258 violent crimes. Spatially, community violence was not randomly distributed (Figure 2). A higher incidence of violence was observed in the central area of the city. Communities in the eastern

region of the city also exhibited higher levels of violence. Both the statistical and spatial distribution of community violence remained consistent over time.

Table 1.

Descriptive Statistics of Violent Crime by Year and Type

Stats	Violent crime			Year 2019				
	2017	2018	2019	Homicide	Robbery	Aggravated assault	Firearm	No firearm
Mean	15.05	14.94	14.95	0.17	5.54	9.11	7.91	6.91
SD	23.99	24	23.53	0.47	10.99	14.52	13.68	11.72
Median	7	8	7	0	1	5	3	4
Min	1	1	1	0	0	0	0	0
Max	300	300	258	3	107	175	133	125
N	487	487	487	487	487	487	487	487

Figure 1.

K-Density Plot of Violent Crimes by Year

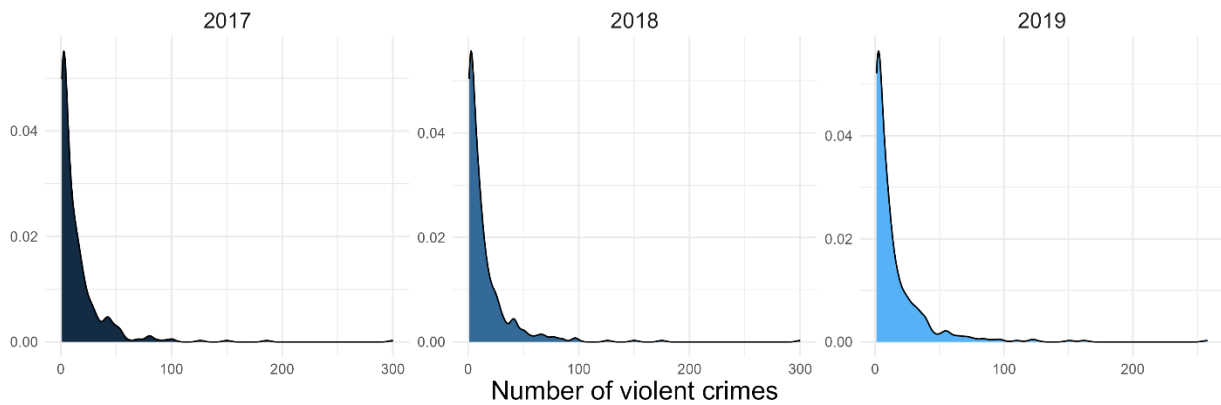
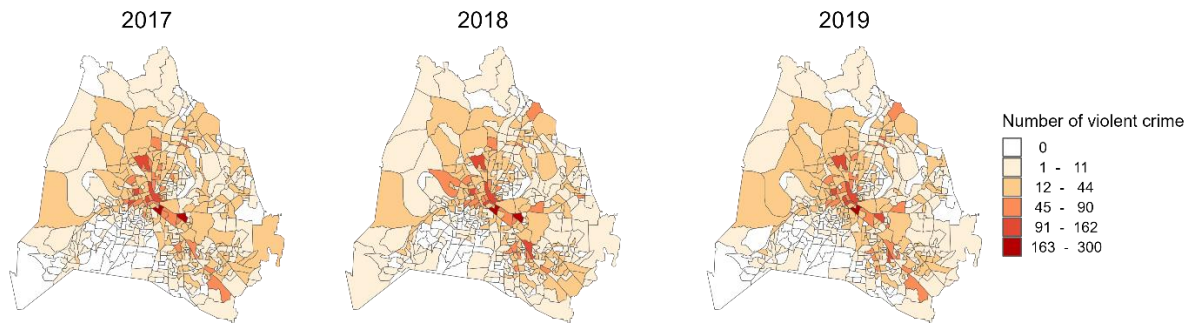


Figure 2.

Map of Violent Crimes by Year



Community violence exhibits consistent patterns across its various types. Aggravated assault emerged as the most prevalent violent crime, followed by robbery and homicide (Table 1). Across the majority of block groups, there was a low incidence of violence across the three types of offenses, with a few outliers. In 2019, several block groups reported as many as 175 aggravated assaults and 107 robberies, while the majority experienced fewer than five aggravated assaults and one robbery. Homicides were infrequent, with a maximum of three incidents per census block group, and most block groups reported none. Concerning firearms, block groups averaged more incidents involving firearms (7.9) than those without (6.8). However, more block groups did not experience any violent crime involving firearms (28%) than those without (19%). Among the block groups with at least one incident, 43% of their violent crimes involved firearms or did not, while 57% featured both. Spatial patterns for each crime type mirrored the overall pattern for all violent crimes (Figure 3). Incidents—be they homicides, aggravated assaults, or robberies—were concentrated in the central and eastern areas of the city. However, the patterns exhibited nuanced differences in the relative frequency of violent incidents. For example, the central business district reported no homicides, whereas robberies and aggravated assaults were more common there. The southeast region experienced a higher

number of robberies, while the northwest region saw more aggravated assaults. Violent crime, whether involving firearms or not, was primarily concentrated in the central area (Figure 4). Furthermore, incidents involving firearms were more frequent along a diagonal stretch from the northwest to the southeast, whereas those without firearms were more dispersed.

Figure 3.

Map of Violent Crimes by Type for 2019

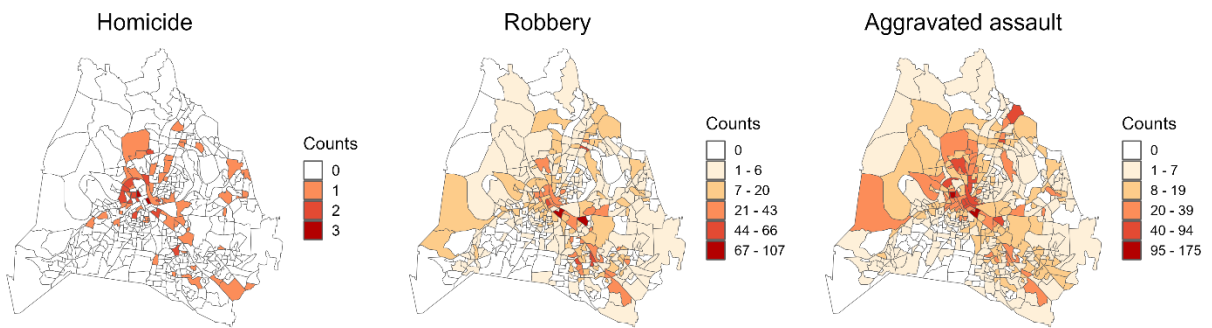


Figure 4.

Map of Violent Crimes by Firearm Involvement for 2019



The demographic characteristics of the city revealed patterns consistent with low overall community violence (Table 2). On average, 14% of residents were below the poverty line at the census tract level. The majority of census tracts had less than 30% of their residents living in poverty, with a few displaying notably higher poverty rates. The distribution of median

household income presented a slightly different pattern, forming a normal distribution with a few outliers at higher income levels. Most residents tended to stay in their neighborhoods, and only one census tract had a higher proportion of residents leaving than those choosing to stay. The racial minority composition was relatively low, with an average of 37% of residents being non-White. However, in census tracts where the majority of the population was non-White, the proportion of non-White residents was very high, with some tracts consisting entirely of non-White residents. The spatial distribution of demographic characteristics also exhibited similarities (Figure 5). Low-income communities were located both in the central area and diagonally from the northwest to the southeast regions. These regions also showed higher rates of poverty and a greater composition of minorities. Regarding their spatial patterns, residential mobility presented a slightly different trend, with higher rates not only concentrated in the southeast region but also spread across the entire southern area.

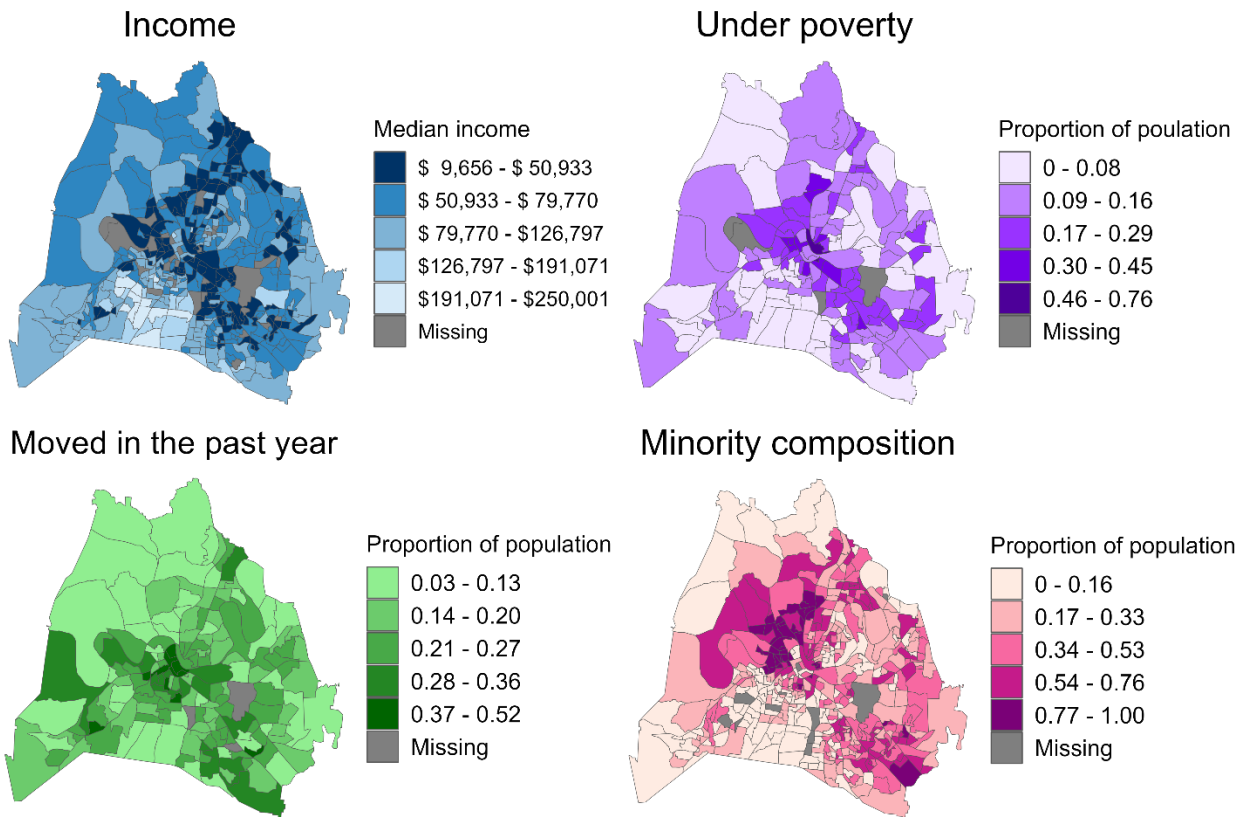
Table 2.

Descriptive Statistics of Demographic Characteristics

Stats	Median income	Under poverty	Residential mobility	Minority composition
Mean	\$72,989	0.14	0.2	0.35
SD	\$40,661	0.11	0.09	0.25
Median	\$62,037	0.11	0.19	0.30
Min	\$9,656	0	0.03	0
Max	\$250,001	0.76	0.52	1
N	456	172	172	485

Figure 5.

Map of Demographic Characteristics



Regression analysis substantiated the anticipated relationships between community violence and demographic characteristics (Table 3). Higher rates of poverty ($\beta=0.31$, $p<0.01$) and a greater racial minority composition ($\beta=0.21$, $p<0.01$) were associated with increased community violence, while neighborhoods with a higher median household income experienced lower levels of violence. Residential mobility did not have a statistically significant effect on violence ($\beta=0.19$, $p=0.07$). Among the four demographic characteristics, median household income demonstrated the strongest association with community violence, showing a 6% decrease in violence for a 10% increase in income, followed by poverty, minority composition, and residential mobility.

However, the relationships between demographic characteristics and community violence differed when analyzed by crime type (Table 3). For robbery, residential mobility had a significant positive effect, as did income and minority composition, with residential mobility ($\beta=0.25$, $p=0.03$) exerting a higher impact than poverty ($\beta=0.18$, $p=0.06$) and minority composition ($\beta=0.18$, $p<0.01$). Interestingly, poverty did not demonstrate a significant effect on robbery. Results for aggravated assault mirrored those for all crime types, with minority composition ($\beta=0.35$, $p<0.01$) exhibiting a stronger association than poverty ($\beta=0.32$, $p<0.01$) and residential mobility ($\beta=0.15$, $p=0.13$). Violent crime involving firearms did not show a significant relationship with any of the demographic characteristics. Regression analysis could not be conducted for homicide due to insufficient variation.

Table 3.

OLS Results for Violent Crimes by Type for 2019

Variables	<i>Dependent variable:</i>			
	Violent crime			
	All	Robbery	Aggravated assault	Firearm
Income	-0.60** (0.12)	-0.54** (0.14)	-0.59** (0.12)	-0.13 (0.17)
Under poverty	0.31** (0.08)	0.18 (0.09)	0.32** (0.08)	0.08 (0.12)
Residential mobility	0.19 (0.10)	0.25* (0.11)	0.15 (0.10)	0.10 (0.15)
Minority composition	0.29** (0.06)	0.18** (0.06)	0.35** (0.05)	0.03 (0.08)
Constant	6.51** (1.56)	5.36** (1.76)	5.90** (1.49)	1.44 (2.24)
Observations	456	456	456	456
R ²	0.38	0.21	0.43	0.01

Adjusted R ²	0.37	0.20	0.42	0.004
<i>Note: all variables were log-transformed.</i>				*p<0.05; ** p<0.01

Discussion

This study aimed to provide relevant context for examining community violence and specifically focused on exploring patterns by crime type as previous literature suggested spatial variations in violence patterns according to type. Both statistical and spatial distributions of community violence appeared consistent across three types of violent crime (i.e., homicide, robbery, aggravated assault). The patterns of community violence also presented consistency over the years and with firearm involvement. The choropleth maps of violent crime underscored the geographic relevance of violence, revealing a higher frequency of violent crime in the central area of the city (Figure 2). This outcome was expected due to the high population density, concentration of commercial buildings, and increased traffic, factors that MacDonald (2015) identified as contributing to an increased likelihood of community violence. Additionally, violent crime was more prevalent in the eastern region of the city.

Although there is no clear explanation for this pattern, several demographic factors shed light on the association between violence and community characteristics. The eastern region has a relatively higher low-income population and more racial minority groups, particularly African Americans and Latinos. Residents in the region also exhibit greater mobility, as depicted in the map (Figure 4). Per various empirical studies, the demographic relationship between violence and poverty, housing, and race aligns with social disorganization theory (MacDonald, 2015; Schuerman & Kobrin, 1986; Shaw & McKay, 1942; Stucky & Ottensmann, 2009). However,

social disorganization theory does not explain the spatial distribution of these demographic characteristics.

The spatial patterns of demographic characteristics were not arbitrary. In the early 1900s, Nashville underwent racial segregation under Jim Crow laws (Lovett, 1999). Redlining further intensified segregation by restricting land and housing ownership for African Americans. Redlining, a discriminatory urban planning practice, barred economic and healthcare services from residents in areas deemed "hazardous" (Swope et al., 2022). These hazardous areas were predominantly inhabited by low-income families and racial minorities, which not only faced resource scarcity but also were deprived of opportunities to relocate. Even today, the hazardous areas of the city have a higher concentration of African Americans and Latinos, who disproportionately experience poverty and violence.

Another finding pertains to how community violence is differentially linked with demographic characteristics depending on crime type. Unlike other types of violent crime, robbery exhibited a strong association with residential mobility and no association with poverty (Table 3). While the study cannot elucidate the reasons for this, social disorganization provides an explanation. This theory posits that residential mobility contributes to community violence due to the absence of strong social networks. In such an environment, robbery becomes more feasible, as perpetrators are less likely to be recognized in areas where residents are unfamiliar with each other. Furthermore, robberies are more likely to be under-reported in neighborhoods with high residential mobility, as residents may be less concerned about their neighbors and thus less inclined to intervene. The relationship between poverty and robbery is nuanced. According to social disorganization theory, poverty escalates community violence by limiting resources and access to services. Although this scarcity could provoke violent behavior, the incidence of

robbery is also influenced by the economic value of assets within the community. Therefore, poverty alone does not directly predict the occurrence of robbery.

Residential mobility did not significantly predict aggravated assault. Social disorganization theory again helps explain this finding. Although residential mobility is linked to violence through the lack of strong social network, aggravated assault is more commonly the result of personal disputes stemming from existing relationships. Therefore, it is logical that residential mobility does not show a significant association with aggravated assault, unlike poverty and racial minority composition, which influence community violence through their impact on interpersonal relationships. Furthermore, for aggravated assault, the proportion of the minority population held greater significance than poverty and residential mobility. This phenomenon may be explained by demographic and social factors related to race and ethnicity. Race and ethnicity are intricately connected to social determinants of health, including housing, food security, education, and early childhood development (Krug et al., 2002). These social determinants significantly impact mental and behavioral health, potentially triggering violence when mental health is compromised. The racial minority composition of neighborhoods may function as a moderator, highlighting the association between violence and social determinants of health. Moreover, race and ethnicity play a role in gang membership and conflict, contributing to increased violence in multiracial neighborhoods (Simon et al., 2013).

Residential mobility did not show a significant relationship with overall community violence when considered as a single measure. This could be attributed to the over-representation of aggravated assaults within this measure, given that there were generally more aggravated assaults than robberies and homicides across the census block groups. Furthermore, recent literature has begun to question the connection between residential mobility and community

violence. Vogel et al. (2017) discovered that not all types of mobility are associated with delinquency, and the relationship between mobility and delinquency is complex. Widdowson and Siennick (2020) reported that frequent moving was not associated with criminal persistence and that some types of moves even reduced offenses and arrests. This study further supports the weak link between residential mobility and violence.

Limitations

This study measured community violence using crime count. Some may argue that the count measure is not appropriate as it does not account for population size and that crime rate should be used instead. However, the selection of crime count was deliberate, supported by both theoretical and methodological considerations. Social disorganization theory, which guides this study's explanation for community violence, emphasizes the role of neighborhood environments that facilitate violent behaviors. It suggests that disorganization, arising from specific demographic characteristics, diminishes the likelihood of residents promoting prosocial behaviors or intervening in antisocial activities. This lack of social control signals to potential offenders that they can engage in violence with little fear of reprisal. Importantly, the theory does not assume that offenders or victims are exclusively from neighborhoods with weak social controls; rather, it posits that the presence in such environments increases the propensity for violence. Unlike crime rate, which implies that violent acts primarily originate from local residents, crime count encompasses the actions of individuals beyond the neighborhood, aligning more closely with the study's theoretical framework. Despite its less frequent use due to positive skewness, crime count has been employed in research on community violence and social disorganization theory (Connealy, 2020; De Castro Harth et al., 2022; MacDonald et al., 2018; Murray & Swatt, 2013; Roncek & Lobosco, 1983), with adjustments for skewness through log

transformation (De Castro Harth et al., 2022; Murray & Swatt, 2013) or specific modeling choices (Connealy, 2020; MacDonald et al., 2018). In this study, log transformation was applied to address the skewed distribution. It is essential to recognize that this decision was grounded in the theoretical framework of the study. The count measure might not be universally preferred across different theoretical perspectives, especially if a theory posits that violence originates from individuals residing within the neighborhood.

Additionally, the analysis was conducted using crime rates as the dependent variable (Appendix A). Overall, the effect sizes remained very similar for income, poverty, and residential mobility. Racial minority composition showed a decrease in its effect sizes across all types of violent crime. With respect to statistical significance, residential mobility became a significant predictor for the overall community violence with a p-value of 0.04. Racial minority composition was no longer a significant predictor of robbery, whereas poverty significantly predicted robbery. There were no statistically significant changes to the associations for aggravated assault and firearm incidents. See Appendix A for the full regression results across the different types of violence.

One limitation of the study is related to the use of police data. Police data include incidents reported to and/or caught by police officers. However, police surveillance is not uniformly conducted across neighborhoods. Predominantly Black and low-income neighborhoods experience a greater police presence than affluent and predominantly White neighborhoods (Smyton, 2020). The police also prioritize violence prevention and intervention in Black and low-income neighborhoods, increasing the likelihood of encountering violent incidents through surveillance (Gordon, 2022; Smyton, 2020). These policing practices likely manifest in more police data, offering an alternative explanation for the study findings. Given the

uneven distribution of police surveillance, high-poverty neighborhoods with predominantly racial minority populations may exhibit higher community violence because more incidents were actively monitored and reported by the police. While this study cannot definitively address whether policing influenced the elevated violence in low-income and predominantly racial minority neighborhoods, it is not unreasonable to assume that police surveillance may contribute to the observed higher violence in these areas.

Another limitation is the exclusion of sexual violence in analyzing patterns of violent crime. One objective of this study was to examine differences in patterns of violent crime by type (i.e., homicide, rape/sexual assault, robbery, and aggravated assault). Sexual violence is more likely to be influenced by gender and age compared to other types of violence. Women are more susceptible to being victims of sexual violence, and the initial exposure to acts of sexual violence often occurs at a relatively young age during adolescence (CDC, 2020b). Unlike other forms of violence that commonly occur on the street or near commercial buildings, sexual violence predominantly takes place at or near the victim's home (RAINN, 2020). Although the study could not explore the distribution of rape and sexual assault due to privacy concerns, these factors may generate distinct demographic and spatial patterns for sexual violence compared to those of robbery and aggravated assault.

Implications for Future Research

Despite the limitations, the study carries significant implications for future research. First, the broad patterns of community violence may not significantly differ across its types, challenging concerns about aggregating different types of violence into one variable (Connealy, 2020). This finding may indicate that using community violence as a singular measure can still provide a valid and useful overview of violence within communities, particularly for broader,

macro-level analyses and policy planning. For instance, macro-level interventions aimed at reducing overall violence might not need to distinguish between violence types to be effective. This perspective is supported by research suggesting that interventions targeting general social determinants of health, such as economic stability and education access, can universally reduce community violence (Woolf & Braveman, 2011).

However, this study reveals that the spatial distribution of community violence can exhibit nuanced variations, in terms of the relative frequency of violent crimes, when analyzed by specific types of violent crime and the involvement of firearms. Notably, the central business district of Nashville reported no homicides, but many robberies and aggravated assaults. This pattern aligns with the district's concentration of luxury shops, restaurants, nightclubs, and bars—settings associated with heightened risks for such crimes due to valuable targets and opportunities for conflict (Bernasco & Block, 2011; Burgason, 2017; Connealy, 2020; MacDonald, 2015). The high level of foot traffic and robust police surveillance in this area likely acts as a deterrent against more severe crimes like homicides. Indeed, the general deterrence theory suggests that visible police presence and the likelihood of bystander intervention in crowded areas can reduce the occurrence of more severe violent crimes (Sherman, Gartin, & Buerger, 1989). This observation underscores how certain types of violence might be concentrated in areas where surveillance is less intense, pointing to a strategic need for targeted law enforcement and community engagement efforts in places identified as having lower visibility and monitoring. Such distinctions underscore the importance of considering the specific contexts and characteristics of urban areas when devising strategies to mitigate different forms of violence.

The nuanced differences by violence type underscore the importance of discerning when it is appropriate to examine community violence as a singular variable and when to dissect it by different types. Analyzing community violence as a single measure is particularly useful in broad-stroke analyses aimed at understanding overall violence trends within a community or when evaluating the impact of wide-reaching policy changes or interventions that target general social determinants of violence. This approach allows researchers and policymakers to assess the overarching effectiveness of such strategies without getting mired in the complexities of specific violence types. However, separating violence into distinct categories becomes crucial when the objective is to tailor interventions to specific forms of violence or to address particular risk factors associated with certain types of crimes. For instance, strategies aimed at mitigating robbery and assault in nightlife districts would differ significantly from those designed to prevent homicides in residential areas. This differentiation is essential for crafting precise, context-sensitive interventions that consider the unique dynamics and risk factors of each violence type. Furthermore, the separation allows for a more detailed exploration of the factors driving each type of violence, enabling stakeholders to implement targeted measures that address the root causes specific to each category. Ultimately, the decision to aggregate or disaggregate community violence in research or policy-making should be guided by the specific goals of the study or intervention, with a clear understanding that each approach offers different insights and implications for addressing community violence.

In light of the nuanced distinctions observed in patterns of community violence, future research is poised to play a critical role in enhancing our understanding of how to effectively address this issue. Future studies should aim to unravel the combined effects of structural factors on community violence, distinguishing between the collective impact of these factors and their

individual contributions. While this study did not find a statistically significant association between residential mobility and overall community violence, the role of residential mobility should not be discounted. For instance, high mobility, particularly when intertwined with significant poverty, may indeed contribute to an increase in community violence. Furthermore, current violence interventions tend to center on individual perpetrators and rely on reactive strategies, such as arrest and incarceration. To effectively mitigate community-level violence, it is important to engage with the systemic factors underpinning this phenomenon. This requires adopting a holistic approach to violence prevention and reduction, one that transcends individual-level interventions to incorporate structural changes. Such an endeavor necessitates collaborative efforts across multiple sectors, including justice, health, education, and housing, to tackle violence as the complex social issue it is, thereby fostering safer communities.

Appendix A

Regression Results Using Violent Crime Rates as the Dependent Variable

The table below presents the regression results with violent crime rates as the dependent variable, measured by the number of violent crimes per 1,000 people. The crime rate variable was log-transformed due to its positively skewed distribution, following the recommendation from Pina-Sánchez et al. (2023). When examining overall community violence, all demographic characteristics exhibited statistically significant associations. This differed from the results using crime counts, which did not show a statistically significant association with residential mobility. Regarding effect size, racial minority composition exhibited a reduction from 0.29 to 0.15. The other variables showed minimal changes: a 0.02 increase in magnitude for income, a 0.04 increase for poverty, and a 0.02 increase for residential mobility.

For robbery, all variables, except racial minority composition, showed significant associations. When using crime counts, poverty was the only variable without statistical significance. Minority composition also showed the largest change in effect size, decreasing from 0.18 to 0.09. The other variables remained similar, with a 0.01 decrease in magnitude for income and a 0.01 increase for poverty and residential mobility.

For aggravated assault, all variables, except residential mobility, showed significant associations. This finding was consistent with that from the count measure. Again, minority composition showed the largest change in effect size, decreasing from 0.35 to 0.22. The remaining variables had similar effect sizes: a 0.02 increase in magnitude for income, and a 0.01 increase for poverty and residential mobility.

Firearms showed no statistically significant associations with any demographic characteristics, consistent with the findings from the count measure. Income showed a 0.04

increase in the magnitude of its effect size, minority composition showed a decrease from 0.03 to 0.001, and poverty and residential mobility had the same effect size.

Table A.

Regression Results Using Crime Rates as The Dependent Variable

Variables	<i>Dependent variable:</i>			
	Violent crime rate			
	All	Robbery	Aggravated assault	Firearm
Income	-0.62** (0.12)	-0.53** (0.13)	-0.61** (0.11)	-0.17 (0.17)
Poverty	0.35** (0.08)	0.19* (0.09)	0.33** (0.08)	0.08 (0.11)
Residential mobility	0.21* (0.10)	0.26* (0.11)	0.16 (0.09)	0.10 (0.14)
Minority composition	0.15** (0.06)	0.09 (0.06)	0.22** (0.05)	0.001 (0.08)
Constant	6.80** (1.53)	5.38** (1.63)	6.25** (1.43)	1.95 (2.12)
Observations	456	456	456	456
R ²	0.33	0.19	0.39	0.01
Adjusted R ²	0.33	0.19	0.39	0.01

Note: All variables were log-transformed.

*p<0.05. **p<0.01.

CHAPTER III

Do Schools Generate Community Violence? Spatial Analysis of Violent Crime and School Exposure

This study explores the complex role of schools within the context of community violence, analyzing them as both potential generators and protectors in urban neighborhoods. Grounded in routine activities theory, several cross-sectional studies have traced an association between schools and increased neighborhood violence, even when controlling for school and community characteristics (De Castro Harth et al., 2022; Gouvis-Roman, 2002; Murray & Swatt, 2013; Roncek & Lobosco, 1983). However, challenging this perspective, some natural experiments demonstrate that the opening or closing of schools does not directly impact community violence levels (Brinig & Garnett, 2012a; Brinig & Garnett, 2012b; MacDonald et al., 2018), suggesting that schools may also play a protective role.

This duality underscores the nuanced influence of schools, as they can both aggregate potential targets and offenders, thereby increasing the opportunity for crime, and act as centers of guardianship and structured activity that may deter violence. The mixed evidence not only invites opportunities for further investigation but also has important policy implications. Understanding the mechanisms through which schools influence community violence is critical for developing effective policies aimed at preventing or reducing violence, whether by addressing the factors that contribute to schools being sites of increased risk or by enhancing their capacity to safeguard against crime.

This study analyzes how exposure to school is related to the levels of community violence. School exposure was measured in three different ways, each of which captures

different school context related to community violence. School presence, which is how school exposure has been traditionally measured, indicates whether a neighborhood includes a school or not. School count is another measure indicating the extent to which more schools are close to a neighborhood. The last measure is school size, indicating the extent to which larger schools are close to a neighborhood. The latter two measures involved inverse distance weighing interpolation, which accounts for all schools in the district and their distance to each neighborhood. Furthermore, the association between exposure to school and community violence was examined based on school level (i.e., elementary, middle, and high) and time periods in which schools are in operation. The analytic models included relevant demographic characteristics and land use. Before conducting regression analyses, the spatial autocorrelation of violent incidents was evaluated and corrected accordingly.

Literature Review

Several studies have found that community violence occurs more frequently in areas near schools than in those that are farther from schools (Gouvis-Roman, 2002; Hellman & Beaton, 1986; Kautt & Roncek, 2007; LaGrange, 1999). Hellman & Beaton (1986) conducted one of the early investigations into this phenomenon, finding a marked increase in violence in neighborhoods where schools are located in Boston, MA. This study provided early empirical evidence suggesting that the mere presence of a school could influence the safety of the surrounding area. Similarly, LaGrange (1999) explored the spatial dynamics of school proximity and violence and found that areas closer to public high schools reported higher instances of violence compared to their more distant counterparts.

Typically, this phenomenon has been explained by routine activity theory which posits that crime is likely to occur when three elements converge: a motivated offender, a suitable

target, and the absence of a capable guardian (Cohen & Felson, 1979). A motivated offender indicates an individual who is capable of and willing to commit crime (Cohen & Felson, 1980). In the context of violent crime, a suitable target is any type of person whom a motivated offender can easily threaten and/or harm (Miro, 2014). A capable guardian refers to a person or an object that can effectively deter crime (Cohen et al., 1981). According to Felson (1995), there are two types of guardianship that help deter the likelihood of violent crime. Formal guardianship involves individuals with legitimate authority or physical capacity to control the environment. In the context of schools, formal guardians would be police officers, school resource officers, and educational administrators, teachers, and other school staff. On the other hand, informal guardianship stems from environmental factors that dissuade potential offenders from engaging in violence. An example of informal guardianship is the mere presence of another person in a particular space and time. Consequently, having a dense crowd in areas where potential offenders and victims gather can act as an informal guardian. This deterrence occurs even if no individual in the group possesses the authority or means to directly influence offender behavior.

Leveraging routine activities theory, several studies have contended that schools provide an ideal space and time where the three elements of crime merge (De Castro Harth et al., 2022; Gouvis-Roman, 2002; Murray & Swatt, 2013; Roncek & Lobosco, 1983). They argued that school-aged youth, especially those in middle and high schools, have a higher risk of being both offenders and victims. Additionally, the studies highlight that people are more likely to become motivated to harm others due to conflicts arising from being in the same location. Guardianship, particularly from adult staff members of the school, is present but often limited to designated places and times in and around schools.

Conversely, routine activity theory also provides a framework for understanding how schools might act as catalysts for suppressing community violence through mechanisms of informal guardianship. By congregating a large group of people in one location, schools can create a setting where potential offenders are deterred by the increased likelihood of being observed during the commission of a crime. This concentration of individuals, particularly during school hours, elevates the presence of "capable guardians" in the form of both peers and adults, not just within the school grounds but also in the surrounding areas. Furthermore, the structured environment of schools, with its regular schedules and supervised activities, reduces opportunities for unsupervised interactions that could escalate into violence. The presence of school-based extracurricular activities and community programs can extend these protective effects beyond the school day, offering structured alternatives to unsupervised time, which is often associated with an increased risk of involvement in violence (Gottfredson et al., 2004; Hirschfield & Gasper, 2011). Supporting this perspective, research underscores that youths are significantly safer from criminal violence within school settings, underscoring the pivotal role of social cohesion and both formal and informal surveillance mechanisms afforded by educational institutions in curbing violence (Schreck & Fisher, 2004; Welsh et al., 1999). While schools may theoretically concentrate individuals in a manner that could elevate violence risk, they simultaneously foster environments conducive to supervision and guardianship, effectively mitigating such risks.

Several empirical studies support the viewpoint that schools act as generators of community violence. Roncek and Lobosco (1983), utilizing census and police data, discovered higher violence rates in census blocks with or adjacent to high schools in San Diego, California. Specifically, neighborhoods including or adjacent to high schools experienced 0.41 additional

crimes on average. The authors also noted differential effects between public and private high schools, indicating that neighborhoods with private high schools did not experience any significant difference in violent crime. The effect of public high schools on violent crime remained significant after controlling for school and neighborhood characteristics. Roncek and Faggiani (1985) replicated the study conducted by Roncek and Lobosco (1983) using similar data from Cleveland, Ohio, and obtained analogous results. Proximity to public high schools was associated with increased violence on residential city blocks, with the effect size being larger for Cleveland, indicating an additional two violent crimes per city block when adjacent to a public school.

Gouvis-Roman (2002) further explored the school effect on community violence at different time periods in Prince George's County, Maryland. Using instrumental variables regression, Gouvis-Roman (2002) found that distance to a school significantly influenced violent crime during the school day (i.e., Monday–Friday from 10 AM to 2 PM). A one-mile increase in the distance between a block and a school resulted in a 4% decrease in violent crime. Blocks near low-resource schools experienced, on average, 10% higher violent crime rates than those near high-resource schools after school hours (i.e., Monday–Friday from 2 PM to 6 PM). Additionally, blocks near a disorderly school (i.e., schools that have demographic characteristics related to violence) had a 13% higher violent crime rate on average during the morning commute period (i.e., Monday–Friday from 6 AM to 10 AM). Gouvis-Roman (2002) found no significant associations between school-related variables and violent crime during time periods unrelated to the routines of attending school, such as the weekend, school night curfew, and summer.

Murray and Swatt (2013) examined the role of schools as a generator of crime, considering school levels (i.e., elementary, middle, high school) and crime types based on

student age groups. Using crime and census data from Omaha, Nebraska, the authors determined that blocks with schools experienced significantly higher numbers of aggravated assaults than blocks without schools. They also found that blocks containing public schools had more aggravated assaults, whereas blocks containing private schools did not. Blocks containing elementary or middle schools did not show significantly different numbers of aggravated assaults from those without elementary or middle schools. Blocks containing public high schools experienced more auto thefts and aggravated assaults than those without public high schools. This result remained the same after restricting the time of the crime incidents to school days (i.e., August–May, Monday–Friday, 7 AM to 5 PM). Other community characteristics that were significantly related to aggravated assault include population size, property value, racial heterogeneity, the percentage of African American residents, the percentage of single parents, and the percentage of owner-occupied housing.

De Castro Harth et al. (2022) examined the causal effects of school proximity on crime in Philadelphia, Pennsylvania (PA). This study departed from prior research in three ways. First, the authors defined school blocks as census block groups that overlap a 100-meter radius around any public school location, offering a more consistent measure of the school's impact on community violence. This approach contrasts with prior studies that measured school proximity merely by the geographical boundaries of census blocks or tracts, without considering the actual distance between the school and the neighborhood. Second, the authors employed two distinct statistical techniques, fixed effects and propensity score matching analyses, to account for variations in neighborhood characteristics. Third, they explored the variability of school proximity effects on crime across neighborhoods using random-effects regression analyses.

The results from De Castro Harth et al. (2022) were generally consistent with previous studies. In their fixed-effects analyses, proximity to a public school increased violent crime by 29% on average. The effects of school proximity were generally larger when schools were in session (i.e., September–May, Monday–Friday, 6 AM to 8 PM). High schools experienced substantially more violent crime (31%) compared to middle (19%) and elementary schools (17%). Random-effects analyses demonstrated that the impact of school proximity varied across neighborhoods, with larger positive effects on weekdays than weekends. Propensity score matching analyses produced results similar to those from the fixed-effect analyses. However, one notable difference came from blocks near elementary schools, in which violent crime was elevated after matching the sample based on neighborhood characteristics. Nevertheless, blocks near high schools still experienced the highest amount of violent crime, with an approximately 27% increase across all school levels.

De Castro Harth et al. (2022) also revealed that school proximity had a greater impact on community violence than many other neighborhood characteristics. The authors compared the effect of school proximity to 29 other community characteristics in their regression model. School proximity showed the 7th largest effect size, exhibiting a stronger effect than median household income, families in poverty, distance to nightlife and liquor stores, and the percentage of young males and Hispanic residents. This result was surprising as previous research suggested that several demographic factors (e.g., total population, population density, percentage of Black residents, racial heterogeneity) have a greater effect on community violence than school proximity (Murray & Swatt, 2013; Roncek & Faggiani, 1985; Roncek & LoBosco, 1983). In De Castro Harth et al. (2022), land use also emerged as a dominant factor, both increasing and suppressing community violence. The proportions of civic, vacant, and commercial land use

were the top three contributors to violent crime, whereas the proportion of industrial land use was the strongest protective factor, reducing the likelihood of violent crime by 0.62% for a 1% increase. Although previous studies have not examined the effect of land use, they have yielded valuable insights for policymakers, particularly as local city planning commissions make decisions about land use.

While cross-sectional studies support the role of schools as a generator of community violence, a few natural experimental studies challenge this proposition. Brinig and Garnett (2012a) examined the effect of Catholic school closures on serious crimes in Chicago, Illinois. Using a latent growth model, the authors estimated changes in serious crime rates (i.e., violent crime and burglary) associated with school closings at the police beat level. They controlled for neighborhood and school characteristics, spatial autocorrelation, and the propensity for school closure. Their findings indicated that, while rates of serious crime generally decreased from 1999 to 2005 in areas where a Catholic school was located, areas with a closed Catholic school experienced slower rates of decline in serious crime. Police beats without school closure experienced, on average, a 25% decrease in serious crime rates, whereas police beats with school closure between 1990 and 1996 had a 17% decrease.

In a subsequent study, Brinig and Garnett (2012b) investigated the effect of opening Catholic and charter schools on serious crime. Using a matched sample of police beats based on demographic characteristics, the authors found that police beats with a newly opened Catholic elementary school experienced a lower rate of serious crime, with an average decrease of 33%. However, police beats with a newly opened charter elementary school did not yield a statistically significant difference in their rate of serious crime compared to those without a charter school. While both studies used restricted samples (e.g., Catholic schools, charter schools, elementary

schools), their results suggest that not all schools contribute to community violence—and some may even reduce it.

MacDonald et al. (2018) also supported this claim in their analysis of the impact of school openings on the community. Using a difference-in-differences design, the authors compared changes in violent crime before and after school openings in areas where schools opened to areas where schools were either consistently open or never present in Philadelphia, PA, between 1999 and 2010. The effects of school opening were measured at 0.1- and 0.25-mile radii of an operating school and categorized by school type (i.e., public or charter school). The findings contradicted those of previous research as school openings were not significantly associated with violent crime within a 0.1-mile radius compared to areas without school openings during the study time period. This result applied to both public and charter schools. Similarly, no significant association between school openings and violent crime was observed at the 0.25-mile radius across all school types. The effects remained the same after controlling for the time since schools opened and the fixed effects of school quarters.

The mixed evidence on the effect of school exposure on community violence can be partially attributed to the methodological limitations highlighted in previous studies. The cross-sectional studies operationalized school exposure as a binary variable, indicating only the presence or absence of a school within a neighborhood. Such a measure overlooks critical dimensions, including the number of schools in neighborhoods or the number of students enrolled in those schools. The significance of gathering individuals in one location lies in the potential for informal guardianship, which can reduce the occurrence of violent incidents in those areas. Previous research primarily emphasized the role of formal guardianship, represented by teachers and other school personnel, proposing that violence increases in school vicinities due to

the limited reach of these guardians within school premises, allowing students to evade their watch outside the school environment. However, these studies overlooked the impact of informal guardianship, which can arise from the mere presence of large numbers of people in and around schools. This oversight occurred because they did not include the number and size of schools within and surrounding neighborhoods in their assessment of school exposure.

Another limitation of the cross-sectional studies is the exclusion of land use data. The geographical context, denoted by land use surrounding schools, plays a crucial role in understanding the dynamics of community violence. The type of land use, whether commercial or residential, provides insights into why people congregate in certain areas and how this affects violence. Schools in commercial areas likely influence community violence differently than those in residential zones, where violence may stem from local residents or students residing outside the neighborhood. This gap in the literature was addressed by De Castro Harth et al. (2020), who demonstrated that different land use types emerged as the strongest predictors of community violence out of 30 risk factors, including school proximity. This finding underscores the potential confounding effect of land use on the relationship between school exposure and community violence, a factor not controlled for in the studies preceding De Castro Harth et al. (2020).

The natural experiments also have limitations that may undermine the validity of their conclusions. The research conducted by Brinig and Garnett (2012a; 2012b) focuses exclusively on religious private schools, which cater to markedly different student demographics compared to public schools. The unique characteristics of the student populations served by religious private institutions likely contribute to the observed decrease in community violence following the establishment of these schools. However, the extent to which the mere presence of a "school"

versus the specific attributes of religious private schools contributes to violence reduction remains unclear. Furthermore, the natural experiments operated under the assumption that the placement of schools and the reasons for their opening or closure are random. Yet, the decision to open schools is influenced by a variety of factors that are carefully considered, including the intended demographic and local needs. For example, charter schools might be established to address the needs of low-performing students, who are often from low-income families and racial minority groups. Public schools might be opened in response to deteriorating infrastructure or to compete with charter schools. Similarly, religious private schools tend to be established in areas with strong religious communities and a lack of existing private schools. Such confounding factors, related to the reasons and locations for opening schools, potentially influence community violence, thereby limiting the ability to make causal claims based on the natural experiments.

This study addresses the limitations from the previous cross-sectional studies by adopting multiple measures of school exposure and incorporating land use data into the analytic model. Measuring school exposure is a critical element of the analysis as the method of measurement can significantly influence the interpretation of its effect on community violence. Past research has not accounted for important factors such as student enrollment and the total number of schools within neighborhoods that may serve as informal guardians in mitigating community violence. While these studies drew on routine activity theory, which posits that a high concentration of individuals decreases the probability of violent incidents, they did not fully explore the concept of informal guardianship. Through three distinct school exposure measures, this study hypothesized that a greater number of schools and larger student enrollment yield lower violence near schools. Additionally, I conducted a comparative analysis of the impact of school exposure in relation to other community characteristics, with particular attention to the

effect of land use. Land use greatly influences community violence through zoning, street configuration, public transit, low-income housing, alcohol outlets, and schools (MacDonald, 2015). In effect, the proportions of civic, vacant, and commercial land use had the greatest impact on community violence, surpassing the influence of school proximity and other community characteristics (De Castro Harth et al., 2022). Land use is a relevant topic for both the analytical model and policy implications, and it is therefore included in the analysis as a key independent variable.

This study addresses the following questions:

- 1) To what extent is exposure to school associated with community violence?
- 2) How does the school exposure effect vary based on its measurement?
- 3) To what extent does the school exposure effect on violence compare to the effects of other community characteristics, including land use?
- 4) How do these relationships differ during periods when schools are operational versus when they are not?
- 5) How do these relationships vary across different school levels (i.e., elementary, middle, high)?

Methods

Data/Sample

The study used datasets from four sources: the Metropolitan Nashville Police Department (MNPd), the American Community Survey (ACS), the Metropolitan Nashville Public Schools (MNPS), and the Metro Nashville City Planning Department (MNCP). The MNPd dataset included five offense types that meet the FBI's definition of violent crime (i.e., murder and nonnegligent manslaughter, negligent manslaughter, justifiable homicide, robbery, and

aggravated assault). The ACS dataset comprised relevant community characteristics such as total population, percentages of different minority populations, median household income, population below 100% poverty, total number of housing units, and the number of owner-occupied units. The MNPS dataset constituted administrative data for all public schools registered in the school district. This district data provided information about the school level (i.e., elementary, middle, high), school type (i.e., traditional, charter, magnet), and school geographic coordinates. The MNCP dataset includes all properties in Nashville and provides their acreage, land use codes, and respective census tract and block group.

The study sample was restricted to the 2017–2019 school years (SYs). The primary analyses focused on the sample from SY 2019, and data from the preceding SYs were utilized to verify the consistency of findings over time. Notably, the ACS data provide 5-year estimates from 2016–2020, which may include information several months before and after the designated time frame.

Variables/Measures

As the sample population comprises public schools, the study examined the extent to which exposure to public schools is associated with community violence. The analysis included eight variables measuring community violence, with violent crime serving as the dependent variable. The independent variable of interest was exposure to school. The effect of school exposure was analyzed for all public schools and by school levels (i.e., elementary, middle, high). Relevant community characteristics considered included land use, population size, residential mobility, economic status, minority composition, and owner occupancy of housing units. For demographic characteristics, estimates that are greater than the margin of error were excluded to reduce biases from sampling errors.

School Exposure

The key independent variable, exposure to school, was measured in three different ways, which were referred to as school presence, school count, and school size.

School Presence. School presence indicates whether a census block group contains at least one school. It is a binary variable, set to 1 if there is at least one school in the census block group and 0 otherwise. Previous studies have used this method to investigate the impact of schools on community violence, but it does not consider student enrollment or the number of schools in or near neighborhoods. The study incorporated school presence as a measure of school exposure to facilitate comparison with results from prior research.

School count. School count indicates the extent to which a census block group is close to all public schools in the city, weighing the schools differently based on their distance from the block group. This measure applied the inverse distance weighed (IDW) interpolation method to account for the number of schools in and near neighborhoods. IDW interpolation enables consideration of the effects of all schools in the analysis, assigning different weights to their effects based on their proximity to the center of a census block (Shepard, 1968). Consequently, schools farther away from a census block had less influence compared to schools in close proximity. The specific formula for weights is as follows:

$$(1) \quad w_i(x) = \frac{1}{d^p}$$

$w_i(x)$ is the weight of census block group i for a given census block group x , and d is the distance between the census block groups. p is a power parameter that determines how quickly the weights decrease with distance. For this study, p was equal to 2.

The IDW interpolation formula is expressed as follows:

$$(2) \quad f(x) = \frac{\sum_{i=1}^n w_i(x) f_i}{\sum_{i=1}^n w_i(x)}$$

$f(x)$ is the exposure to school in census block group x for n number of census block groups, f_i is the number of schools in block group i , and $w_i(x)$ is the weight assigned to a block group based on its distance from the given census block group.

School size. Compared to school count, school size additionally incorporates student enrollment in estimating the weight of each school. It also employed IDW interpolation using Equation (1) where $w_i(x)$ refers to the weight of school i for a given census block group x , and d represents the distance between a school and census block group. In Equation (2), $f(x)$ is the exposure to school in census block group x for n number of schools, f_i is the number of students enrolled in school i , and $w_i(x)$ is the weight assigned to school based on its distance from the census block group.

Land Use

Land use is characterized by the distribution of different land use types within a neighborhood, categorized into seven types according to the U.S. Geological Survey Professional Paper: residential, industrial, commercial, civic, recreational, vacant, and other (Anderson et al., 1976). Each land parcel within the neighborhood was assigned to one of these seven categories. Subsequently, the proportion of each land use type within a census tract was calculated, reflecting the extent to which each land use type occupies the tract's total area. The determination of land use proportions at the neighborhood level utilizes the census tract as the geographical

unit of analysis. This choice mitigates potential inaccuracies in land use estimations that might arise from using more granular geographical units (De Castro Harth et al., 2021).

Community Violence and Other Demographic Variables

Community violence was measured by the number of violent crime incidents reported in a census block group. Population size is measured by the total population for each census block group. Owner occupancy reflects the percentage of housing units occupied by owners in each block group. Residential mobility is measured by the proportion of the population that moved to a different house in the past 12 months. Economic status is captured by two measures: the proportion of the population below 100% poverty and median household income. Minority composition indicates the proportion of the non-White population. See Table 1 below for the descriptive statistics of the variables.

Table 1.

Descriptive Statistics of Variables for SY 2019

Variables	Mean (SD)	Median [Min,Max]	Missing (%) (N=487)
Community violence	15.0 (23.5)	7.00 [0, 249]	0
Population	1,420 (663)	1,310 [245, 4,310]	2 (0.4%)
Median income (\$)	71,000 (36,300)	61,700 [9,660, 243,000]	36 (7.4%)
Under poverty (%)	14.0 (9.65)	11.2 [1.33, 75.9]	26 (5.3%)
Residential mobility (%)	20.0 (8.81)	19.5 [3.25, 52.0]	2 (0.4%)
Racial minority (%)	40.6 (24.2)	37.2 [3.28, 100]	91 (18.7%)
Owner occupancy (%)	59.9 (25.4)	60.7 [1.50, 100]	36 (7.4%)
<i>Land use</i>			
Residential (%)	50.6 (24.6)	49.0 [1.76, 93.3]	7 (1.4%)
Industrial (%)	15.7 (18.2)	8.9 [0, 69.1]	7 (1.4%)
Commercial (%)	8.5 (10.0)	5.2 [0, 57.3]	7 (1.4%)

Variables	Mean (SD)	Median [Min,Max]	Missing (%) (N=487)
Civic (%)	6.7 (7.43)	4.4 [0, 49.5]	7 (1.4%)
Recreational (%)	2.7 (5.81)	0.4 [0, 59.9]	7 (1.4%)
Vacant (%)	12.8 (8.87)	10.4 [1.00, 41.0]	7 (1.4%)
Other (%)	2.0 (2.92)	0.8 [0, 18.3]	7 (1.4%)

Analytic Model

To examine whether school operations are associated with an increase in community violence, the initial analysis investigated the temporal patterns of violent crime across hours, days, and months. The in-session time period, designated from 7 AM to 5 PM on weekdays between August and May, corresponds to the timeframe when students and staff were expected to be in or around schools. If the routine activities theory holds, there would be a higher incidence of violent crime during the in-session time periods compared to the out-of-session periods.

The study used spatial lag models to analyze the association between exposure to school and community violence. Community violence was log-transformed to account for heteroskedasticity after confirming the skewed distribution of violent incidents. Total population and median household income were also log-transformed due to the positively skewed distribution. The analytic models took the following form for the logarithm of violent crime count y_i in census block group i and census tract j :

$$(1) \quad \log(y_{ij}) = \beta_0 + \beta_1 School_{ij} + \beta_2 X_{ij} + \beta_3 Landuse_j + \rho W y_{ij} + \varepsilon_{ij}$$

X_{ij} indicates a set of community characteristics (i.e., population size, residential mobility, economic status, minority composition) for census block group i and census tract j .

$Landuse_j$ includes proportions of each land use type in census tract j . $\rho W y_{ij}$ is the spatially

lagged dependent variable of neighboring block groups. $School_{ij}$ indicates school exposure, but it conveys different information based on the chosen measure. School exposure considering student enrollment is a continuous variable showing the degree to which a census block group i is exposed to schools, accounting for school size. School exposure without considering student enrollment provides the same information but without accounting for school size. School exposure indicating whether a census block group contains a school was a binary variable equal to 1 if the block group had a school and 0 otherwise.

The coefficient β_1 shows the extent to which exposure to school is associated with violent crime, while controlling for relevant community and geographic characteristics. As the literature suggests that the effect of school exposure varies by school level (De Castro Harth et al., 2022; Murray & Swatt, 2013), β_1 is estimated for each school level. Since higher incidence of violent crime is expected when school is in session, coefficients for violent crimes occurring during in-session time periods are compared with those for violent crimes during out-of-session periods. The first and primary analyses were conducted for SY 2019, with findings reported in the Results section. Subsequently, the same analyses were performed for SYs 2017 and 2018, and the results were reported to assess consistency across the three school years.

Prior to the regression analyses, the spatial autocorrelation of community violence was tested. Community violence depends on space and tends to affect its surrounding areas more than those at a far distance (Gouvis-Roman, 2002; Murray & Swatt, 2013). When positive spatial autocorrelation is present but not accounted for, the test statistics may be inflated, increasing the chance of Type I error (Griffith, 2005; Murray & Swatt, 2013). The Moran's I test was used to examine the presence of spatial autocorrelation, and the estimates were corrected if they were statistically significant.

Results

The temporal patterns of violent incidents varied across time units. Generally, violent incidents increased during school hours, with a peak at 9 AM (Figure 1). There was no notable difference in violent incidents per hour between block groups containing a school and those without a school. However, a noticeable distinction between block groups with and without schools emerged when considering days of the week (Figure 2). Block groups with schools had more violent incidents than those without schools on weekdays (i.e., during school sessions), but this rate decreased on weekends (i.e., when schools are not in session). In contrast, for block groups without schools, violent incidents were much higher on weekends and dropped significantly on Mondays. By month, violent incidents were generally higher during the summer and lower during the school year (Figure 3). Additionally, block groups with schools had fewer violent incidents than those without schools across all months.

Figure 1.

Hourly Trend in Total Violent Incidence for Census Block Groups That Contain School (Blue) and Those That Do Not Contain School (Red)

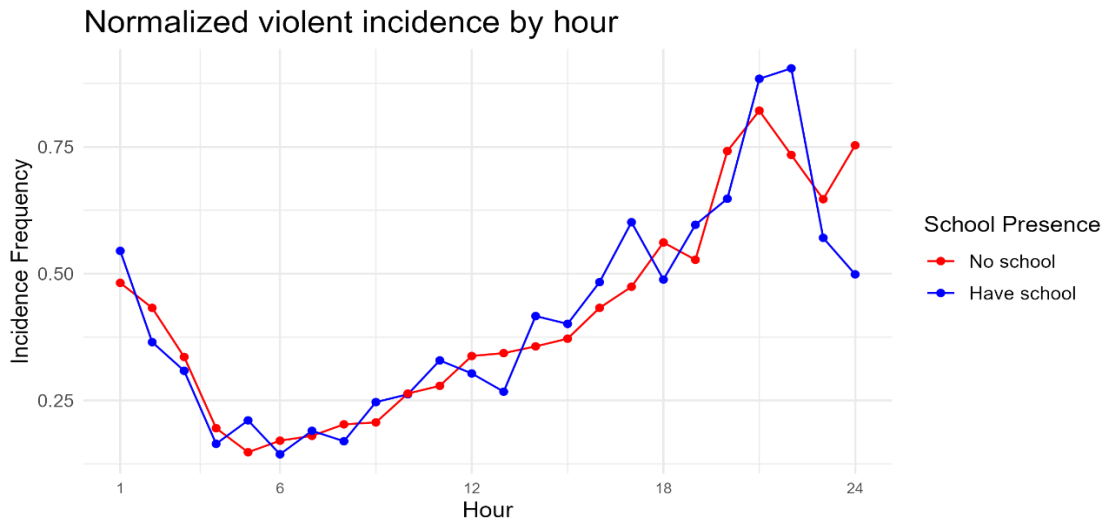


Figure 2.

Weekly Trend in Total Violent Incidence for Census Block Groups That Contain School (Blue) and Those That Do Not Contain School (Red)

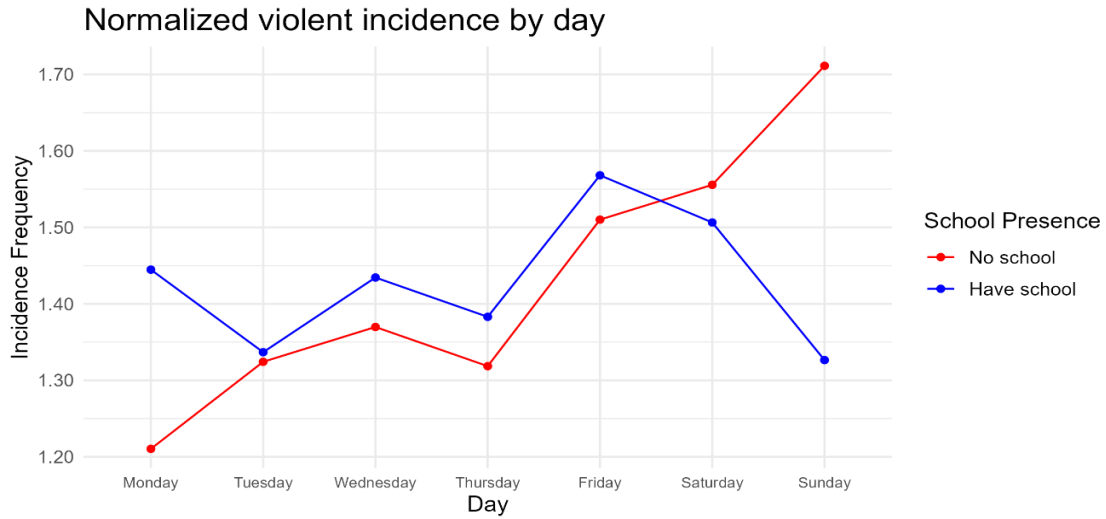


Figure 3.

Monthly Trend in Total Violent Incidence for Census Block Groups That Contain School (Blue) and Those That Do Not Contain School (Red)

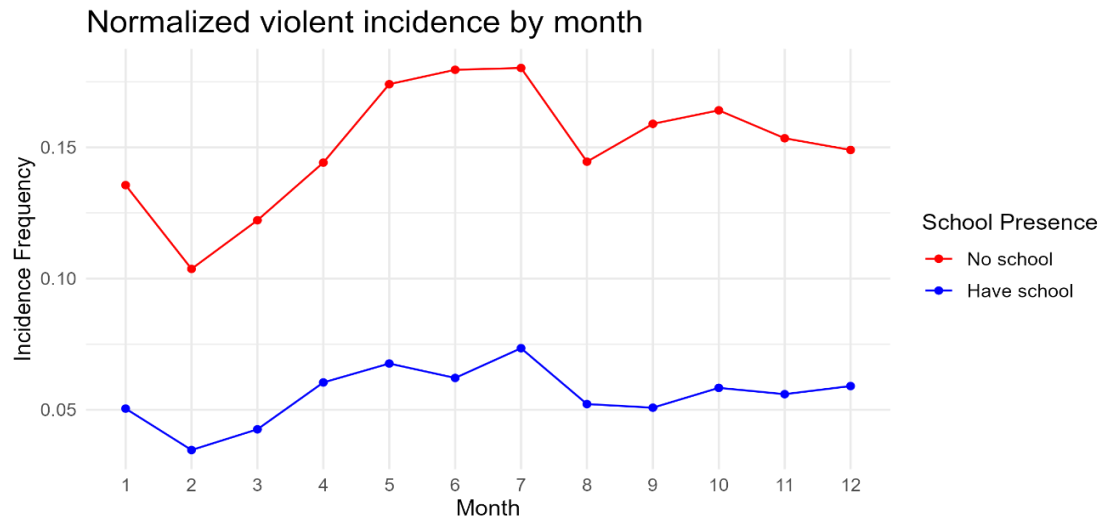


Table 2 displays the results of the IDW analysis based on student enrollment for SY 2019. School exposure has a negative coefficient, indicating an inverse relationship, but it is not statistically significant, both with ($\beta=-0.04$, $p=0.39$) and without ($\beta=-0.08$, $p=0.17$) controlling for demographic characteristics and land use. Population size ($\beta=0.38$, $p<0.01$), population living under 100% poverty ($\beta=2.07$, $p<0.01$), and racial minority composition ($\beta=0.75$, $p<0.01$) are positively associated with community violence, while income ($\beta=-0.37$, $p=0.03$) and owner occupancy ($\beta=-0.83$, $p<0.01$) demonstrate negative associations. Among all demographic characteristics, the population living under 100% poverty shows the strongest effect on community violence—a 697% increase in violence for one percentage point increase in the population under poverty. Residential mobility ($\beta=-0.82$, $p=0.23$) and all land use types do not exhibit a significant relationship with community violence.

Table 2.*Regression Results From The IDW Model Considering Student Enrollment for SY 2019*

	<i>Dependent variable: Log(violet crime)</i>		
	(1)	(2)	(3)
School exposure ⁺	-0.08 (0.06)	-0.04 (0.05)	-0.04 (0.05)
Log(population)		0.42** (0.12)	0.38** (0.12)
Log(income)		-0.36* (0.18)	-0.37* (0.18)
<i>Proportion of demographic characteristics</i>			
Residential mobility		-0.29 (0.68)	-0.82 (0.69)
Population under poverty		2.24** (0.73)	2.07** (0.73)
Owner occupancy		-0.79** (0.29)	-0.84** (0.29)
Racial minority composition		0.73** (0.28)	0.75** (0.28)
<i>Proportion of land use:</i>			
Residential			-0.57 (1.59)
Industrial			-0.40 (1.59)
Commercial			0.65 (1.68)
Civic			0.05 (1.68)
Recreational			-0.75 (1.85)
Vacant			0.13 (1.74)
Other			1.63 (2.94)

Constant	1.08** (0.13)	2.36 (2.05)	3.21 (2.57)
Observations	332	332	332
Akaike Inf. Crit.	1,000.70	920.75	924.85
Wald Test (df = 1)	74.91**	23.75**	19.51**

Note: +School exposure was standardized. *p<0.05. ** p<0.01.

For SY 2017, school exposure had a significant effect, with a one standard deviation increase associated with an approximately 10% decrease in community violence (Appendix A). School exposure also has a negative coefficient estimate in SY 2018, but it is not statistically significant ($\beta=-0.04$, $p=0.34$). Across all school years, population size, population living under the poverty line, owner occupancy, and minority composition consistently demonstrated a significant impact on community violence, whereas residential mobility and land use did not show a significant effect in any school year. Income yielded mixed results, displaying a significant effect for SYs 2018-2019, but not for SY 2017. When all demographic estimates were included in the analysis, regardless of their margin of error, school exposure had significant effects for both SYs 2017 ($\beta=-0.12$, $p<0.01$) and 2018 ($\beta=-0.10$, $p<0.01$) (Appendix A).

School exposure had a similar effect during both in-session ($\beta=-0.04$, $p=0.28$) and out-of-session ($\beta=-0.05$, $p=0.35$) time periods for SY 2019, and neither of these effects was statistically significant (Table 3). However, the impact of school exposure during the corresponding periods in SY 2018 differed, as illustrated in Appendix B. Specifically, a one standard deviation increase in school exposure was associated with a 10% decrease in community violence during school hours, whereas the effect was not statistically significant during non-school hours. For SY 2017, school exposure demonstrated a similar impact on community violence during both in-session

($\beta=-0.12$, $p<0.01$) and out-of-session ($\beta=-0.11$, $p=0.03$) periods, with the effect being statistically significant in both cases.

Table 3.

IDW Regression Results by School Session and Level for SY 2019

	<i>Dependent variable: log(violent crime)</i>				
	Session		School level		
	In	Out	Elementary	Middle	High
School exposure ⁺	-0.05 (0.04)	-0.05 (0.05)	-0.10 (0.06)	-0.12* (0.06)	-0.01 (0.05)
Log(population)	0.22* (0.10)	0.39** (0.13)	0.42** (0.12)	0.43** (0.13)	0.37** (0.12)
Log(income)	-0.17 (0.14)	-0.38* (0.18)	-0.39* (0.18)	-0.39* (0.18)	-0.37* (0.18)
<i>Proportion of demographic characteristics</i>					
Residential mobility	-0.59 (0.56)	-0.70 (0.71)	-0.78 (0.69)	-0.88 (0.69)	-0.81 (0.70)
Under poverty	2.02** (0.59)	2.00** (0.74)	2.14** (0.72)	2.18** (0.72)	2.12** (0.73)
Owner occupancy	-0.50* (0.23)	-0.88** (0.30)	-0.82** (0.29)	-0.87** (0.29)	-0.85** (0.29)
Racial minority	0.78** (0.23)	0.71* (0.29)	0.66* (0.29)	0.57 (0.30)	0.77** (0.28)
<i>Proportion of land use:</i>					
Residential	-0.84 (1.29)	-0.02 (1.62)	-0.50 (1.59)	-0.29 (1.59)	-0.60 (1.63)
Industrial	-0.92 (1.28)	0.12 (1.62)	-0.28 (1.58)	-0.06 (1.59)	-0.44 (1.63)
Commercial	0.01 (1.36)	1.23 (1.72)	0.57 (1.68)	0.90 (1.68)	0.66 (1.72)
Civic	-0.40 (1.36)	0.58 (1.71)	0.13 (1.67)	0.29 (1.67)	-0.09 (1.70)
Recreational	-1.24 (1.49)	-0.11 (1.89)	-0.76 (1.85)	-0.42 (1.85)	-0.70 (1.87)

Vacant	-0.01 (1.40)	0.56 (1.77)	0.19 (1.72)	0.58 (1.74)	-0.05 (1.76)
Other	1.23 (2.37)	2.70 (3.00)	1.51 (2.93)	1.58 (2.92)	1.85 (2.96)
Constant	1.84 (2.07)	2.54 (2.61)	3.10 (2.56)	2.82 (2.57)	3.32 (2.58)
Observations	332	332	332	332	332
Akaike Inf. Crit.	777.25	936.48	922.19	921.28	925.57
Wald Test (df = 1)	2.47	15.59**	19.12**	17.88**	19.41**

Note: + School exposure was standardized.

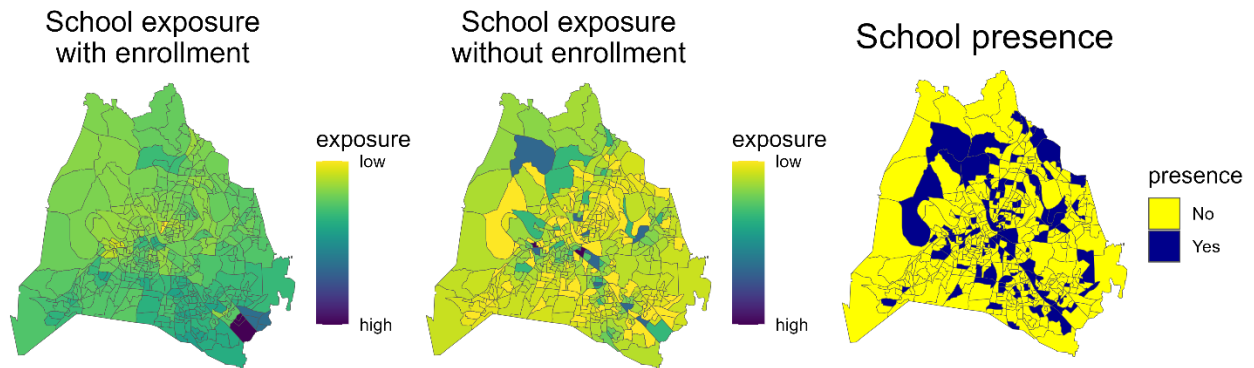
*p<0.05. **p<0.01.

The school exposure effect varies by school level. Exposure to middle schools was associated with an 11% decrease in community violence for SY 2019 (Table 3). Elementary school exposure had a similar effect size but lacked statistical significance ($\beta=-0.10$, $p=0.07$). High school exposure had the least impact on community violence, with a 1% decrease and no statistical significance. While exposure to elementary schools did not have a statistically significant effect for SY 2019, it did for SYs 2017 and 2018, with a 10% and 11% decrease in community violence, respectively (Appendices B & C). The effect of high school exposure was not significant across all school years.

The three measures of school exposure exhibit distinct spatial patterns, as illustrated in Figure 4. The binary measure representing school presence indicates that the effect of school exposure is scattered without a discernible pattern. The IDW measure without considering student enrollment suggests that school exposure is more concentrated in the northern area of the city, whereas the IDW measure considering student enrollment shows greater concentration in the southern area. Furthermore, school exposure (i.e., school presence and exposure without considering student enrollment) reveals different relationships with community violence depending on the chosen measure.

Figure 4.

Map of School Exposure by Type for SY 2019



School presence, or whether a census block group contains a school, was associated with a 22.7% increase in community violence for SY 2019, though the effect was not significant (Table 3). School presence is consistently related to an increase in community violence for earlier school years, with a significant effect for SY 2017 ($\beta=0.26$, $p=0.03$) (Appendix D). School exposure without enrollment was also associated with an increase in community violence for both SY 2017 ($\beta=0.08$, $p=0.10$) and SY 2018 ($\beta=0.07$, $p=0.16$), albeit with much smaller effect sizes than those of school presence. However, the effects were not statistically significant.

Table 4.*Regression Results for Different Measures of School Exposure for SY 2019*

	<i>Dependent variable:</i>		
	log(violent crime)		
	(1)	(2)	(3)
School presence	0.21 (0.12)		
School exposure (w/o enrollment) ⁺		0.07 (0.05)	
School exposure (with enrollment) ⁺			-0.04 (0.05)
Log(population)	0.36** (0.12)	0.38** (0.12)	0.38** (0.12)
Log(income)	-0.39* (0.18)	-0.22 (0.17)	-0.37* (0.18)
<i>Proportion of demographic characteristics:</i>			
Residential mobility	-0.73 (0.69)	-0.88 (0.67)	-0.82 (0.69)
Population under poverty	2.04** (0.73)	1.48* (0.70)	2.07** (0.73)
Owner occupancy	-0.85** (0.29)	-0.99** (0.28)	-0.84** (0.29)
Racial minority composition	0.80** (0.28)	0.53 (0.27)	0.75** (0.28)
<i>Proportion of land use:</i>			
Residential	-0.69 (1.59)	-0.33 (1.53)	-0.57 (1.59)
Industrial	-0.52 (1.58)	-0.04 (1.52)	-0.40 (1.59)
Commercial	0.50 (1.68)	1.00 (1.62)	0.65 (1.68)
Civic	-0.26 (1.67)	0.26 (1.62)	0.05 (1.68)
Recreational	-0.84 (1.85)	-0.57 (1.78)	-0.75 (1.85)
Vacant	-0.17	0.44	0.13

	(1.71)	(1.65)	(1.73)
Other	2.05	0.39	1.63
	(2.93)	(2.82)	(2.94)
Constant	3.74	0.95	3.21
	(2.57)	(2.48)	(2.57)
Observations	332	332	332
Akaike Inf. Crit.	922.77	902.01	924.85
Wald Test (df = 1)	17.86**	54.39**	19.51**

Note: + School exposure was standardized.

*p<0.05. **p<0.01.

Discussion

This study presents several results that diverge from previous studies regarding the association between school exposure and community violence. In contrast to earlier studies suggesting that the mere presence of schools is linked to higher violence, this study reveals a negative relationship, indicating that higher exposure to schools is associated with lower violence (De Castro Harth et al., 2022; Gouvis-Roman, 2002; Murray & Swatt, 2013; Roncek & Faggiani, 1985; Roncek & Lobosco, 1983). Additionally, the study challenges the notion of differences in community violence between school in-session and out-of-session periods, contrary to previous findings (De Castro Harth et al., 2022; Murray & Swatt, 2013; Gouvis-Roman, 2002). Regarding school levels, exposure to middle schools has the greatest impact on community violence, followed by elementary schools which has a comparable effect size. This contradicts previous assumptions associating middle schools, and especially high schools with elevated violence due to the prevalence of violent behaviors among adolescents (Murray & Swatt, 2013).

The disparities in the findings are attributed to variations in the measurement of school exposure employed in this study. Three distinct measures were utilized: school presence was a

binary measure representing whether a census block group contains a school, as used in previous studies, but this captures only the immediate vicinity of schools and fails to differentiate effects based on the number of schools within a block group. This binary measure is also susceptible to confounding bias, because unaccounted for community characteristics (e.g., social cohesion, cultural norms, health) related to violence may influence the results. School count, using IDW interpolation, addresses this issue by indicating the extent to which a census block group is exposed to schools based on their number and distance within the city. While this measure captures school effects across geographical boundaries, it does not consider school size, a crucial factor according to routine activity theory, as the number of people in a centralized location influences the level of violence. School size effectively resolves this limitation by incorporating student enrollment into the IDW measure, allowing for variations in the effect of school exposure based on school size. This third measure provides a more accurate reflection of the impact of school exposure, including the effects of all individual schools on community violence considering both distance and student enrollment.

While the study does not provide a complete explanation for the discrepancies observed across the three measures, the concept of informal guardianship, derived from routine activities theory, offers insights into potential reasons. The three measures interpret school exposure through the lens of routine activities theory in distinct ways. School presence perceives schools as potential hotspots for violence because they gather potential offenders and victims in one place, often with limited guardianship. Hence, it stands to reason that this perspective on school exposure would show a positive correlation with community violence, a hypothesis that both this study and prior research have empirically supported.

However, routine activities theory also suggests that the presence of numerous individuals in a location can act as an informal deterrent to violent behavior. From this viewpoint, having more schools in close proximity to a neighborhood could theoretically increase the risk of violence by clustering potential perpetrators and their targets. Yet, it simultaneously offers protective effects through the presence of many people in those areas. The findings related to the school count measure align with this hypothesis, indicating a positive link between the number of schools and community violence, albeit with smaller effect sizes and no statistically significant impacts across different school years. The school size measure further underscores the protective role of population presence. The observed negative relationship between school size and community violence suggests that the effect of informal guardianship might be strong enough to invert this dynamic, implying that schools could potentially mitigate community violence when they encompass large student populations.

Limitations

One limitation of this study is the lack of causal inference. The study did not investigate a causal relationship between school exposure and community violence, and therefore it is not possible to conclude that school exposure directly decreases community violence. The analysis controlled for relevant demographic and geographic characteristics, including population size, income, poverty, residential mobility, racial minority composition, and land use, which allowed their confounding effect on community violence to be ruled out. However, other variables (e.g., social cohesion, police presence, school-based interventions) that could be associated with both school exposure and violence are challenging to measure and analyze. Furthermore, the study could not include sexual offenses in community violence due to data privacy. As sexual violence is most prevalent between ages 11 and 15, sexual offenses could affect the overall study findings.

Consequently, the study results pertain to non-sexual violent crimes and should not be generalized to sexual violence.

Implications for Future Research

This study holds important implications for future research. First, it underscores the critical influence of the chosen measure of school exposure on its relationship with community violence. The study reveals that, depending on the measure employed, school exposure may exhibit varied associations with violence, emphasizing the need for careful consideration in selecting an appropriate measure aligned with the research question. Second, the findings suggest that the number and size of schools play a pivotal role in determining their association with violence. The study pointed out that when accounting for the number of schools and their distance from the community, school exposure demonstrated a weakened association with higher violence. The opposite effect was observed when also considering student enrollment, which indicates larger school sizes might play a role in reducing community violence. The relationship between school exposure and community violence also depends on distance, with schools potentially having more suppressive effects in close proximity.

Future studies could expand on the literature by investigating the potential causal links between school exposure and community violence. This study lacked causal inference due to an incomplete account of variables, particularly those unobservable, that differentiate neighborhoods with high versus low school exposure. Propensity score matching offers a method to address this challenge by creating a control group based on the likelihood of "treatment", which would be school exposure in this case, aiming to isolate the treatment effect as the primary distinction between control and treated groups (Kellogg et al., 2021). Although the effectiveness of this method hinges on the chosen relevant factors, it promises a more rigorous comparison

between neighborhoods of differing school exposure levels than methods not employing matching.

Furthermore, should longitudinal data be accessible, the synthetic control method provides a way to assess the impact of school exposure on community violence over time. This approach enhances propensity score matching by incorporating a time dimension, analyzing how the dependent variable, community violence, evolves post-treatment among comparable neighborhoods as they experience varying levels of school exposure. By examining changes in community violence among similar neighborhoods over time in response to increased school presence, the synthetic control method could address some of the shortcomings inherent in previous cross-sectional studies and natural experiments, offering a clearer understanding of the dynamics at play.

It is crucial to recognize that schools serve not only as gathering places but also as environments that can instill values and behaviors potentially mitigating violence nearby. This study has not delved into the internal dynamics within schools that could influence community violence. For instance, the presence of frequent police searches creates a different school atmosphere compared to environments where there is an emphasis on counseling and mental health support for students. School-based violence prevention programs could have a broader impact, affecting not just the immediate vicinity but also the wider areas where students live. Schools with a strong connection to their local communities might host more events and services aimed at fostering community engagement, thereby enhancing social cohesion among residents, parents, and school staff. These dimensions of school influence on violence have not been fully explored in the context of routine activities theory. Future research should aim to elucidate the

effects of varied school environments on neighborhood violence, offering insights into how schools can effectively contribute to safer communities.

Appendix A

IDW Regression Results With Restricted and Raw Data for SYs 2017-2019

	<i>Dependent variable: log(violent crime)</i>					
	Restricted			Raw		
	2017	2018	2019	2017	2018	2019
School exposure ⁺	-0.10*	-0.05	-0.04	-0.12**	-0.10**	-0.04
	(0.05)	(0.05)	(0.05)	(0.04)	(0.04)	(0.04)
Log(population)	0.28*	0.23	0.38**	0.26**	0.22**	0.21**
	(0.12)	(0.12)	(0.12)	(0.08)	(0.08)	(0.08)
Log(income)	-0.22	-0.47**	-0.37*	-0.20	-0.31**	-0.15
	(0.18)	(0.17)	(0.18)	(0.11)	(0.11)	(0.11)
<i>Proportion of demographic characteristics:</i>						
Residential mobility	-1.05	-0.44	-0.82	-0.68	-0.12	-0.26
	(0.69)	(0.66)	(0.69)	(0.49)	(0.47)	(0.47)
Under poverty	2.26**	1.79**	2.07**	1.01*	0.90	1.13*
	(0.72)	(0.69)	(0.73)	(0.50)	(0.48)	(0.48)
Owner occupancy	-0.74*	-0.68*	-0.84**	-0.47*	-0.34	-0.40*
	(0.29)	(0.27)	(0.29)	(0.19)	(0.19)	(0.19)
Racial minority	0.97**	0.96**	0.75**	0.79**	0.82**	0.82**
	(0.28)	(0.27)	(0.28)	(0.20)	(0.19)	(0.19)
<i>Proportion of land use:</i>						
Residential	0.47	-0.45	-0.57	-0.01	-0.37	-0.87
	(1.59)	(1.51)	(1.59)	(1.03)	(1.00)	(1.00)
Industrial	0.47	-0.47	-0.40	0.09	-0.50	-0.90
	(1.58)	(1.50)	(1.59)	(1.03)	(1.00)	(1.00)
Commercial	1.57	0.62	0.65	0.81	0.35	-0.18
	(1.68)	(1.59)	(1.68)	(1.11)	(1.07)	(1.07)
Civic	0.94	0.17	0.05	1.00	0.11	-0.04
	(1.67)	(1.59)	(1.68)	(1.11)	(1.07)	(1.07)
Recreational	0.39	-0.94	-0.75	0.47	-0.31	-1.58
	(1.85)	(1.75)	(1.85)	(1.22)	(1.18)	(1.18)
Vacant	0.72	0.06	0.13	0.30	0.45	-0.29
	(1.72)	(1.64)	(1.73)	(1.15)	(1.11)	(1.11)
Other	2.72	2.11	1.63	0.33	-0.29	-0.05

	(2.93)	(2.78)	(2.94)	(1.77)	(1.72)	(1.71)
Constant	1.26	5.19*	3.21	1.00	2.65	1.52
	(2.55)	(2.43)	(2.57)	(1.70)	(1.65)	(1.64)
Observations	332	332	332	452	452	452
Akaike Inf. Crit.	921.78	886.97	924.85	1,046.30	1,019.63	1,018.08
Wald Test (df = 1)	14.22**	15.21**	19.51**	9.70**	10.88**	10.33**

Note: + School exposure was standardized.

*p<0.05. **p<0.01.

Appendix B

IDW Regression Results by School Session and Level for SY 2017

	<i>Dependent variable: log(violent crime)</i>				
	Session		School level		
	In	Out	Elementary	Middle	High
School exposure ⁺	-0.12** (0.04)	-0.11* (0.05)	-0.11* (0.05)	-0.12* (0.06)	-0.02 (0.05)
Log(population)	0.19 (0.11)	0.29* (0.12)	0.31* (0.12)	0.30* (0.12)	0.26* (0.12)
Log(income)	-0.10 (0.15)	-0.25 (0.17)	-0.25 (0.18)	-0.20 (0.18)	-0.21 (0.18)
<i>Proportion of demographic characteristics</i>					
Residential mobility	-1.01 (0.59)	-0.71 (0.67)	-0.91 (0.69)	-1.18 (0.70)	-0.98 (0.71)
Under poverty	1.67** (0.62)	2.26** (0.70)	2.40** (0.72)	2.52** (0.73)	2.35** (0.73)
Owner occupancy	-0.58* (0.25)	-0.63* (0.28)	-0.74** (0.29)	-0.80** (0.29)	-0.78** (0.29)
Racial minority	0.86** (0.24)	0.89** (0.27)	0.90** (0.28)	0.82** (0.29)	0.98** (0.28)
<i>Proportion of land use:</i>					
Residential	0.27 (1.36)	0.55 (1.55)	0.45 (1.59)	0.57 (1.59)	0.57 (1.63)
Industrial	0.33 (1.36)	0.43 (1.54)	0.50 (1.58)	0.54 (1.58)	0.53 (1.63)
Commercial	1.39 (1.44)	1.64 (1.63)	1.42 (1.68)	1.64 (1.68)	1.72 (1.72)
Civic	1.29 (1.44)	0.77 (1.63)	0.88 (1.67)	0.75 (1.67)	0.81 (1.70)
Recreational	0.92 (1.59)	-0.05 (1.80)	0.40 (1.85)	0.52 (1.85)	0.65 (1.87)
Vacant	0.83 (1.48)	0.84 (1.68)	0.59 (1.72)	0.74 (1.73)	0.47 (1.76)
Other	1.17	2.07	2.64	3.06	3.26

	(2.51)	(2.85)	(2.93)	(2.93)	(2.96)
Constant	0.12	1.17	1.41	1.01	1.28
	(2.19)	(2.49)	(2.55)	(2.56)	(2.57)
Observations	332	332	332	332	332
Akaike Inf. Crit.	816.69	904.54	921.33	921.77	925.54
Wald Test (df = 1)	3.64	17.62**	13.11**	13.10**	14.75**

Note: + School exposure was standardized.

*p<0.05. **p<0.01.

Appendix C

IDW Regression Results by School Session and Level for SY 2018

	<i>Dependent variable: log(violent crime)</i>				
	Session		School level		
	In	Out	Elementary	Middle	High
School exposure ⁺	-0.11 [*] (0.04)	-0.05 (0.05)	-0.10 [*] (0.05)	-0.09 (0.05)	-0.01 (0.05)
Log(population)	0.19 (0.10)	0.25 [*] (0.12)	0.27 [*] (0.12)	0.26 [*] (0.12)	0.22 (0.12)
Log(income)	-0.34 [*] (0.14)	-0.34 [*] (0.17)	-0.49 ^{**} (0.17)	-0.48 ^{**} (0.17)	-0.46 ^{**} (0.17)
<i>Proportion of demographic characteristics:</i>					
Residential mobility	-0.47 (0.56)	-0.36 (0.67)	-0.38 (0.65)	-0.59 (0.66)	-0.42 (0.66)
Population under poverty	1.50 [*] (0.58)	1.89 ^{**} (0.70)	1.85 ^{**} (0.68)	1.96 ^{**} (0.69)	1.82 ^{**} (0.69)
Owner occupancy	-0.71 ^{**} (0.23)	-0.70 [*] (0.28)	-0.66 [*] (0.27)	-0.69 [*] (0.27)	-0.69 [*] (0.27)
Racial minority composition	0.84 ^{**} (0.23)	0.87 ^{**} (0.27)	0.87 ^{**} (0.27)	0.84 ^{**} (0.28)	0.96 ^{**} (0.27)
<i>Proportion of land use:</i>					
Residential	-0.06 (1.28)	-0.79 (1.54)	-0.39 (1.50)	-0.29 (1.51)	-0.44 (1.54)
Industrial	-0.16 (1.28)	-0.78 (1.53)	-0.36 (1.50)	-0.29 (1.51)	-0.47 (1.54)
Commercial	1.12 (1.36)	0.08 (1.62)	0.54 (1.59)	0.78 (1.59)	0.66 (1.62)
Civic	0.28 (1.35)	0.06 (1.62)	0.29 (1.58)	0.17 (1.58)	0.08 (1.61)
Recreational	-0.30 (1.49)	-1.37 (1.79)	-0.96 (1.75)	-0.75 (1.75)	-0.86 (1.77)
Vacant	0.73 (1.40)	-0.37 (1.67)	0.16 (1.62)	0.24 (1.64)	-0.08 (1.66)
Other	1.84	0.99	1.93	2.30	2.33

	(2.37)	(2.84)	(2.77)	(2.77)	(2.80)
Constant	3.14	3.82	5.18*	5.00*	5.24*
	(2.06)	(2.48)	(2.42)	(2.43)	(2.44)
Observations	332	332	332	332	332
Akaike Inf. Crit.	777.01	899.89	883.66	885.35	887.83
Wald Test (df = 1)	4.40*	14.19**	13.78**	13.93**	15.51**

Note: + School exposure was standardized.

* p<0.05. ** p<0.01.

Appendix D

Regression for Different Measures of School Exposure for SYs 2017 and 2018

	<i>Dependent variable: log(violent crime)</i>					
	2017			2018		
	(1)	(2)	(3)	(4)	(5)	(6)
School presence	0.26*			0.16		
	(0.12)			(0.12)		
School exposure ⁺ (w/o enrollment)		0.09			0.07	
		(0.05)			(0.05)	
School exposure ⁺ (with enrollment)			-0.10*			-0.05
			(0.05)			(0.05)
Log(population)	0.24	0.27*	0.28*	0.21	0.23*	0.23
	(0.12)	(0.12)	(0.12)	(0.12)	(0.11)	(0.12)
Log(income)	-0.24	-0.08	-0.22	-0.48**	-0.37*	-0.47**
	(0.18)	(0.17)	(0.18)	(0.17)	(0.16)	(0.17)
<i>Proportion of demographic characteristics:</i>						
Residential mobility	-0.82	-0.94	-1.05	-0.34	-0.29	-0.44
	(0.69)	(0.67)	(0.69)	(0.65)	(0.64)	(0.66)
Population under poverty	2.27**	1.87**	2.26**	1.77*	1.46*	1.79**
	(0.73)	(0.70)	(0.72)	(0.69)	(0.67)	(0.69)
Owner occupancy	-0.79**	-0.90**	-0.74*	-0.69*	-0.78**	-0.68*
	(0.29)	(0.28)	(0.29)	(0.27)	(0.27)	(0.27)
Racial minority composition	1.02**	0.72**	0.97**	0.99**	0.75**	0.96**
	(0.28)	(0.28)	(0.28)	(0.27)	(0.27)	(0.27)
<i>Proportion of land use:</i>						
Residential	0.37	1.03	0.47	-0.53	0.01	-0.45
	(1.59)	(1.54)	(1.59)	(1.50)	(1.47)	(1.51)
Industrial	0.34	1.06	0.47	-0.56	0.12	-0.47
	(1.58)	(1.53)	(1.58)	(1.50)	(1.46)	(1.50)
Commercial	1.45	2.24	1.57	0.51	1.18	0.62
	(1.68)	(1.62)	(1.68)	(1.59)	(1.55)	(1.59)

Civic	0.51 (1.67)	1.13 (1.62)	0.94 (1.67)	-0.08 (1.58)	0.51 (1.55)	0.17 (1.59)
Recreational	0.43 (1.85)	0.88 (1.79)	0.39 (1.85)	-0.99 (1.75)	-0.49 (1.71)	-0.94 (1.75)
Vacant	0.22 (1.71)	1.17 (1.66)	0.72 (1.72)	-0.21 (1.62)	0.56 (1.58)	0.06 (1.64)
Other	3.43 (2.93)	2.28 (2.83)	2.72 (2.93)	2.46 (2.78)	1.51 (2.71)	2.11 (2.78)
Constant	1.90 (2.56)	-1.05 (2.48)	1.26 (2.55)	5.61* (2.44)	3.30 (2.39)	5.19* (2.43)
Observations	332	332	332	332	332	332
Akaike Inf. Crit.	921.37	903.32	921.78	886.08	872.15	886.97
Wald Test (df = 1)	12.68**	40.79**	14.22**	13.97**	34.76**	15.21**

Note: + School exposure was standardized.

*p<0.05. **p<0.01.

CHAPTER IV

The Impact of Neighborhood Violence on Youth Behaviors in School

This study examines school violence as a reflection of neighborhood violence through the lens of social disorganization theory. According to social disorganization theory, specific demographic disadvantages render neighborhoods more susceptible to violent behavior. The theory further suggests that social cohesion among neighborhood residents can mediate the impact of these disadvantages, reducing the likelihood of violence. The theory hypothesizes that communities with strong cohesion are better equipped to implement social controls and pursue collective objectives, trusting that fellow members will contribute to these shared goals. In contrast, a lack of cohesion can result in disorganization extending into the school environment, culminating in increased violence both within neighborhoods and schools.

Qualitative studies, exemplified by Brunson and Miller (2009) and Mateu-Gelabert and Lune (2007), have illuminated the influence of neighborhood environments on student behaviors and interactions within schools. These studies demonstrated that students often form gangs based on their residential neighborhoods, leading to conflicts within schools based on gang memberships. Additionally, social norms prevalent in neighborhoods, known as "street codes," are observed to be transposed into schools, dictating students' antisocial and violent behaviors (Mateu-Gelabert & Lune, 2007). Quantitative research, however, has presented mixed evidence. While Welsh et al. (2000) and Chen (2008) found no significant impact of community violence on school disorder or violence after accounting for other school and community characteristics, Armstrong et al. (2015) reported a notable influence of community crime and disorder on school misconduct.

This study extends existing literature by analyzing the complex relationship between community violence and school violence. Using structural equation modeling, the study investigates the pathways through which community characteristics, including community violence, contribute to instances of school violence. The analysis includes considerations for social cohesion within the community, peer anti-social behaviors, and school climate based on social disorganization theory and previous empirical studies (Armstrong et al., 2015; Mateu-Gelabert & Lune, 2007; Welsh et al., 2000), which have indicated their significant influence on school violence.

Literature Review

Violence within and around schools is often seen as a reflection of the surrounding community, a perspective rooted in social disorganization theory. According to this theory, crime and delinquency signal social disorganization within communities (National Research Council, 1994; Shaw & McKay, 1942). Social disorganization itself refers to a community's inability to develop and uphold common values among its residents (Kubrin, 2010), making socially disorganized communities less capable of collectively pursuing violence prevention. Socially organized communities, in contrast, show solidarity, cohesion, and social ties among residents (Kubrin et al., 2008). Social disorganization theory directly links community violence to neighborhood characteristics, suggesting that where individuals live significantly influences their propensity for violent behavior. Common traits of disorganized communities include high levels of poverty, residential mobility, and racial/ethnic heterogeneity, which are collectively identified as neighborhood disadvantages (Krug et al., 2002; National Research Council, 1994; Shaw & McKay, 1969).

In relation to schools, social disorganization theory might extend the effects of disorganized neighborhoods through a variety of mechanisms. Kubrin and Weitzer (2003) suggests that schools situated in socially disorganized areas can become focal points where the broader community's issues converge by highlighting highlight how environmental factors influence school settings. Sampson et al. (1997) found that the high levels of poverty, residential mobility, and racial/ethnic heterogeneity characteristics of disorganized communities may manifest within school environments as well, affecting students, faculty, and staff. This can lead to a diminished sense of community and weaker social ties within the school, mirroring the lack of cohesion and solidarity found in the surrounding neighborhood, a phenomenon observed in research by Shaw and McKay (1942). Additionally, Kurbrin (2003) indicated that schools in such areas may struggle with limited resources, exacerbating the challenges of fostering a positive, supportive, and safe educational environment. Social disorganization theory suggests that these conditions can facilitate an environment where violence is more likely to occur, not just as a direct reflection of the community's characteristics, but also due to the strained social bonds and the absence of strong, communal mechanisms of informal social control (Bursik & Grasmick, 1993). Consequently, schools in disorganized communities might inadvertently contribute to the perpetuation of violence, both within their walls and in the surrounding areas, by reflecting and amplifying the social disorganization that characterizes their neighborhoods (Sampson & Groves, 1989).

Social cohesion can act as a protective factor that mitigates the impact of neighborhood disadvantages on community violence. Defined as a sense of solidarity among a group of individuals, social cohesion is built on trusting relationships and shared norms and values, leading to stronger bonds based on collective principles (Manca, 2014). Within the framework of

social disorganization theory, social cohesion becomes crucial when disorganization emerges from neighborhood disadvantages. In such scenarios, cohesive communities mobilize, uniting their members to devise and implement interventions to curb violence. The prevailing trust within these communities fosters a collective effort, with each member contributing towards nurturing prosocial behaviors among the youth and actively addressing antisocial behaviors.

Qualitative studies aligned with social disorganization theory illustrate how community violence can spill into schools. Through ethnographic studies, Mateu-Gelabert and Lune (2003) discovered that a majority of violent incidents originated in neighborhoods and then led to conflicts within schools. Belonging to a “block gang” played a central role in this flow of violence. Block gangs refer to groups of youth who identify themselves with the geographical area in which they reside and show power and control over the area to outsiders. While providing protection within the group, it also fueled conflicts in schools, especially when students from different block gangs frequently interacted. In particular, students who were unaware of or did not rely on the concept of block gangs were more vulnerable to violence as they would be attacked by other block gangs without protection from a gang of their own.

Brunson and Miller (2009) further highlighted the structural factors within neighborhoods and their impact on violent incidents both in neighborhoods and schools. After surveying and interviewing African American male high school students in St. Louis, Missouri, they discovered that students reported more exposure to neighborhood violence than violence within the school. Gang membership was a primary contributor to violent incidents in schools. Gang affiliation formed divisions among students, and gang rivalry promoted disputes over normal behaviors. Many students viewed schools as a “relative sanctuary from risks for serious violence” in the neighborhood (p. 201). The schools, recognizing the threat that gang-related antisocial behaviors

posed to student safety, adopted various protective measures. Fewer violent incidents occurred in schools than in neighborhoods, and school violence was less serious than neighborhood violence as school-based incidents rarely involved firearms. This study revealed that schools not only share similar characteristics with the neighborhood where they are located but also serve as a social safety net, protecting students from severe neighborhood violence and the negative consequences associated with dropping out.

Mateu-Gelabert and Lune (2007) explored how youths' experiences in neighborhoods shape their behavior within schools through the lens of the "code of the street." Conducting field observations in a high school situated in impoverished neighborhoods of New York City, they found that students engaging in violent behaviors demanded respect from their peers in a manner mirroring street dynamics. Some students felt the need to act badly to avoid victimization in school, challenging the notion of schools as protective spaces. This contradicted Brunson and Miller's (2009) findings, thus highlighting the complexity of the relationship between neighborhoods and schools.

In a comprehensive literature review, Bell et al. (2022) identified similarities in codes governing behavior in street, school, and prison environments, particularly for Black male students. In prison, loyalty to other inmates and showing toughness were informal codes that regulated social interactions among incarcerated individuals. Bell et al. (2022) argued that similar codes were present in urban communities that have experienced racial inequality, systemic disadvantage, poverty, and distrust of law enforcement. Based on several empirical studies, violence has become a tool to earn respect, social status, and protection in those communities (Anderson, 2000; Brunson & Stewart, 2006; Jones, 2009; Kurtenbach & Rauf, 2019; Stewart et al., 2006). School codes resemble street codes as the use of violence is a sign of

strength, and avoiding violence invites more attacks from other students (Bell, 2021). Similar to Mateu-Gelabert and Lune (2007), Bell (2021) also found that students did not believe schools protect them from violence on school grounds and that violence was promoted through self-defense among students whose neighborhood has a street environment.

Welsh et al. (2000) quantitatively examined the direct and indirect effects of community violence on school disorder. Following social disorganization theory, the authors hypothesized that community characteristics influence school disorder through community violence and school stability. Recognizing that schools draw students from multiple communities and are geographically situated within a community, the authors operationalized community in two ways: local and imported communities. Local communities indicate the areas in which schools are located (i.e., the census tracts that contains a school). Imported communities refer to the average demographic characteristics of the communities in which students reside. Using path analyses, the authors found results contradictory to those from qualitative studies. Both models—local communities and imported communities—did not find community crime to be a significant predictor of school disorder. However, school stability had a large effect on school disorder in both models. Community poverty had a direct effect on school disorder, with most of its impact being indirect through school stability. Community stability was significantly associated with community crime but not with school stability. The local community model demonstrated significantly higher fit and estimates, suggesting that local communities may exert a greater impact on school disorder than imported communities. These findings provided important implications for subsequent studies because studies prior to Welsh et al. (2000) indicated that schools in high-violence communities also experience high violence on school grounds (Anderson, 1998; Bowen & Bowen, 1999). Welsh et al. (2000) also found a positive bivariate

relationship between community violence and school disorder. However, the mechanisms through which communities impact schools are more complex. Their study suggested that community poverty affects school disorder, largely through school stability or lack thereof, instead of through community crime; this means that while communities influence school violence, schools may be able to mediate this effect through higher stability.

Chen (2008) extended Welsh et al.'s (2000) school disorder model by including school security programs and serious penalties related to students' violent behavior. Chen tested three hypotheses: 1) schools predominantly serving poor and minority students report more crime; 2) urbanicity and community crime are positively associated with school crime; and 3) the effects of school and community characteristics are mediated by school policy and management. Structural equation modeling confirmed most of these hypotheses. Urbanicity had a positive direct effect on school crimes, indicating that urban schools generally have more school crimes than rural or town schools. School size indirectly influences school crime through student misbehavior and mobility, accounting for 31% of the total effect of school size. Community crime showed a significant and large association with school crime in the bivariate analysis, but the association was no longer significant after controlling for other community and student characteristics. Contrary to the hypothesis, students' socioeconomic status (SES) and school security programs were not significantly associated with school crime after accounting for other variables. However, serious penalties showed a significant positive effect on school crime, suggesting that disciplinary policies aimed at preventing violence may be counterproductive and potentially increase school violence.

Contrary to prior results, Armstrong et al. (2015) concluded that community crime and disorder are linked to school misconduct, even after accounting for other community, school, and

student characteristics. Examining three hypotheses, the authors posited that community structural characteristics (e.g., poverty and racial heterogeneity) increase the likelihood of school misconduct, independent of school and student characteristics. They also argued that community crime and disorder elevate the likelihood of school misconduct, and school climate may mediate the effect of community characteristics on school misconduct. Through hierarchical linear modeling, the authors determined that students were more likely to engage in school misconduct when their schools were located in neighborhoods with higher levels of concentrated disadvantage. Concentrated disadvantage referred to structural characteristics of communities (i.e., poverty, public assistance, unemployment, female-headed households, high school graduation) that were associated with school misconduct. Community crime and disorder had a positive effect on school disorder, mediating the effect of concentrated disadvantage on school misconduct.

Collectively, these studies highlight a number of limitations and emerging questions regarding the relationship between community and school violence. First, while qualitative research has offered valuable insights into how violence from communities spills into schools, there remains a need for more comprehensive quantitative analyses that can delineate the broader patterns of this phenomenon across different contexts. The mixed findings between qualitative narratives and quantitative results, such as those from Welsh et al. (2000) and Chen (2008), suggest that the mechanisms connecting community violence to school disorder are complex and may vary significantly based on local community characteristics and school policies. Moreover, the counterintuitive findings regarding school security measures, as shown in Chen (2008), raise important questions about the efficacy of current strategies to mitigate school violence.

Second, there is a critical need to further investigate the role of social cohesion within schools and its potential to buffer the impacts of community violence. While social disorganization theory provides a framework for understanding the spill-over of community violence into schools, it also posits that strong social bonds and collective efficacy can mitigate violence. However, there are few empirical studies, if any, that have examined the effect of social cohesion on school violence. Lastly, the nuanced effects of community characteristics on school violence, particularly the intricate dynamics revealed in qualitative studies, reveals an existing gap in our understanding of how the interactions between students and their teachers and peers, coupled with the attributes of the surrounding neighborhoods, affect school violence. This underscores the importance of examining both the direct and indirect pathways through which community violence affects school environments, including the mediating roles of school size, student-teacher trust and peer antisocial behavior.

The purpose of this study is to address these limitations by expanding on models of school crime and disorder, with a particular focus on exploring social cohesion as a mediator between community violence and school violence. Previous studies have not analyzed social cohesion as a mediator for community violence and thus could not test the theoretical mechanism through which community characteristics affect violence. Additionally, the study investigates the mechanisms through which community violence influences school violence, drawing upon insights from qualitative studies such as those conducted by Mateu-Gelabert and Lune (2003) and Brunson and Miller (2009). These studies shed light on the complex dynamics of gang membership and its influence on peer interactions within schools, which can exacerbate violence. Moreover, while Brunson and Miller (2009) noted that schools could act as buffers against the adverse effects of gang violence by implementing safety measures, Mateu-Gelabert and Lune

(2007) and Bell (2021) revealed the challenges posed by "street codes" infiltrating school environments, often leaving students feeling unprotected due to inadequate intervention from teachers.

By incorporating these nuanced insights into its analytic model, this study not only investigates the direct and indirect effects of community violence on school violence but also examines the roles of youth antisocial behavior and student-teacher relationships in this complex interplay. Through this comprehensive approach, the study aims to contribute valuable empirical evidence to the literature, offering a deeper understanding of the multifaceted relationship between community characteristics, social cohesion, and violence within school settings.

Methods

Data/Sample

The study used datasets from the Metropolitan Nashville Police Department (MNPD), the American Community Survey (ACS), and the Metropolitan Nashville Public Schools (MNPS). The MNPD dataset includes nine offense types that meet the FBI's definition of violent crime, further classified into four types: homicide, robbery, sexual assault, and aggravated assault. The ACS dataset includes relevant community characteristics such as total population, percentages of different minority populations, population below 100% poverty, and people who moved within the past 12 months.

The MNPS datasets consist of administrative, discipline, and survey data. Administrative data provide student (e.g., age, gender, race) and school characteristics (e.g., school level, student enrollment) for all public schools within the district. Discipline data include the number of behavioral incidents for each student during a school year, segmented by different offense types. Survey data present self-reported information on students' neighborhoods, peer relationships, and

school climate. MNPS collected this information through two different surveys: the Neighborhood and Wellbeing Survey and the School Climate Survey. The Neighborhood and Wellbeing Survey, administered from SY 2019 to SY 2021, achieved response rates of 78% in SY 2019, 62% in SY 2020, and 42% in SY 2021. Similarly, the School Climate Survey was conducted during SYs 2019-2021. In 2021, faced with challenges posed by the COVID-19 pandemic, the survey was streamlined and exclusively administered to middle and high school students. Response rates were 79% in SY 2019, 84% in SY 2020, and 42% in SY 2021. To ensure robust internal validity, the study confines its sample population to middle and high school students in traditional public schools during SYs 2019-2020. Student responses were averaged at the school level for the School Climate Survey as the dataset did not include unique student IDs for data privacy.

Variables/Measures

The analytical framework comprised nine variables representing community and school characteristics, with six manifest variables and three latent variables.

Community Characteristics

Five variables capture relevant community characteristics. Community poverty represents the proportion of the population below 100% poverty using ACS data. Residential mobility is measured by the proportion of the population residing in a different location than the previous year. Minority composition indicates the proportion of the population identifying with a race other than White. Community violence is measured by the incidence of violent crimes in a block group. Social cohesion, indicating the strength of relationships and a sense of solidarity among members of a community, is treated as a latent variable (Office of Disease Prevention and Health Promotion, n.d.). MNPS used the neighborhood social cohesion scale from the Community

Surveys of the Project on Human Development in Chicago Neighborhoods (PHDCN) study (Raudenbush et al., 1999; Sampson et al., 1997). The original scale was adjusted slightly based on the age group of the district's student population. The scale has five Likert-scale items with five response options ranging from "strongly disagree" to "strongly agree." It showed an internal consistency reliability of 0.77 in SY 2019 and 0.76 in SY 2020.

School Characteristics

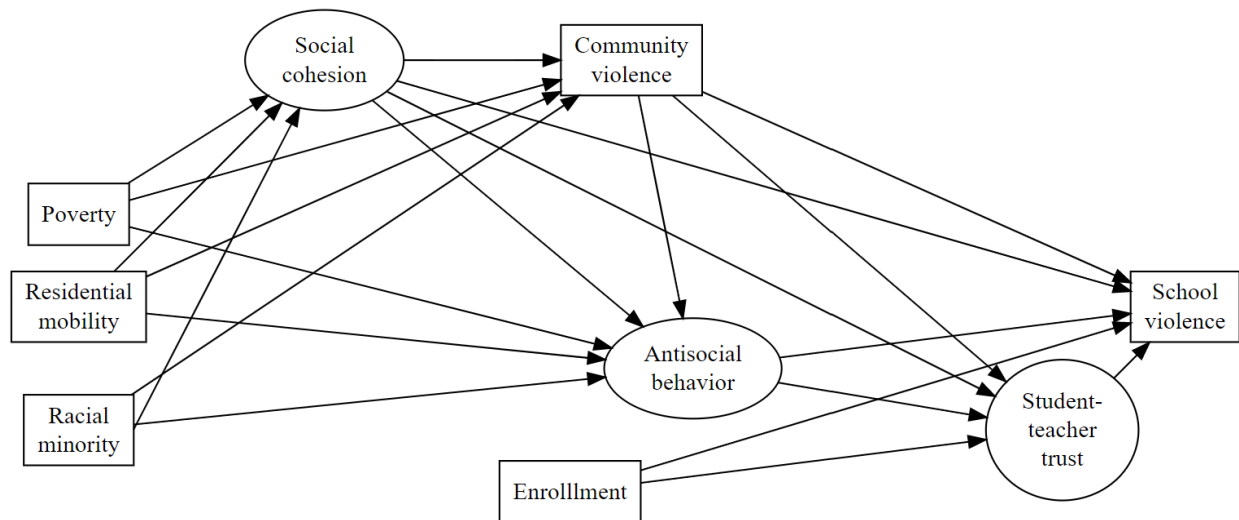
Four variables pertain to school and/or student characteristics. School size is measured by the number of students enrolled at the beginning of the school year. School violence is operationalized similarly to community violence, counting the number of physical attacks, weapon use, bullying, harassment, gang activities, and other incidents that harmed other students or threatened to harm them. Antisocial behavior is a latent variable indicating the extent to which students engage in delinquent activities, such as getting into fights, destroying properties, selling drugs, thefts, and gang activities. MNPS used the antisocial peer behavioral scale from the Louisville Youth Violence Prevention Research Center Survey (Nashville Longitudinal Study for Youth Safety and Wellbeing, 2020). The scale includes five Likert-scale items assessing the extent of peers' involvement in antisocial behaviors, with responses ranging from "none" to "most or all." Internal consistency reliability was 0.83 for SY 2019 and 0.84 for SY 2020. Student-teacher trust, another latent variable, integrates the scale from the 5 Essentials Survey measuring student perceptions of the relationship and trust level between students and teachers (Consortium on Chicago School Research, 2007). The scale consists of five Likert-scale items with response options ranging from "strongly disagree" to "strongly agree." It had internal consistency reliabilities of 0.88 for SY 2019 and 0.89 for SY 2020.

Analytic Model

The study used structural equation modeling to examine the causal relationship between community violence and school violence. Figure 1 illustrates the mechanisms by which community violence affects school violence, along with other relevant community, school, and student characteristics.

Figure 1.

Path Diagram of the Study Model



This model evaluates the hypothesized relationships between community violence and school violence based on previous empirical studies. Following the social disorganization theory, existing studies have shown that poverty, residential mobility, and minority composition contribute to higher community violence through social disruption (Krug et al., 2002). Welsh et al. (2000) and Chen (2008) concluded that school size and school climate play influential roles in shaping school violence. Qualitative studies further imply that neighborhood violence affects

peer interactions in schools through gang membership and “street codes” that govern behavioral norms between community members (Brunson & Miller, 2009; Mateu-Gelabert & Lune, 2003). Several studies have also indicated that students may not perceive their schools as a safety net from community violence because their teachers do not intervene or show care for students’ safety and well-being (Bell, 2021; Mateu-Gelabert & Lune, 2007). All these phenomena were considered in developing the analytic model. Prior to interpreting the relationships between the variables, model fit was examined using multiple goodness-of-fit indices, such as the root mean square error of approximation (RMSEA), comparative fit index (CFI), Tucker-Lewis index (TLI), and the standardized root mean squared residual (SRMR). The Chi-square test, a common fit measure, was not used due to its high sensitivity to sample size. Full information maximum likelihood (FIML) was used to account for missing data. All count variables (e.g., community violence, student enrollment) in the model were log-transformed due to their skewed distribution. The model accounted for clustering at the school level, and the results were based on cluster-robust standard errors and test statistics.

Results

Table 1 presents the descriptive statistics of the study variables for SYs 2019 and 2020. On average, students experienced 106 violent incidents in their neighborhoods during SY 2019 and 109 incidents during SY 2020. School violence was low in both school years, with an average of 0.12 violent incidents per student in SY 2019 and 0.09 in SY 2020. Most students (92% in SY 2019 and 94% in SY 2020) did not receive any disciplinary referrals during the school years. However, a few students had 10 or more referrals due to their involvement in violent behaviors. Other neighborhood and school characteristics were generally similar between the two school years.

Table 1.*Descriptive Statistics of Variables*

	SY 2019 (N=45,536)	SY2020 (N=46,112)	Overall (N=91,648)
Community violence			
Mean (SD)	106 (199)	109 (206)	107 (203)
Median [Min, Max]	44.0 [1, 1,190]	44.0 [1, 1,190]	44.0 [1, 1,190]
Median income (\$)			
Mean (SD)	82,500 (58,000)	82,300 (58,300)	82,400 (58,100)
Median [Min, Max]	63,500 [21,900, 250,000]	62,300 [9,660, 250,000]	63,500 [9,660, 250,000]
Missing	549 (1.2%)	320 (0.7%)	869 (0.9%)
Under poverty (%)			
Mean (SD)	13.8 (9.86)	13.8 (9.99)	13.8 (9.93)
Median [Min, Max]	11.2 [0.209, 45.5]	11.2 [0.209, 45.5]	11.2 [0.209, 45.5]
Residential mobility (%)			
Mean (SD)	19.7 (9.20)	19.7 (9.23)	19.7 (9.21)
Median [Min, Max]	18.8 [7.52, 47.8]	18.8 [7.52, 47.8]	18.8 [7.52, 47.8]
Racial minority (%)			
Mean (SD)	38.4 (27.3)	38.3 (27.2)	38.4 (27.2)
Median [Min, Max]	33.9 [0, 98.6]	33.9 [0, 98.6]	33.9 [0, 98.6]
School level			
Middle	20,157 (44.3%)	18,798 (40.8%)	38,955 (42.5%)
High	25,379 (55.7%)	27,314 (59.2%)	52,693 (57.5%)
Student enrollment			
Mean (SD)	955 (587)	977 (599)	966 (593)
Median [Min, Max]	765 [16.0, 2,290]	792 [3.00, 2,290]	773 [3.00, 2,290]
School violence			
Mean (SD)	0.12 (0.47)	0.09 (0.39)	0.10 (0.43)

	SY 2019 (N=45,536)	SY2020 (N=46,112)	Overall (N=91,648)
Median [Min, Max]	0 [0, 11]	0 [0, 13]	0 [0, 13]
Gender			
Male	23,335 (51.2%)	23,689 (51.4%)	47,024 (51.3%)
Female	22,198 (48.7%)	22,421 (48.6%)	44,619 (48.7%)
Missing	3 (0.0%)	2 (0.0%)	5 (0.0%)
Race			
American Indian	50 (0.1%)	53 (0.1%)	103 (0.1%)
Asian	1,805 (4.0%)	1,720 (3.7%)	3,525 (3.8%)
Black	18,860 (41.4%)	18,566 (40.3%)	37,426 (40.8%)
Hispanic/Latino	12,157 (26.7%)	13,282 (28.8%)	25,439 (27.8%)
Pacific Islander	40 (0.1%)	37 (0.1%)	77 (0.1%)
Multiple	549 (1.2%)	636 (1.4%)	1,185 (1.3%)
White	12,068 (26.5%)	11,812 (25.6%)	23,880 (26.1%)
Missing	7 (0.0%)	6 (0.0%)	13 (0.0%)

Table 2 illustrates the bivariate relationship among the study variables. School violence was inversely correlated with social cohesion, antisocial peer behavior, student enrollment, and residential mobility, though their correlations were relatively weak (less than 0.2). In particular, the negative correlation with student enrollment deviates from the findings of Welsh et al. (2000) and Chen (2008), who reported a positive correlation between larger school sizes and higher school violence. Community violence had positive associations with poverty, residential mobility, and racial minority composition with strong correlations that align with social disorganization theory. Additionally, community violence was negatively associated with student enrollment. This aligns with Armstrong et al. (2015) but contrasts with Chen (2008). The correlations involving social cohesion appeared to challenge the social disorganization theory.

Specifically, social cohesion displayed a positive association with residential mobility, suggesting that neighborhoods with high mobility rates tend to have strong social cohesion. Moreover, social cohesion did not have statistically significant bivariate correlations with poverty or racial minority composition. Interestingly, antisocial peer behaviors were positively associated with student-teacher trust. Although the relationship between antisocial peer behaviors and student-teacher trust has not been quantitatively examined, this finding contradicts the narratives presented by Mateu-Gelabert and Lune (2003).

Table 2.*Correlation Matrix of Variables*

	School violence	Community violence	Social cohesion	Antisocial peer behavior	Student-teacher trust	Poverty	Residential mobility	Racial minority	
School violence	1								
Community violence	-.03	1							
Social cohesion	-.06**	.01	1						
Antisocial peer behavior	-.12**	.03	.18**	1					
Student-teacher trust	-.02	.11	.16**	.13**	1				
Enrollment	-.04*	-.30*	-.01	-.01	-.42**	1			
Poverty	-.01	.68**	.02	.04	.06	-.32**	1		
Residential mobility	-.06*	.40*	.10*	.08**	.31**	-.19	.17	1	
Racial minority	.01	.55**	-.06	-.01	-.18	-.04	.53**	-.01	1

*p<0.05. **p<0.01.

The structural equation model consisted of measurement and regression models. The measurement models include survey items used to assess latent variables such as social cohesion, antisocial peer behaviors, and student-teacher trust. The models presented a very good model fit, with factor loadings greater than 0.6 for all latent variables (Appendix A). In Figure 1, the regression model, fitted to the data for each school year, exhibited good model fit across all fit indices for both years. The robust RMSEAs of 0.06 and 0.05 for SYs 2019 and 2020, respectively, surpassed the 0.08 threshold as suggested by Hooper et al. (2008). The robust CFIs of 0.96 and 0.97, along with robust TLIs of 0.95 and 0.97, met the 0.95 standards for a very good model fit (Hooper et al., 2008). The SRMRs of 0.05 and 0.07 were also lower than the 0.09 threshold (Hooper et al., 2008).

The regression estimates closely mirrored the bivariate correlations presented in Table 2. In SY 2019, poverty had a direct effect on community violence, yielding the largest effect size ($\beta = 0.46$) among the three demographic characteristics (Table 3.3). Residential mobility and racial minority composition also directly contributed to an increase in community violence, with the effect size of residential mobility ($\beta = 0.32$) surpassing that of the racial minority ($\beta = 0.30$). Contrary to the model hypothesis, social cohesion did not mediate the effects of the three demographic characteristics on community violence. In addition, social cohesion did not have a statistically significant direct effect on community violence, further supporting its limited association with community violence.

School violence was affected directly by community violence, suggesting that elevated community violence corresponded to decreased school violence ($\beta = -0.04$). This direct effect was statistically significant, in contrast to the non-significant bivariate correlation between school violence and community violence. This finding was also not consistent with Welsh et al.

(2000) and Chen (2008), who indicated no significant relationship between community violence and school violence. However, it is worth acknowledging that the effect of community violence, while statistically significant, presents little practical significance due to its modest effect size.

Community violence did not demonstrate a statistically significant indirect effect through antisocial peer behaviors or student-teacher trust. Furthermore, school violence was influenced both directly and indirectly by social cohesion. Higher social cohesion directly corresponded to lower school violence ($\beta = -0.06$). The suppressive effect of social cohesion was accentuated by more antisocial peer behaviors, resulting in a total effect of $-0.08 (-0.06 + 0.17 \times -0.15)$. Larger student enrollment was also directly related to decreased school violence ($\beta = -0.06$), although this effect was not mediated by student-teacher trust. Antisocial peer behaviors had a negative association with school violence ($\beta = -0.15$), suggesting that an increase in antisocial peer behaviors was linked to reduced school violence. This result contrasts with qualitative studies that have highlighted a connection between street violence and school violence (Bell, 2021; Mateu-Gelabert & Lune, 2007).

In addition to their mediating effects, antisocial peer behaviors and student-teacher trust reflected interesting relationships with other school and neighborhood characteristics. For example, antisocial peer behaviors increased with greater social cohesion ($\beta = 0.17$). Conversely, a higher minority composition decreased antisocial peer behaviors when the neighborhood was highly cohesive ($-0.16 \times 0.16 = -0.03$). Poverty did not affect the antisocial behaviors perceived by students. The trust between students and teachers was higher in schools with fewer enrolled students ($\beta = -0.59$) and greater social cohesion in the surrounding neighborhood ($\beta = 0.25$). Antisocial peer behaviors amplified the effect of social cohesion on student-teacher relationships, resulting in an increased total effect of $0.28 (0.25 + 0.17 \times 0.15)$.

Table 3.*Standardized SEM results for SYs 2019 and 2020*

	SY 2019		SY 2020	
	Std. Estimate(SE)	p ⁺	Std. Estimate(SE)	p ⁺
<u>Regression Slopes</u>				
<u>Social cohesion</u>				
Poverty	0.04(0.13)	.78	-0.04(0.18)	.81
Residential mobility	0.21(0.07)**	.00	0.24(0.09)**	.01
Racial minority	-0.16(0.06)*	.01	-0.22(0.10)*	.03
<u>Community violence</u>				
Poverty	0.46(0.06)**	.00	0.47(0.06)**	.00
Residential mobility	0.32(0.10)**	.00	0.32(0.09)**	.00
Racial minority	0.30(0.08)**	.00	0.31(0.08)**	.00
Social cohesion	-0.02(0.03)	.33	0.03(0.03)	.34
<u>Antisocial peer behavior</u>				
Community violence	-0.01(0.05)	.91	-0.02(0.06)	.77
Social cohesion	0.17(0.02)**	.00	0.20(0.02)**	.00
Poverty	0.02(0.07)	.81	0.02(0.08)	.82
Residential mobility	0.09(0.05)	.06	0.12(0.05)*	.02
Racial minority	-0.05(0.05)	.33	-0.09(0.07)	.16
<u>Student-teacher trust</u>				
Antisocial peer behavior	0.15(0.04)**	.00	0.18(0.07)*	.01
Student enrollment	-0.59(0.13)**	.00	-0.55(0.16)**	.00
Community violence	-0.08(0.16)	.64	0.05(0.14)	.72
Social cohesion	0.25(0.06)**	.00	0.35(0.10)**	.00
<u>School violence</u>				
Antisocial peer behavior	-0.15(0.02)**	.00	-0.09(0.02)**	.00
Student-teacher trust	0.01(0.02)	.75	0.02(0.02)	.15
Student enrollment	-0.06(0.03)*	.02	-0.03(0.02)	.12
Community violence	-0.04(0.02)*	.04	-0.05(0.02)**	.00
Social cohesion	-0.06(0.01)**	.00	-0.05(0.02)**	.00
<u>Fit Indices</u>				
Robust RMSEA	0.06		0.05	
Robust CLI	0.96		0.97	
Robust TLI	0.95		0.97	
SRMR	0.05		0.07	

Notes: ⁺ P-values were calculated from the original, unstandardized estimates and standard errors. *p<0.05. **p<0.01.

The regression estimates varied based on school level. Initially, when the data were segregated by school level, the original model did not achieve the same level of fit as it did when the data were not separated. The model demonstrated a reasonable fit for middle schools but fell short of a good fit for high schools. Subsequently, the model was modified, adding the effect of student enrollment on community violence and antisocial behaviors and including the effect of poverty, residential mobility, and racial minority in all endogenous variables. The modified model displayed an improved fit for both middle and high schools, satisfying the required thresholds for all fit indices (Table 4).

In middle schools, school violence was directly impacted by antisocial peer behaviors, community violence, and social cohesion, consistent with the findings for all school levels (Table 4). Higher student enrollment, social cohesion, and residential mobility indirectly reduced school violence through antisocial peer behaviors. Conversely, a higher proportion of racial minorities augmented school violence via antisocial behaviors. In high schools, community violence did not influence school violence; instead, school violence was directly mitigated by greater trust between students and teachers, higher social cohesion, larger student enrollment, and more perceived antisocial peer behaviors. Student-teacher trust also suppressed the impact of residential mobility on school violence, highlighting its importance in violence prevention within high schools.

In SY 2020, the regression results remained largely consistent (Table 3). Increased community violence continued to be directly linked to reduced school violence, and antisocial peer behaviors and student-teacher trust did not mediate the effect of community violence. Social cohesion still lacked a statistically significant impact on community violence but maintained a suppressive effect on school violence through antisocial peer behaviors. However, a major

change was observed in student enrollment, which no longer predicted school violence. Also, residential mobility now increased antisocial peer behaviors directly and indirectly through social cohesion. The results by school level mirrored those of the previous year, with a few exceptions (Appendix B). For instance, in high schools, student enrollment no longer directly suppressed school violence but continued to reduce it through the mediation of antisocial peer behaviors. On the other hand, poverty emerged as a significant predictor of school violence, mediated by student-teacher trust. The model fit did not meet the required thresholds for middle schools in SY 2020, suggesting potential limitations in the model's generalizability.

Table 4.

Standardized SEM Results by School Level for SY 2019

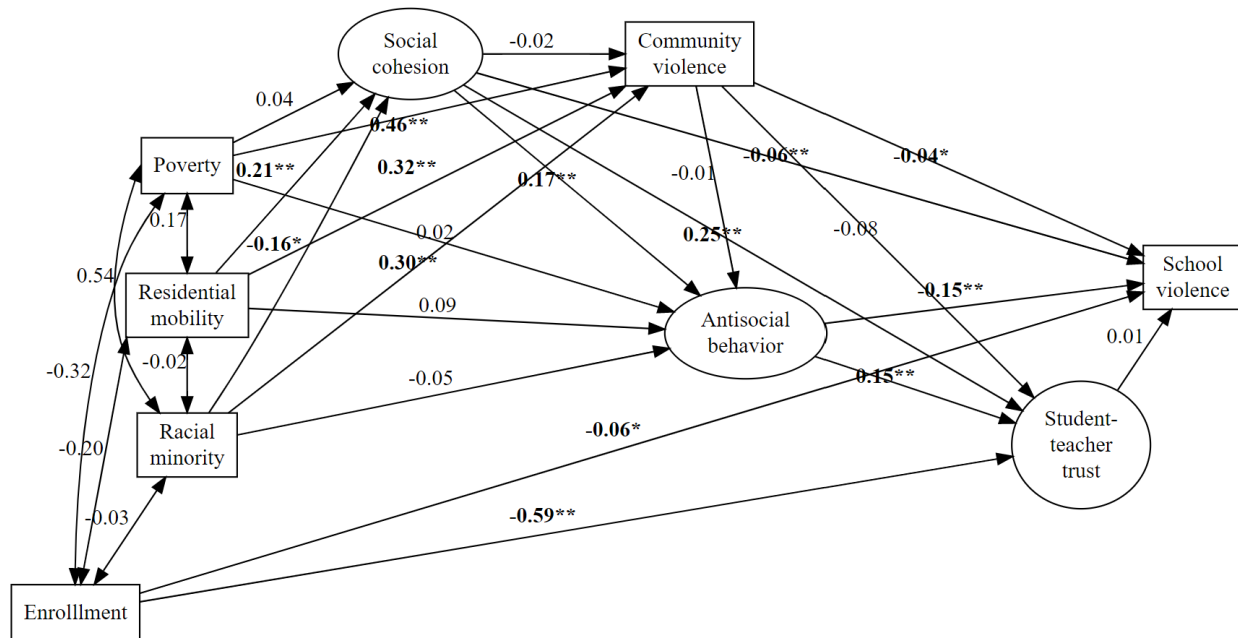
	Middle school		High school	
	Estimate(Std.Err.)	p ⁺	Estimate(Std.Err.)	p ⁺
	<u>Regression Slopes</u>			
<u>Social cohesion</u>				
Poverty	0.12(0.12)	.30	-0.08(0.06)	.23
Residential mobility	0.02(0.03)	.52	0.23(0.05)**	.00
Racial minority	-0.10(0.06)	.12	-0.05(0.04)	.20
<u>Community violence</u>				
Poverty	0.36(0.11)**	.00	0.42(0.08)**	.00
Residential mobility	0.17(0.12)	.18	0.40(0.13)**	.00
Racial minority	0.38(0.12)**	.00	0.36(0.10)**	.00
Social cohesion	-0.04(0.03)	.26	-0.05(0.05)	.40
Student enrollment	0.09(0.10)	.37	-0.15(0.07)*	.03
<u>Antisocial peer behavior</u>				
Community violence	0.03(0.02)	.27	-0.08(0.19)	.67
Social cohesion	0.20(0.02)**	.00	0.15(0.02)**	.00
Student enrollment	0.10(0.02)**	.00	0.00(0.09)	.97
Poverty	0.07(0.05)	.15	0.01(0.06)	.83

Residential mobility	0.05(0.02)**	.00	0.09(0.11)	.39
Racial minority	-0.06(0.03)*	.02	0.07(0.10)	.51
<u>Student-teacher trust</u>				
Antisocial peer behavior	0.03(0.03)	.28	0.13(0.10)	.19
Student enrollment	0.46(0.16)**	.00	-0.87(0.23)**	.00
Social cohesion	0.16(0.04)**	.00	0.13(0.09)	.16
Poverty	0.47(0.39)	.23	-0.57(0.30)	.06
Residential mobility	0.04(0.15)	.79	0.71(0.18)**	.00
Racial minority	-0.22(0.27)	.42	-0.09(0.30)	.77
<u>School violence</u>				
Antisocial peer behavior	-0.17(0.02)**	.00	-0.10(0.02)**	.00
Student-teacher trust	0.01(0.03)	.80	-0.05(0.02)*	.02
Student enrollment	-0.05(0.04)	.24	-0.07(0.03)*	.02
Community violence	-0.06(0.03)*	.05	0.00(0.03)	.93
Social cohesion	-0.03(0.02)	.06	-0.04(0.02)*	.03
Poverty	0.01(0.03)	.80	-0.05(0.04)	.19
Residential mobility	-0.05(0.02)	.06	-0.02(0.02)	.34
Racial minority	0.02(0.03)	.62	0.03(0.03)	.24
<u>Fit Indices</u>				
χ^2	17121.05		41374.33	
Robust RMSEA	0.08		0.06	
Robust CLI	0.94		0.96	
Robust TLI	0.91		0.94	
SRMR	0.03		0.04	
Scaled χ^2	264.68(107)	.00	469.34(107)	.00

Notes: *P-values were calculated from the original, unstandardized estimates and standard errors. *p<0.05.**p<0.01.

Figure 2.

Path Diagram of the Structural Model for SY 2019



Note: All estimates are located in the center of the nodes.

Discussion

This study sought to examine the intricate relationship between community violence and school violence, specifically conceptualizing school violence as a manifestation of community violence. The findings of this study diverge from existing literature in several key aspects. In contrast to social organization theory, social cohesion did not appear to mediate the impact of the three demographic characteristics on community violence. More antisocial peer behaviors were associated with lower school violence, which contradicts anticipated outcomes based on qualitative studies (Bell, 2021; Bell et al., 2020; Mateu-Gelabert & Lune, 2003). Student-teacher trust did not mediate the effect of antisocial behaviors on school violence, which deviates from the qualitative findings reported by Mateu-Gelabert and Lune (2007). Larger student enrollment suppressed school violence, which is inconsistent with Welsh et al. (2000) and Chen (2008).

One of the most unexpected findings was the observation that community violence had a direct suppressive effect on school violence. That is, higher levels of community violence were linked to lower levels of school violence. This finding stands in contrast to the outcomes reported in quantitative studies, which have indicated either no significant effect or a positive association between these two forms of violence. While initially counterintuitive, this result prompts consideration of the potential role of schools as a protective buffer against community violence. Brunson and Miller (2009) suggested this notion by highlighting that in high-violence neighborhoods, schools adopted enhanced safety measures to safeguard students, who in turn reported experiencing less violence at school than in their surrounding neighborhood. Similarly, Welsh et al. (2000) found that schools with high stability—characterized by high attendance rates and low student turnover—were able to counteract the influence of community poverty on school violence, underscoring the importance of the school's context in its interaction with the local community.

Social disorganization theory provides a framework for understanding how schools might lessen the impact of community violence. The theory suggests that social cohesion can reduce community violence through a collective effort to address neighborhood problems. The theory suggests that social cohesion can reduce community violence through a collective effort to address neighborhood challenges. In a school setting, strong social cohesion would enable members of the school community to engage in social controls effectively—administrators enforcing safety policies, teachers overseeing student behavior, and students themselves stepping in to prevent conflicts or bullying. Those collective actions could reduce violence within the school. Previous studies support the idea that schools promoting social cohesion or implementing forms of social control tend to experience lower levels of violence (Brunson & Miller, 2009;

Welsh et al., 2000). Conversely, schools lacking intervention against antisocial behaviors are more likely to face higher violence rates (Bell, 2021; Mateu-Gelabert & Lune, 2007).

The observed negative correlation between community violence and school violence can also be explained through the dynamics of student enrollment and its impact on school violence. Although a larger student population may inherently elevate the risk of school violence, the amplifying impact of school-based interventions could be more pronounced in larger institutions. Furthermore, large schools could be less likely to be located in high-violence neighborhoods. The negative bivariate correlation between student enrollment and poverty (Table 2) suggests that larger schools are often located in more affluent neighborhoods. Such neighborhoods typically exhibit lower levels of community violence and possess greater resources for school violence prevention. In this scenario, the school's location itself emerges as a protective factor against school violence by virtue of being situated farther from high-violence neighborhoods.

Another interesting finding pertains to the influence of social cohesion on school violence. Students residing in highly cohesive communities were less likely to engage in violent behavior at school. This implies that students' relationships with other community members have a significant impact on their conduct within the school setting. However, the mechanisms through which those relationships shape school violence are complex. Social cohesion demonstrated a positive association with antisocial peer behaviors, indicating that students in highly cohesive neighborhoods tended to report a higher prevalence of antisocial behaviors among their peers. This aligns with the findings of Mateu-Gelabert and Lune (2003), who observed that students formed friendships based on their affiliation with a "block gang." While a greater sense of community within the same block group was evident, the elevated social

cohesion also coincided with an increase in antisocial behaviors resulting from gang membership.

However, contrary to initial expectations, an increase in antisocial behaviors did not contribute to heightened school violence; rather, it had the opposite effect. This unexpected outcome could be attributed to the strengthening of social controls within schools, similar to how community violence influences school violence. High levels of antisocial behaviors might have prompted more efforts within schools to reinforce safety measures, including increased policing, fostering prosocial behaviors, and direct interventions in student conflicts. Consequently, these proactive measures could have served to suppress instances of school violence despite the observed increase in antisocial behaviors.

Despite its influence on antisocial behaviors and student-teacher trust, social cohesion did not have a significant impact on community violence. This disconnect suggests that, in highly cohesive communities, violence may not necessarily originate from within the community itself. Community violence was positively associated with residential mobility, suggesting that neighborhoods with high turnover rates—marked by the frequent arrival of new residents—may be more prone to violence. This risk stems, in part, from conflicts encountered during the settling-in process and the vulnerability of new residents to potential robbery.

The connection between social cohesion and community violence becomes more nuanced when considering that social cohesion is also positively correlated with residential mobility. In highly mobile neighborhoods, the increased risk of community violence is influenced by the larger proportion of new residents. Yet residents who have resided in these highly mobile neighborhoods for an extended period may cultivate tighter social networks due to the smaller size of the long-term resident population and a shared experience of coping with high levels of

violence. The survey used to measure social cohesion was administered in the spring semester of each school year, likely capturing the perspectives of residents who have been in the neighborhood for several months to years. These long-term residents are more likely to have developed a robust sense of community amidst the challenges posed by high violence, though their limited size may constrain their overall impact on reducing violence. This phenomenon holds particular relevance for the present study, given the rapid demographic changes resulting from gentrification in Nashville. The interplay between social cohesion, community violence, and residential mobility unveils the complex dynamics in the evolving urban landscape, shedding light on how community violence may shape school violence within the context of demographic shifts.

Limitations

While the model demonstrated a good fit, it may still be deemed too simplistic to capture the intricate dynamics underlying the influence of community violence on school violence. As discussed, the potential mediating roles of school-level social cohesion remain speculative within the study model, lacking empirical verification. Some findings that initially appear counterintuitive—such as the positive association between residential mobility and social cohesion—underscore the need for additional variables or pathways to comprehensively understand the observed outcomes. Another limitation pertains to the limited generalizability of the study findings. The results may not be applicable to elementary schools, as the study sample only included middle and high schools. Additionally, the study model encountered challenges in achieving a satisfactory fit when applied separately by school level, necessitating modifications for improved model fit. This raises concerns regarding the potential variability in the relationship between community violence and school violence across different school levels. To mitigate this,

future research may consider exploring alternative models when investigating specific school levels to ensure a more accurate understanding of these complex dynamics.

Implications for Future Research

This study offers several implications for future research and policy initiatives. First, it reinforces the notion that community violence significantly impacts student behavior within the school setting. While previous research has shown mixed results regarding the impact of community violence on school violence, this study introduces a new dimension by identifying an inverse relationship between these two forms of violence. This finding prompts the need for further investigation into how community violence might act as either a catalyst or a deterrent for school violence, and the mechanisms behind this influence.

Second, the robust predictive power of neighborhood social cohesion in forecasting school violence underscores its importance in understanding student behavior. Neighborhood social cohesion not only directly reduced school violence but also had an indirect effect through its influence on antisocial behaviors. According to social disorganization theory, this suppression of school violence might be due to committed individuals within cohesive neighborhoods who strive to reduce violence both locally and within schools. The indirect effect, suggesting that social cohesion could inadvertently encourage antisocial behaviors among youths, introduces a complexity that warrants further exploration, particularly in relation to gang involvement. Future research should aim to clarify the connections between neighborhood cohesion and youth antisocial behaviors. Nevertheless, the overall suppressive effect of neighborhood cohesion on school violence suggests that engaging with community organizations could be a valuable component of comprehensive strategies to prevent school violence, indicating a potential area for policy development and school leadership focus.

Lastly, the inverse relationship between community and school violence suggests that schools may serve as protective buffers for students in the face of community violence. This raises intriguing questions about how schools successfully mediate the impact of violence in their surrounding neighborhoods, providing a secure haven for many students. Future studies can further delve into the mechanisms through which schools safeguard students from community violence. Qualitative studies could yield valuable insights, utilizing interviews and observations of schools and their surrounding communities. Additionally, for quantitative studies, incorporating more detailed school-level data—including aspects of school cohesion, safety initiatives, and peer dynamics—might enhance our understanding of how contextual factors within schools can mediate the effects of community violence on school violence.

Appendix A

Results From the Measurement Models by School Level for SY 2019

	All	Middle	High
	Estimate(Std.Err.)	Estimate(Std.Err.)	Estimate(Std.Err.)
	<u>Factor Loadings</u>		
<u>Social cohesion</u>			
SC1	0.66(0.01)**	0.65(0.02)**	0.68(0.02)**
SC2	0.75(0.01)**	0.74(0.02)**	0.76(0.02)**
SC3	0.75(0.01)**	0.74(0.02)**	0.78(0.02)**
SC4	0.61(0.01)**	0.58(0.02)**	0.64(0.01)**
<u>Antisocial peer behavior</u>			
APB1	0.62(0.01)**	0.59(0.01)**	0.64(0.01)**
APB2	0.79(0.01)**	0.77(0.01)**	0.81(0.02)**
APB3	0.80(0.02)**	0.78(0.02)**	0.81(0.03)**
APB4	0.65(0.03)**	0.56(0.03)**	0.69(0.04)**
<u>Student-teacher trust</u>			
STT1	0.95(0.09)**	0.95(0.13)**	0.92(0.15)**
STT2	0.96(0.11)**	0.95(0.15)**	0.96(0.21)**
STT3	0.96(0.10)**	1.00(0.14)**	0.91(0.17)**
STT4	0.94(0.10)**	0.95(0.16)**	0.93(0.20)**
	<u>Fit Indices</u>		
robust RMSEA	0.01	0.00	0.05
robust CLI	1.00	1.00	0.98
robust TLI	1.00	1.01	0.98
SRMR	0.02	0.01	0.03

*p<0.05.**p<0.01.

Appendix B

Standardized SEM Results by School Level for SY 2020

	Middle school		High school	
	Estimate(Std.Err.)	p	Estimate(Std.Err.)	p
	<u>Regression Slopes</u>			
<u>Social cohesion</u>				
Poverty	0.08(0.12)	.50	-0.04(0.06)	.58
Residential mobility	0.02(0.03)	.64	0.19(0.05)**	.00
Racial minority	-0.09(0.06)	.13	-0.06(0.05)	.22
<u>Community violence</u>				
Poverty	0.39(0.11)**	.00	0.40(0.09)**	.00
Residential mobility	0.17(0.13)	.19	0.41(0.13)**	.00
Racial minority	0.36(0.13)**	.01	0.36(0.10)**	.00
Social cohesion	-0.00(0.05)	.97	0.02(0.07)	.80
Student enrollment	0.06(0.11)	.60	-0.15(0.07)*	.03
<u>Antisocial peer behavior</u>				
Community violence	-0.03(0.03)	.31	-0.09(0.11)	.39
Social cohesion	0.21(0.02)**	.00	0.14(0.02)**	.00
Student enrollment	0.16(0.02)**	.00	0.07(0.03)*	.04
Poverty	0.15(0.03)**	.00	0.05(0.06)	.43
Residential mobility	0.05(0.02)*	.05	0.12(0.05)**	.01
Racial minority	-0.04(0.03)	.17	0.02(0.05)	.70
<u>Student-teacher trust</u>				
Antisocial peer behavior	-0.01(0.03)	.60	0.01(0.09)	.92
Student enrollment	0.18(0.20)	.36	-0.58(0.19)**	.00
Social cohesion	0.17(0.04)**	.00	0.11(0.15)	.48
Poverty	0.66(0.39)	.09	-0.59(0.26)*	.02
Residential mobility	-0.13(0.18)	.49	0.58(0.18)**	.00
Racial minority	-0.42(0.25)	.10	0.06(0.19)	.77
<u>School violence</u>				
Antisocial peer behavior	-0.12(0.02)**	.00	-0.06(0.02)**	.00
Student-teacher trust	-0.03(0.01)	.07	-0.03(0.01)**	.01
Student enrollment	0.01(0.02)	.74	-0.02(0.02)	.27
Community violence	-0.02(0.03)	.60	-0.00(0.03)	.97
Social cohesion	-0.05(0.02)**	.01	-0.04(0.02)**	.01

Poverty	0.02(0.03)	.53	-0.02(0.03)	.40
Residential mobility	-0.01(0.02)	.55	-0.03(0.02)*	.04
Racial minority	-0.04(0.03)	.16	0.01(0.03)	.77

Fit Indices

Robust RMSEA	0.09	0.04
Robust CLI	0.90	0.99
Robust TLI	0.87	0.98
SRMR	0.04	0.03

Notes:⁺ P-values were calculated from the original, unstandardized estimates and standard errors. *p<0.05.**p<0.01.

CHAPTER V

Conclusion

The examination of community violence reveals a clear pattern in terms of spatial distribution and demographic factors, supported by the findings of all three studies and existing literature. Chapter II highlighted a concentrated prevalence of violent crime in the urban core, characterized by high foot traffic and numerous commercial establishments, covering various types of violent offenses. This chapter also noted the spatial connection of community violence with indicators of neighborhood disadvantage, specifically poverty and racial minority composition. Regions with high poverty and more racial minorities consistently showed higher rates of violence. Notably, poverty stood out as the main predictor of community violence across all three studies, emphasizing the significant influence of economic status on violent behaviors. The importance of housing in preventing violence was evident in the inverse relationship observed between owner occupancy rates and community violence. Additionally, the proportion of racial minorities emerged as a crucial factor, underscoring the disproportionate impact of neighborhood disadvantage on communities with higher concentrations of racial and ethnic minorities.

The implications drawn from Chapters III and IV suggest that schools may serve as a buffer against community violence. Chapter III revealed that school exposure either showed no association with community violence or exhibited a negative correlation. When measured by the proximity and number of schools near a neighborhood, school exposure was positively correlated with community violence, albeit with smaller effect sizes compared to the direct presence of schools and without statistical significance. The inclusion of student enrollment data revealed a

more pronounced suppressive effect, showing that schools with larger student bodies were associated with lower levels of community violence. These findings suggest that a large population presence acts as an informal guardian, deterring potential offenders from engaging in violent acts. In Chapter IV, neighborhoods with higher community violence experienced lower levels of school violence. While the mechanism through which schools mediate the flow of violence from the community remains uncertain, the school environment appeared to afford protection to students, at least within the confines of their educational institutions. Larger student enrollment was also linked to lower school violence, suggesting that the size of the school may be a factor in mitigating students' violent behaviors, as discussed in Chapter III.

Nevertheless, the relationship between community violence and schools varies across different school levels. For instance, in Chapter III, higher exposure to middle and elementary schools correlated with lower community violence, whereas exposure to high schools did not exhibit a statistically significant relationship. This finding explains the diminished community violence associated with school exposure among age groups, where younger students are less prone to committing violent crimes and generally receive more adult supervision. In Chapter IV, higher community violence correlated with lower school violence in middle schools but lacked a statistically significant effect in high schools. Violent behaviors among middle school students were predominantly influenced by community-related factors, such as community violence and antisocial peer behaviors. However, for high school students, school characteristics, including student-teacher trust and enrollment, also played a role in preventing school violence. Additionally, in Chapter IV, the analytical model had to be adjusted as the original model did not exhibit a good fit when applied separately to each school level. These collective findings

underscore the nuanced relationship between community violence and schools, contingent on the influence of the school environment shaped by students' ages.

One motivation for this dissertation was to examine two prevailing, seemingly conflicting viewpoints regarding the role of schools in community violence. One perspective posits that schools generate violence, drawing upon routine activities theory. Several studies have reported results that support this view (De Castro Harth, 2022; Gouvis-Roman, 2002; Murray & Swatt, 2013; Roncek & Faggiani, 1985) and citing schools as a potential risk factor for community violence. However, the findings in Chapter III deviate from this perspective on schools. School exposure, when accounting for the number of schools and student enrollment, was inversely associated with community violence over two school years. This deviation likely stems from how school exposure was measured, as previous studies did not control for school-related factors, including the number of schools and school size. Chapter III substantiated this notion, demonstrating that study results varied based on the type of school exposure measure used. Specifically, when school exposure was measured by the presence of schools in a block group, the study findings aligned with those of previous research.

The different outcomes across the three measures of school exposure might be attributed to the guardianship component within routine activities theory. Routine activities theory argues that violence is more likely to occur when potential offenders and victims are in the same location in the absence of guardianship. Previous research predominantly focused on formal guardianship, such as the roles played by police, teachers, and school administrators, whose presence is often confined to specific school areas. In contrast, this study explored the influence of informal guardianship, indicated by the presence of people in a given location, and discovered that its impact was substantial enough to alter the relationship between school exposure and

community violence. This aspect of informal guardianship has been largely overlooked in previous research, which tended to view schools merely as focal points where potential offenders and victims converge.

The other perspective on the role of schools in community violence posits that the school climate reflects that of the surrounding neighborhood. Therefore, higher levels of community violence are expected to contribute to more violent behaviors within the school environment. Chapter IV presented a contrasting finding: higher levels of community violence were associated with lower levels of school violence. This result contradicts previous quantitative studies, which have typically reported either no significant relationship or a positive association between these two forms of violence (Armstrong et al., 2015; Chen, 2008; Welsh et al., 2000). However, the work of Brunson and Miller (2009) provided a different perspective, suggesting that students perceive their school as a safety net protecting them from violent incidents outside.

Social disorganization theory provides further clarification for this phenomenon, emphasizing the role of social cohesion. In communities where violence is prevalent, a cohesive community can collaboratively devise and implement strategies to combat this issue. Applied to the school context, this means that when neighborhood violence poses a threat, highly cohesive schools are likely to enact stringent safety protocols to safeguard their environment. This protective stance of schools is supported by the findings of Brunson and Miller (2009) and Welsh et al. (2000), where the stability of the school environment was linked to reduced violence. These insight may explain the findings from Chapter IV and challenge the notion of school violence as a direct manifestation of community violence.

Furthermore, schools play a pivotal role in shaping their internal climate and can effectively mitigate the adverse effects of neighborhood environments on students within their

premises. Empirical evidence supports schools' agency in ensuring safety, as demonstrated in numerous studies where violence decreased with the presence of school resource officers (James & McCallion, 2013; Johnson, 1999; May et al., 2004), violence prevention programs (Gaffney et al., 2019), school counseling (Lund et al., 2012; Winslade & Williams, 2011), and positive relationships between students and teachers (Chen & Astor, 2011; McGrath & Bergen, 2015; Rudasill et al., 2010).

Nonetheless, schools are not immune to the influence of community factors. For instance, Chapter IV demonstrated that higher social cohesion within a community was associated with lower incidents of school violence, as was a higher prevalence of antisocial behaviors among school-aged youth. Moreover, school violence decreased in highly mobile neighborhoods and increased in neighborhoods with predominantly racial minorities. These findings underscore the bidirectional and intricate nature of the relationship between community violence and schools, which involves various community, school, and student characteristics. In essence, schools both shape and are shaped by their local neighborhoods through diverse pathways encompassing demographic, spatial, cultural, and interpersonal factors.

The findings also highlight the importance of context, particularly in discerning relevant community characteristics. Students in highly mobile neighborhoods paradoxically reported higher social cohesion, contradicting the expectations of social organizational theory. However, it is crucial to consider the context of the study location, which has undergone rapid gentrification. This transformation may have fostered increased cohesiveness among long-term residents who resisted external pressures to relocate. Furthermore, students reporting high cohesion in their neighborhoods also indicated higher levels of antisocial peer behaviors. This implies that social cohesion among youths might inadvertently foster delinquent behaviors, as exemplified in the

work of Mateu-Gelabert and Lune (2003) on block gangs, and does not automatically lead to reduced violence. Social cohesion amplifies the shared norms and values of a community; hence, if the shared norms are not aligned with prosocial behaviors, social cohesion might not contribute to decreasing violence.

Overall, the interconnection between schools and their local neighborhoods in the context of violence is evident. It becomes imperative to avoid considering the two in isolation when addressing violent behaviors. School violence transcends the confines of the educational institution and can be more effectively prevented through collaborative efforts between schools and community-based organizations. Likewise, schools can serve as a protective factor against community violence, suggesting that urban areas grappling with high violence rates could derive substantial benefits from endeavors aimed at integrating and supporting schools within the local community. This holistic approach acknowledges the symbiotic relationship between schools and their neighborhoods, emphasizing the need for comprehensive strategies that bridge the gap between these entities to foster safer and more secure environments.

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