

AN EXAMINATION OF THE DISPARATE IMPACT OF NEIGHBORHOOD
CHARACTERISTICS ON ROUTINE AND GANG-INVOLVED
GUN VIOLENCE

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ABSTRACT

An extensive body of literature has described the influence of neighborhood characteristics, including socio-economic deprivation, residential turnover, and racial/ethnic composition on gun crime. There have been limited efforts, however, to examine the extent to which these effects might vary based on the nature of gun crime—particularly in communities outside of major cities like Chicago or St. Louis. This study attempts to address this issue through application of negative binomial regression and equality of coefficients tests to data obtained from the crime logs and American Community Survey data of a medium-sized city in the Southeastern U.S. Specifically, this study examines (in)equality in the structural covariates of gun crimes when these offenses are disaggregated by gang-involved gun crime versus non-gang-involved gun crime. Results indicate that the relative influence of neighborhood structural characteristics varies by gun crime type, illustrating the need for disaggregated measures for developing effective policy and assessment.

DEDICATION

The following thesis is dedicated to those who have supported me throughout the entirety of the Master of Criminal Justice program and the writing process of my thesis. Thank you for being my support system throughout this whole experience. I want to give special thanks to my significant other, Gavin, and my parents, Leland and Etter Stripling. I also want to dedicate this to my friends both in the program, Emma, Jadon, Elle, and Chance, as well as outside of the program, Ciara, Abby, Destiny, Holland, and Seth. Without all of your help and support I would not have made it this far. I am forever grateful.

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CHAPTER I

INTRODUCTION

Gun crime has long been an issue of concern within the United States. In particular, the United States is a statistical anomaly regarding gun crime compared to other developed nations (Carson et al., 2022; Grinshteyn & Hemenway, 2016; Hurka & Knill, 2020; Lankford, 2016; Miron, 2001; Tessler et al., 2017). Like other forms of offending, there was a significant drop in firearm-related offenses beginning in the mid-1990s that persisted for approximately two decades. However, there has been a recent reversal in this trend, including a 35% spike in gun homicide between 2019 and 2020 alone, with the most significant increase (39%) in firearm homicides among Black individuals (CDC, 2022). In 2020, gun violence reached a twenty-five-year high (Gramlich, 2022, May 16) and raw data from 2021 suggests that this trend has continued (CDC, 2022). Such a sustained and dramatic increase is evidence of the need for an improved understanding of the nature of gun crime in the United States.

Context is vital to understanding violence; many different variables can significantly impact gun crime (Dierenfeldt et al., 2017; Huebner et al., 2016; Krivo & Peterson, 2000; Peterson & Krivo, 1993). In this vein, Huebner et al. (2016) argue that much is to be learned about gun crime by studying neighborhoods. Gun homicide disproportionately impacts underserved communities of color within American cities (Goodwin & Grayson, 2020).

Research has consistently described the impact of structural characteristics like disadvantage, residential instability, and ethnic heterogeneity on gun crime.

The current study will extend the literature on the impact of structural characteristics on both non-gang-involved and gang-involved gun crime.

Prior literature has often linked gangs with disadvantaged neighborhoods (Bushman et al., 2016; Huebner et al., 2016) and violence – particularly gun crime (Bjerregaard & Lizotte, 1995; Decker et al., 2013; Huebner et al., 2016; Lizotte et al., 2000; Wilkinson & Fagan, 1996). Decker (1996) defines gang violence as acts committed by gang members, organized by gang members, and motivated by concerns for the gang. Moreover, these offenses frequently involve the use of firearms (Decker, 1996). Gangs emerge within specific contexts (Decker, 1996; Pyrooz, 2014), specifically disadvantaged neighborhoods (Bushman et al., 2016; Huebner et al., 2016). As noted by Pyrooz (2014), gang members are disproportionately male and Black or Hispanic, have a higher likelihood of being from a single-parent household, come from lower socioeconomic status families, and live in neighborhoods within central cities and metropolitan areas. Bonds between gang members are built upon common norms, values, and shared activities (Decker et al., 2013) and the common elements of group behaviors, collective processes, and group structures (Decker, 1996). Collective gang identities are built around shared experiences, criminal offending, and victimization (Pyrooz et al., 2014). One example of this collective identity is the use of an initiation process that includes participation in violent activities.

These acts determine whether a prospective member is tough enough to endure the level of violence on the streets and creates solidarity through every individual taking part in initiation (Decker, 1996). Pyrooz et al. (2014, p. 335) suggest that gangs are "greater than the sum of their parts," meaning that gang membership widens the accessibility of victims and offenders through

their collective identities and norms, gaining status and maintaining other members, group liabilities, and retaliatory conflicts. The often-synonymous mention of gangs and gun violence and the emergence of gangs from disadvantaged contexts provides the foundation for delineating gun crime into gang-involved and non-gang-involved gun crime going forward.

The recent dramatic increase in gun crime suggests the need for additional research. After all, researchers cannot effectively treat a problem until it has been accurately diagnosed. The treatment of 'gun crime' as a general measure may, however, be a significant misstep that inhibits the development of effective policy and practice. A more appropriate approach will require disaggregation of gun crimes by offense type (e.g. gang-involved versus non-gang-involved). The purpose of the current study is to explore the potential differential impact of neighborhood characteristics on gang-involved and non-gang-involved gun crimes.

CHAPTER II

REVIEW OF THE LITERATURE

Discussions of gun crime within criminal justice research are not new (Wamser-Nanney, 2021). Gun crime is an umbrella term that can include a multitude of offenses involving a firearm, including homicides, mass shootings, and minor acts of violence (Wamser-Nanney, 2021). As noted above, the United States has higher gun violence rates than other developed nations, which Grinshteyn and Hemenway (2016) partially attribute to both the number of guns in circulation and less strict gun laws in the U.S. There are, however, pronounced race-based disparities in relation to gun violence victimization. The number one cause of death among Black males in the U.S. between the ages of 15 and 34 is homicide, and the vast majority of these deaths are caused by a firearm (CDC, 2022). In connection to this, Pyrooz et al. (2020) found that young Black males identified by law enforcement as gang members experience an exponential increase in mortality risk. Gard et al. (2022) found that 19% of youth in the U.S. are indirectly exposed to at least one deadly gun violence incident within 500 meters of their homes, and these incidents tend to be clustered within socially disorganized neighborhoods. The need for additional research on the differential impact of neighborhood characteristics on distinct forms of gun crime should therefore be apparent.

Structural Perspectives on Crime

Neighborhood-level research owes its beginnings to the Chicago school theorists of the early to mid-20th century. In particular, Park (1936) and Burgess (1928) advanced an ecological perspective that suggested that crime was the product of places rather than people. In his concentric zone model, Burgess (1928) recognized that the city of Chicago could be delineated in terms of both land use and population and that these areas took the form of concentric zones moving outward from the heart of the city. The first, innermost zone was the central business district, which was the hub of retail, financial, recreational, civic, and political activities within the city. According to Burgess (1928), the central business district had few inhabitants besides those homeless populations and individuals staying in hotels. Moving out from the central business district came Zone II, titled the zone in transition. Burgess (1928) deemed Zone II the “first port of entry” for incoming racial and immigrant groups. Zone II was comprised of a mobile and heterogenous population which enterprising individuals sought to eventually escape. Zone II was the natural point of arrival because it was near the central business district and associated job opportunities. The immigration population movements from the center towards the periphery of the city resulted in successive waves of invasion and succession (Burgess, 1928). Movements towards the city’s periphery were responses to the appeal of more attractive residences further removed from the city center (Burgess, 1928). Zone III consisted of the homes of the working class, followed by Zones IV and V, which were the residential and commuter zones in which wealthier individuals resided. These individuals could access transportation options to commute to Zone I for work, shopping, and entertainment.

Expanding on these ideas, Shaw and McKay (1942) theorized that crime, measured through juvenile delinquency, would vary across urban areas depending on economic status,

residential instability, and ethnic heterogeneity. Findings from Shaw and McKay (1942) work illustrated that the levels of residential instability and ethnic heterogeneity, heightened in economically disadvantaged neighborhoods surrounding industrial centers, created an environment where residents could not maintain shared pro-social norms and values, which led to increased violent offending and the cultural transmission of deviant norms and values among youth. Thus, the cycle of transience created through the influx and movements of immigrant populations from poor to middle class areas ensured a remarkable level of stability in crime levels, both temporally and spatially (Shaw & McKay, 1942).

The social disorganization perspective experienced significant revisions between the 1970s and 1990s, with increased emphasis placed on the process through which lack of community attachment facilitated higher levels of residential mobility, which in turn disrupted the networks of informal social control between residents that would otherwise prevent the emergence and entrenchment of crime. Kornhauser (1978) dismissed notions by Shaw and McKay (1942) of concepts associated with strain and subculture, effectively solidifying social disorganization as a theory of social control. From this perspective, a lack of community attachment would manifest in residential instability (Kornhauser, 1978), which would disrupt the growth of informal social controls to prevent the emergence and entrenchment of crime. Further clarifying the relationships described by Shaw and McKay (1942) and Kornhauser (1978), Sampson and Groves (1989) found that levels of economic disadvantage, ethnic heterogeneity, and residential mobility each influenced the strength of local social ties, presence of unsupervised peer groups, and organizational participation. In other words, structural characteristics maintained direct and indirect relationships with levels of collective efficacy—the neighborhood's capacity for social control and social cohesion (Sampson & Groves, 1989;

Sampson et al., 1997). Accordingly, Sampson and Groves (1989) found that communities characterized by sparse friendship networks, unsupervised teen peer groups, and low organizational participation had disproportionately high rates of crime and delinquency. Moreover, Sampson et al. (1997) found that collective efficacy mediated the relationships between residential instability, disadvantage, and crime. These findings illustrate the relative impact of structural conditions on aggregate criminal outcomes.

Structural Conditions and Crime

Previous literature has repeatedly described the positive association between structural characteristics and crime (Chamberlain & Hipp, 2015; Fridel, 2021; Krivo & Peterson, 2000; Kubrin & Weitzer, 2003; MacDonald & Gover, 2005; Peterson & Krivo, 1993; Sampson et al., 1997). In this vein, the most salient covariate has been concentrated structural disadvantage (Chamberlain & Hipp, 2015; Johnson & Kane, 2018; Kubrin & Weitzer, 2003; MacDonald & Gover, 2005; Morenoff et al., 2001). In terms of concentrated disadvantage, Chamberlain and Hipp (2015) study of neighborhoods in 79 U.S. cities found that neighborhoods with a one standard deviation increase in concentrated disadvantage experienced a 21% increase in property crime and 37.6% increase in violent crime. Looking specifically at homicides within the city of St. Louis, Kubrin and Weitzer (2003) found that each standard deviation increase in neighborhood level disadvantage corresponded with a 78% increase in non-retaliatory homicides and a 115% increase in retaliatory homicides. These findings echo those reported by Johnson and Kane (2018), MacDonald and Gover (2005), and Morenoff et al. (2001) which described a positive correlation between concentrated disadvantage and crime.

Within the discussion of the effects of residential instability on crime, there are conflicting findings. There are prior works that indicate that the effects of residential instability are not equivalent across offense categories (Armstrong et al., 2010; Kaylen & Pridemore, 2011; Peterson & Krivo, 1993; Warner & Pierce, 1993; Wo, 2022). Armstrong et al. (2010), for example, found there was no statistically significant relationship between residential stability and violence in their study of crime in Mesa, Arizona. Similarly, Kaylen and Pridemore (2011) aimed to extend and replicate previous research on youth violence to rural counties in Missouri but found a null relationship between residential stability and rural youth violence. Finally, Warner and Pierce (1993) found that the influence of residential instability hinged on type of offense (e.g., robbery, assault, and burglary). Specifically, neighborhoods with high rates of residential instability experienced higher robbery rates, but lower assault rates, while there was a null effect between residential stability and burglary rates (Warner & Pierce, 1993). Some previous studies describe conflicting results from those mentioned above in terms of the relationship between residential instability and crime, more specifically violent crime (Brunton-Smith et al., 2014; Krivo & Peterson, 2000; Shaw & McKay, 1942). Krivo and Peterson (2000) used percent homeownership to test for residential instability, meaning that areas with lower percent homeownership had more residential instability. They found that the effect of percent homeowner is negative and more significant at low levels of concentrated disadvantage, which levels off at the intermediate range, and becomes positive when concentrated disadvantage is high. One specific finding was that offending further decreased as African American homeowners increased (Krivo & Peterson, 2000).

Previous works have also described associations between ethnic/racial heterogeneity and crime (Dierenfeldt et al., 2017; Dierenfeldt et al., 2020; Gostjev, 2017; Krivo & Peterson, 2000;

MacDonald & Gover, 2005; Peterson & Krivo, 1993; Shaw & McKay, 1942; Wo, 2022). When looking at overall crime rates in Baltimore, Wo (2022) found that the ethnic composition of the neighborhood is important to linking race/ethnicity to crime within a place, but it is not the presence of any specific ethnic group that is problematic, which ties into the statement from Shaw and McKay (1942) that high or low rates of delinquents were not permanent characteristics of any specific ethnic or racial group. Population groups experienced high rates of delinquency with the first settlements and rates decreased among these groups as they either moved to less socially disorganized neighborhoods or created stability within their existing communities (Shaw & McKay, 1942).

Within Gostjev (2017) study surrounding the moderating effects of ethnic heterogeneity on the relationship between immigration and crime at the neighborhood level, he found that the crime-reducing effects on immigrant concentrations are stronger in more heterogeneous neighborhoods than in homogenous ones. Gostjev (2017) attributes this finding to immigrant concentrations within neighborhoods increasing the economic stability of the community, which in turn can protect these areas from violent crime. Specifically, one standard deviation increase in immigrant concentration resulted in a 13.5% lower predicted violence rate in diverse neighborhoods compared to a 6.3% reduction in violence in more homogenous neighborhoods. Yet, overall Gostjev (2017) found that the direct effect of ethnic heterogeneity on violent crime was mostly positive. When looking at homicides, MacDonald and Gover (2005) found that cities that exhibited a higher concentration of Black residents had increases in youth-on-youth homicides within large U.S. cities. The disparate impact of structural influence extends to other offenses. When looking at drug crimes across a sample of U.S. cities, Thomas and Dierenfeldt (2018) found that ethnic heterogeneity, measured as the percent of Hispanic and foreign-born

residents, was not associated with a composite measure of drug arrests, but was positively associated with arrests for cocaine and negatively associated with marijuana arrests.

Disaggregation of Broad Offense Categories

Although prior works suggest the need to explore the relative influence of structural characteristics by offense type, there may also be the need to move away from broad offense categories like ‘homicide’ and adopt more refined measures. In their study of large cities in the United States with a central city population of at least 100,000 and an African American population of at least 5,000, Peterson and Krivo (1993), for example, found that the effects of structural characteristics varied by type of victim-offender relationship. Specifically, higher levels of absolute and relative disadvantage were associated with higher homicide levels except for Black income inequality and family killings (Peterson & Krivo, 1993). Further, Peterson and Krivo (1993) suggested that while different types of homicide were significantly influenced by one or more of the structural factors, there were no clear patterns in the relationships across all three types of victim-offender disaggregated homicides. Similarly, educational attainment was negatively associated with acquaintance homicide, but failed to exhibit statistically significant relationships with family or stranger homicides.

Like racial and ethnic heterogeneity, the impact of concentrated disadvantage appears to vary when broad offense categories are disaggregated. In their study of St. Louis neighborhoods, for example, Kubrin and Weitzer (2003) found that structural disadvantage was more strongly correlated with retaliatory homicide compared to other forms of homicide. Similarly, in their study of drug arrests in a sample of U.S. cities, Thomas and Dierenfeldt (2018) found that overall drug arrests are exacerbated in socioeconomically disadvantaged contexts, yet when drug arrests

are disaggregated, socioeconomic disadvantage is linked only to elevated arrests for crack, marijuana, and methamphetamines but not for cocaine or heroin.

Throughout the previous literature family disruption (MacDonald & Gover, 2005; McCall et al., 2010) has also been positively associated with crime. McCall et al. (2010) found that neighborhoods with a higher prevalence of divorced males have higher homicide rates, which they hypothesized to be due to divorce weakening or breaking the bonds of men with marital/family institutions. Similarly, MacDonald and Gover (2005) found that changes in the divorce rate were significantly associated with changes in homicide rates between periods within their study; for instance, one standard deviation increase within cities in the percentage of divorced persons was associated with a 55% increase in the rate of youth-on-youth homicide.

Lastly, previous literature has also depicted the age structure of the neighborhood when discussing crime, with a particular focus on adolescents (Baron et al., 2001; Melde et al., 2009; Shaw & McKay, 1942; Spano & Bolland, 2013). The crime rate usually reaches its peak during the teenage years. It declines quickly at first and then gradually declines over time (Farrington, 1986), which explains the focus on youths and adolescents. Different types of offenses peak at different ages, which Farrington (1986) attributes to an individual's crime switching at different points in life due to changes in group offending, motive, excitement, and ability. For example, Baron et al. (2001) discuss that a street population is a heterogeneous group of youths ranging in age from pre-teens to mid-twenties. Their findings explain that life on the street for youths provides exposure to violence, victimization, and the opportunity to engage in violence (Baron et al., 2001).

The Influence of Structural Conditions on Gun Crime

A host of studies have described a positive linkage between concentrated disadvantage and gun crime (Burgason et al., 2014; Bushman et al., 2016; Dierenfeldt et al., 2017; Dierenfeldt et al., 2021; Fridel, 2021; Huebner et al., 2016; Kim, 2022; Krivo & Peterson, 2000; Steidley et al., 2017; Thomas et al., 2022). Using a sample of 189 medium to large cities, Dierenfeldt et al. (2017) found that each standard deviation increase in concentrated disadvantage was associated with an 87.4% increase in the number of homicides and aggravated assaults involving firearms. Similarly, in their analysis of neighborhoods within St. Louis, Huebner et al. (2016) found that concentrated disadvantage was positively associated with rates of gun assault, with each standard deviation increase in disadvantage being associated with a 93% increase the rate of gun-involved assaults. Simply stated, as neighborhoods experience more overlapping forms of structural deprivation, they tend to experience more gun crime.

A similar relationship has been described between residential instability and gun crime (Drake et al., 2022; Kim, 2022; Steidley et al., 2017) In a study of New York City neighborhoods, for example, Kim (2022) described a positive and statistically significant relationship between the frequency of shootings and the percentage of residents who had moved within the previous year. Similar findings were reported by Drake et al. (2022) in Houston, Texas, where neighborhoods maintaining relatively higher proportions of rental units and vacant homes had significantly higher levels of gun-involved homicides. In contrast, Burgason et al. (2014) did not find a statistically significant relationship between residential stability and the likelihood offender gun use and victim injury in instances of aggravated assault or robbery.

Previous literature has also discussed links between ethnic heterogeneity and gun crime (Friedson & Sharkey, 2015; Kim, 2022; Steidley et al., 2017; Thomas et al., 2022; Yu et al.,

2020). For example, Kim (2022) found a positive relationship between ethnic heterogeneity and gun crime in their study of New York neighborhoods, whereby a 1% increase in African American and Hispanic populations was associated with respective increase in the shooting rate of 3.2% and 2.1%. In contrast, Drake et al. (2022) found that the proportions of Hispanic/Latino individuals were higher in low-risk areas than in high-risk areas for firearm homicide within Harris County, Texas. Dierenfeldt et al. (2017) found that the percentage of Hispanic residents, which was used as a proxy for ethnic heterogeneity, was positively related with expressive crimes, but negatively associated with instrumental gun crimes—suggesting that the impact of ethnic heterogeneity may be offense specific. Further, despite the size of the Hispanic population having a direct positive relationship with expressive gun crime, it had a statistically significant, negative relationship with instrumental gun crime. Specifically, each standard deviation increase in the size of the Hispanic population was associated with a 14.8% decrease in robberies involving a firearm (Dierenfeldt et al., 2017).

Gang-Involved Firearm Offenses

Prior literature has often linked gangs with increased gun violence (Bjerregaard & Lizotte, 1995; Decker et al., 2013; Huebner et al., 2016; Lizotte et al., 2000; Wilkinson & Fagan, 1996). In fact, Huebner et al. (2016) noted that neighborhoods with high levels of gang membership create a geographically broad landscape of gun violence, in which the risk of gun crime extends to nearby areas with few or no gang members. As gangs emerge so too does the likelihood of conflict involving firearms (Wilkinson & Fagan, 1996). As an example, Huebner et al. (2016) found that a one-unit increase in gang membership was associated with a 7% increase in the expected gun assault rate. Lizotte et al. (2000) found that younger boys who were gang

members had a higher probability of carrying a hidden gun than nonmembers, and gang membership at a younger age was significantly related to gun carrying even after peer gun ownership was taken into account.

Most prior literature, as discussed previously, has largely focused on broad, aggregate measures like ‘crime,’ ‘gun crime,’ homicide,’ and ‘drug crime.’ However, evidence supports the disaggregation of these measures to develop a more refined understanding of the influence of structural characteristics across forms of offending (DeJong et al., 2011; Dierenfeldt et al., 2020; Krivo & Peterson, 2000; Peterson & Krivo, 1993; Semenza et al., 2022; Thomas & Dierenfeldt, 2018). Thomas and Dierenfeldt (2018) and Dierenfeldt et al. (2020) for example, observed that prior research focused on composite measures of arrests that fostered an incomplete understanding of the impact of structural characteristics on drug arrests. The same may hold true for gun crime.

A curious omission within the literature is the effects of neighborhood characteristics on gang-involved versus non-gang-involved gun crime. As mentioned, gangs tend to emerge in the presence of extreme structural deprivation. Thus, it is a possibility that the impact of structural characteristics is more pronounced for gang-involved gun crime than general measures of gun crime. The following study attempts to fill this gap in the literature by examining the effects of structural characteristics through a disaggregated measure of ‘gun crime’ into non-gang-involved and gang-involved gun crimes. The disaggregation of gun crime into non-gang-involved and gang-involved gun crime could allow for specific implications for policy and practice.

CHAPTER III

CURRENT STUDY

The literature as it relates to broad measures of gun crime is largely supportive of structural perspectives, particularly in terms of the effects of concentrated disadvantage. Simply stated, as communities experience more overlapping forms of economic deprivation, they tend to experience more gun crime (Burgason et al., 2014; Dierenfeldt et al., 2017; Dierenfeldt et al., 2021; Huebner et al., 2016; Thomas et al., 2022). Less consistent are the findings concerning the relative influence of residential instability and ethnic heterogeneity (Burgason et al., 2014; Dierenfeldt et al., 2017; Drake et al., 2022), which may suggest offense-specific effects. Despite a rich body of literature on gangs and gang violence, comparatively few studies have explored the impact of community characteristics on aggregate levels of gang-involved firearm offending. Those studies that have been performed also tend to be supportive of the structural explanation of crime (Bushman et al., 2016; Dierenfeldt et al., 2017). An equally curious omission is the comparison of effects of neighborhood characteristics on gang-involved versus non-gang-involved gun crime. Gangs tend to emerge in the presence of extreme structural deprivation (Huebner et al., 2016; Pyrooz, 2012), so it might be expected that the impact of these conditions is even more pronounced for gang-involved gun crime in comparison to ‘gun crime in general.’

The current study addresses these gaps in the literature through examination of the impact of structural characteristics on aggregate counts of total, gang-involved, and non-gang-involved gun crimes across neighborhoods in Chattanooga, Tennessee.

CHAPTER IV

METHODOLOGY

Extant literature has consistently described strong correlations between gun crime and neighborhood context, particularly the effects of concentrated disadvantage. Prior works consistently suggest that concentrated disadvantage is positively linked with the incidence of gun crime (Burgason et al., 2014; Dierenfeldt et al., 2021; Huebner et al., 2016; Krivo et al., 2009; Valasik et al., 2017). However, a curious omission in the literature is the differential association between concentrated disadvantage and gun crimes disaggregated by gang-involved and non-gang-involved offenses. Nevertheless, there is a gap in the literature regarding the disparate impact of structural conditions on gang-involved gun crime compared to non-gang-involved gun crime. Exploring this omission may help inform policies and practices tailored to specific forms of gun crime. This gap in the literature prompted the Primary Question: How do the effects of neighborhood characteristics on gun crime vary when these offenses are disaggregated by gang-involved and non-gang-involved offenses? To answer this question, negative binomial regression is used to explore the disparate impact of neighborhood characteristics on total, gang-involved, and non-gang-involved gun crime.

Data and Sample

The data used in this study are obtained from the National Integrated Ballistic Information Network (NIBIN) lead logs maintained by the Chattanooga Police Department (CPD). Specifically, in the following analyses, all gun crimes listed in the shooting logs maintained by the Crime Gun Intelligence Center of the CPD that occurred between 1/1/2016 and 12/31/2019 are included (n = 876). All research protocols were reviewed and approved by the UTC Institutional Review Board (IRB# 20-171) in connection with a Department of Justice grant award to the Chattanooga Police Department through the Edward Byrne Memorial Justice Assistance Grant Program (2020-DG-BX-0008)¹. Consistent with my theoretical framework and previous studies that have adopted structural explanations of crime, data were gathered on census block groups located within Chattanooga using the 2017 American Community Survey (ACS). There were originally 160 block groups designated in this iteration of the ACS, but 7 maintained populations of 0 and were excluded from the analysis, resulting in a final sample of 153 census block groups. One of the excluded block groups had two non-gang-involved shootings during the observation period, while another had two non-gang-involved shootings and one gang-involved shooting. The remaining five block groups excluded from the analysis had no shootings over the 3-year observation period.

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Research Questions and Hypotheses

Answering the primary question requires developing and answering several additional research questions. This omission mentioned previously between concentrated disadvantage and disaggregated gun crimes within the literature prompts Research Question 1 (RQ1): How do the effects of concentrated disadvantage vary between total gun crimes, gang-involved gun crimes, and non-gang-involved gun crimes? Past research (e.g., (Huebner et al., 2016) has consistently found that concentrated disadvantage is associated with rates of gun crime, but this relationship may be more pronounced for crimes that are gang-involved (Valasik et al., 2017). Based on these studies, the following is hypothesized (H1): concentrated disadvantage will have a direct, positive association with total, gang-involved, and non-gang-involved gun crime. It is also hypothesized that the effects of concentrated disadvantage will be strongest for gang-involved gun crime (H1b).

Like concentrated disadvantage, Shaw and McKay (1942), Sampson et al. (1997), and Zhang et al. (2012) suggest that residential instability plays a role in the disruption of community organization and, in turn, the frequency of crime. Additional works, however, indicate that these effects may not be consistent across offense categories (Dierenfeldt et al., 2020; Peterson & Krivo, 1993; Thomas & Dierenfeldt, 2018). Prior literature thus prompted Research Question 2 (RQ2): How do the effects of residential instability vary between total gun crimes, gang-involved gun crimes, and non-gang-involved gun crimes? Based on the aforementioned relationships between residential instability and gun crime, it is hypothesized (H2): that residential instability will be directly and positively associated with total, gang-involved, and non-gang-involved gun crime. It is also hypothesized that the effects of residential instability will be strongest for gang-involved gun crime (H2b).

Shaw and McKay (1942) noted that low-crime neighborhoods were distinct from high-crime neighborhoods in terms of ethnic heterogeneity. Ethnic heterogeneity was a key factor in the disruption of community organization, which led to delinquency within their study. More recent studies, however, suggest that the effects of ethnic heterogeneity are inconsistent between offenses (Dierenfeldt et al., 2020; Thomas & Dierenfeldt, 2018). Moreover, the work of Peterson and Krivo (1993) suggests racial and ethnic homogeneity may be more predictive of violent crime. The lack of consistency between studies prompted Research Question 3 (RQ3): How do the effects of ethnic heterogeneity vary between total gun crimes, gang-involved gun crimes, and non-gang-involved gun crimes? In line with the works of Shaw and McKay (1942) and Sampson et al. (1997), it is hypothesized (H3): that ethnic heterogeneity will be positively associated with total, gang-involved, and non-gang-involved gun crime. Furthermore, it is hypothesized that the effects of ethnic heterogeneity will be strongest for gang-involved gun crime (H3b).

Dependent Variables

The goal of this study requires the development of three dependent variables: total gun crime, gang-involved gun crime, and non-gang-involved gun crime. For the purposes of this study, total gun crime is conceptualized as crimes committed with a firearm and operationalized as the total count of gun crimes. Further delineating gun crime into gang-involved and non-gang-involved gun crime leads to two new conceptualizations. Gang-involved gun crimes are crimes committed with a firearm in which the victim(s) and/or the offender is gang affiliated. Non-gang-involved gun crimes are those in which neither the victim nor the offender is gang affiliated. Each of these concepts is operationalized through counts geocoded to their respective block groups. Each variable represents a ratio level of measurement because it is mutually exclusive,

exhaustive, can be logically rank ordered, maintains equal intervals between each value, and has a true zero.

Independent Variables

Consistent with the works of Sampson and Groves (1989), Huebner et al. (2016), and Krivo and Peterson (2000), concentrated disadvantage is conceptualized as overlapping indicators of structural deprivation and operationalized through the percent of the population that is black, percent that is unemployed, and percent over the age of 25 that has not earned a high school diploma. These measures are obtained from the 2017 American Community Survey (ACS). Factor analysis using oblique rotation confirms that these measures represent a single latent construct with an Eigenvalue of 1.870 and factor loadings in excess of .765. These measures are therefore retained as a summary index of concentrated disadvantage with a Cronbach's Alpha value of .698. This variable represents an interval level of measurement because is mutually exclusive, exhaustive, can be ranked in order, and maintains equal intervals between each value.

Prior literature has further demonstrated that residential stability plays an important role in developing and maintaining informal social controls within neighborhoods (Kornhauser, 1978; Sampson & Groves, 1989; Sampson et al., 1997). Consistent with these studies, residential instability is conceptualized as high levels of residential turnover typified by a lack of owner-occupied homes. This concept is operationalized as the percentage of vacant homes within the block group. This measure represents a ratio-level measurement that is mutually exclusive, exhaustive, can be ranked in order, maintains equal intervals between each value, and has a true zero.

The literature has also demonstrated the connection between family disruption and crime (McCall et al., 2010; Sampson & Groves, 1989). Consistent with these works, family disruption is conceptualized as events that sever the familial structure. This concept is operationalized as the percentage of divorced households within each block group. This measure represents a ratio-level measurement that is mutually exclusive, exhaustive, can be ranked in order, maintains equal intervals between each value, and has a true zero.

Similar to the works of Shaw and McKay (1942) and Sampson and Groves (1989), ethnic heterogeneity is conceptualized as the integration of individuals from diverse cultural traditions and nationalities within neighborhoods. For this study, ethnic heterogeneity is conceptualized as the percentage of the population of each block group that is Hispanic. This measure represents a ratio-level measurement that is mutually exclusive, exhaustive, can be ranked in order, maintains equal intervals between each value, and has a true zero.

Neighborhood-level controls include age structure and total population. Age structure is conceptualized as the proportion of residents in their peak offending years and is operationalized as the percentage of the population aged 15 to 24. This variable represents a ratio-level measurement that is mutually exclusive, exhaustive, can be ranked in order, maintains equivalent intervals between each value, and has a meaningful zero. Lastly, the total population is conceptualized as the number of neighborhood residents and is operationalized by the number of individuals per block group. The total population represents a ratio-level measurement that is mutually exclusive, exhaustive, can be ranked in order, maintains equivalent intervals between each value, and has a meaningful zero. Variable counts per block group could be misleading due to the differences in population across block groups. Thus, the total population is used as an

exposure variable, which involves using the block group population to modify each count into a rate of occurrence per capita.

Analytic Approach

This study adopts a negative binomial regression technique to explore the disparate impact of neighborhood characteristics on total, gang-involved, and non-gang-involved gun crime. Consistent with the works of Osgood (2000) and Osgood and Chambers (2000), the use of count data necessitates using a Poisson-based estimator to examine the variation between total, gang-involved, and non-gang-involve gun crimes included in the sample. A standard Poisson model assumes equidispersion between the mean and variance of the outcome measure. Preliminary analysis, however, indicates that each of the outcome measures is over-dispersed, suggesting the need for a negative binomial estimator that allows for the introduction of an error term. As a result, this study uses negative binomial regression to test Hypotheses 1, 2 and 3.

CHAPTER V

RESULTS

Descriptive Statistics

Descriptive statistics explain the mean values, standard deviation, and range of values present in the data. Descriptive statistics for the variables in the analysis are displayed in Table 1. The average population across the sample of block groups was approximately 1,300, ranging from 30 to nearly 4,000. For racial composition, the percent of the population that was Black ranged from 0 to 100%, with a mean of roughly 31%. The standard deviation for racial composition is 28.68%, which indicates a high degree of variability. Up to 52% of the adult population had failed to earn a high school diploma or GED, with an average of just over 12%. Again, a high degree of variability is observed here with a standard deviation of 10.34%. An average of 6% of working age adults was unemployed, with a minimum of 0% and a maximum of roughly 43% (SD = 8.00). An average of approximately 12% of the population (SD=11.61) were between the ages of 15 and 24, with a range of 0 to 89.88%, with an average of approximately 7% of the population identifying as Hispanic (SD = 10.67). In terms of the proxy measure for residential instability, an average of 10.03% (SD=8.23) homes in the sample of block groups was vacant, with a range of 0 to 34.31%. Regarding family disruption, 14.38% of the population was divorced, with a range of 0% to 38.61% and a standard deviation of 7.48%.

Regarding our outcome measures, the average number of gun crimes was roughly 6 with a range of 0 to 54. The high degree of overdispersion in this outcome measure is evidenced by

the standard deviation of 9.06. The outcome measures for gang-involved gun crimes and non-gang-involved gun crimes were similarly distributed. There was an average of roughly 3 (SD=5.45) gang-involved gun crimes with a range of 0 to 35, and an average of approximately 3 (SD=4.0) non-gang-involved gun crimes with a range of 0 to 19.

Table 1. Descriptive Statistics (N = 153)

	M	SD	Min	Max
Total Population	1301.36	594.15	30.00	3848.00
Concentrated Disadvantage				
% Black	30.66	28.68	0.00	100.00
% Low Educational Attainment	12.08	10.34	0.00	51.98
% Unemployed	5.75	8.00	0.00	42.64
Percent Population Aged 15-24	12.30	11.61	0.00	89.88
Percent Hispanic	6.98	10.6	0.00	52.99
Percent Vacant Homes	10.03	8.23	0.00	34.31
Percent Divorced	14.38	7.48	0.00	38.61
Total Gun Crime	5.73	9.06	0.00	54.00
Gang-Involved Gun Crime	2.85	5.45	0.00	35.00
Non-Gang-Involved Gun Crime	2.88	4.07	0.00	19.00

Bivariate Analysis

Results from the bivariate correlation analysis are displayed in Table 2. Consistent with Hypothesis 1, the correlation analysis revealed a strong, positive, and statistically significant relationship between the dependent variable of total shootings and concentrated disadvantage ($r=.638, p<.01$). Similarly, concentrated disadvantage also had a strong, positive, and statistically significant relationship between both gang-involved and non-gang involved gun crimes ($r=.607, p<.01$). Simply put, increases in the level of concentrated disadvantage is associated with increases in total, non-gang-involved, and gang-involved gun crime. Consistent with Hypothesis 2, the percent of vacant homes also had a positive, weak, statistically significant relationship with total shootings ($r=.204, p<.05$), gang-involved ($r=.206, p<.05$), and non-gang-involved gun crimes ($r=.177, p<.05$). This finding indicates that as the percent of vacant homes increases, total, gang-involved, and non-gang-involved gun crime also increases. In partial support of Hypothesis 3, the dependent variable non-gang-involved gun crimes had a weak, positive, and statistically significant relationship with the percent of the population that identified as Hispanic ($r=.207, p=.05$), as well as well as percent of divorced households ($r=.193, p<.05$). These results suggest that as the percent of the population that identifies as Hispanic and the percent of divorced households increase so do non-gang-involved gun crimes. Interestingly, the independent variables percent Hispanic and percent of divorced individuals did not have significant relationships with total or gang-involved gun crimes.

Table 2. Bivariate Analysis of Independent and Dependent Variables (N = 153)

	V1	V2	V3	V4	V5	V6	V7	V8
V1: CD Index	1.0	-	-	-	-	-	-	-
V2: Percent 15-24	-.001	1.0	-	-	-	-	-	-
V3: Percent Hispanic	.181*	-.012	1.0	-	-	-	-	-
V4: Percent Vacant Homes	.096	.210**	-.053	1.0	-	-	-	-
V5: Percent Divorced	.307**	-.230**	.164*	.071	1.0	-	-	-
V6: Total Shootings	.638**	.026	.139	.204*	.153	1.0	-	-
V7: Gang Involved	.607**	.023	.076	.206*	.110	.964**	1.0	-
V8: Non-Gang Involved	.607**	.026	.207*	.177*	.193*	.934*	.804*	1.0

Note: * $p < .05$ ** $p < .01$ *** $p < .001$

Negative Binomial Regression

Results from the negative binomial regression are displayed in Table 3. Hypothesis 1 predicted that concentrated disadvantage would have a direct, positive association with total,

gang-involved, and non-gang-involved gun crime. Hypothesis 1b predicted that the effects of concentrated disadvantage would be strongest for gang-involved gun crime. Consistent with Hypothesis 1, the results from the negative binomial regression indicate that concentrated disadvantage shares statistically significant and positive relationships with total, gang-involved, and non-gang-involved gun crime. As anticipated, however, the magnitude is not consistent between the dependent variables. Each standard deviation increase in the concentrated disadvantage index is associated with a 234.1% ($b = 1.528, p \leq .001$) increase in total gun crime, compared to a 294.6% ($b = 1.739, p \leq .001$) increase in gang-involved gun crime and 157.2% ($b = 1.197, p \leq .001$) increase in non-gang-involved gun crime. The application of Clogg tests provides partial support for Hypothesis 1b, as the effects of concentrated disadvantage are stronger for gang-involved gun crime in comparison to non-gang-involved gun crime at a statistically significant level.

Hypothesis 2 stated the expectation that residential instability would be directly and positively associated with total, gang-involved, and non-gang-involved gun crime. Consistent with this expectation, the effects of residential instability, operationalized here as the percent of vacant homes, are associated with a 33.9% ($b = 0.035, p \leq .01$) increase in total gun crime, compared to a 53.7% ($b = 0.052, p \leq .01$) increase in gang-involved gun crime and a 21.5% ($b = 0.024, p \leq .10$) increase in non-gang-involved gun crime. However, Hypothesis 2b, which expressed the expectation that residential instability would be the strongest for gang-involved gun crime, is not supported. The application of inequality of coefficients tests reveals no statistically significant differences between the models. In other words, the effects of residential instability are relatively uniform across all three measures of gun crime.

Hypothesis 3 stated the expectation that ethnic heterogeneity would be positively associated with total, gang-involved, and non-gang-involved gun crimes (H3). Moreover, it was anticipated that the effects of ethnic heterogeneity would be strongest for gang-involved gun crime (H3b). The results of negative binomial regression offer partial support for Hypothesis 3, as each standard deviation increase in the percent of the population that identifies as Hispanic is correlated with a 19.9% ($b = 0.017, p \leq .05$) increase in total gun crime, compared to a 22.6% ($b = 0.019, p \leq .01$) increase in non-gang-involved gun crime. However, the relationship between ethnic heterogeneity and counts of gang-involved gun crime fails to achieve statistical significance. The application of inequality of coefficients tests also fails to provide support for Hypothesis 3b, as no statistically significant differences between models are observed. This finding prompts the rejection of Hypothesis 3b.

Limited consistency is observed among the effects of each of the control variables. Contrary to what might be expected, each standard deviation increase in the percent of the population between the ages of 15 and 24 (proxy for age structure) corresponds with a 27.7% ($b = -0.028, p \leq .05$) decrease in total gun crime, as well as a 39.2% ($b = -0.043, p \leq 0.01$) decrease in gang-involved gun crime. The relationship between age structure and non-gang-involved gun violence fails to achieve statistical significance. Interestingly, application of equality of coefficients tests reveals that the negative influence of age structure is stronger for gang-involved gun crime than non-gang-involved gun crime. Lastly, family disruption, measured as a percentage of divorced households, fails to exhibit a statistically significant relationship with total, gang-involved, and non-gang-involved gun crime. The thesis now turns to discussion of these findings and their implications for policy and practice.

Table 3. Negative Binomial Regression by Type of Gun Crime (N = 153)

	Total	Gang-Involved	Non-Gang-Involved
Concentrated Disadvantage	1.528(.217)***.	1.739(.283)***	1.197(.177)***
Percent Population Aged 15-24	-0.028(.011)*	-0.043(.014)**	-0.013(.010)
Percent Hispanic	0.017(.007)*	0.014(.010)	0.019(.007)**
Percent Vacant Homes	0.035(.013)**	0.052(.017)**	0.024(0.12)†
Percent Divorced	-0.015(.019)	-0.018(.021)	0.001(.016)

† $p \leq .10$ * $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$

CHAPTER VI

DISCUSSION

The current study contributes to the extant literature by assessing the disparate impact of structural characteristics on disaggregated measures of gun crime. The findings highlight the variation in the influence of structural characteristics between the aggregated total gun crimes compared to non-gang-involved and gang-involved gun crimes. This is an important contribution to the extant literature given the reliance of prior studies on aggregated, general measures of gun crime. Simply put, this thesis suggests that such approaches likely obscure unique effects of structural characteristics on specific forms of gun crime.

Several of the findings presented here merit further discussion. First, in line with social disorganization theory (Park, 1936; Sampson & Groves, 1989; Shaw & McKay, 1942), it was expected that neighborhood disadvantage would be positively associated with total, non-gang-involved, and gang-involved gun crimes. Overall, the findings from the current study are consistent with such structural explanations of crime. However, there is clear support for the disaggregation of gun crimes given the statistically significant differences in effects of concentrated disadvantage. Existing literature pertaining to the issue of gun violence has examined the impact of structural characteristics on gun crimes, specifically noting the positive relationship between concentrated disadvantage and gun crime (Burgason et al., 2014; Bushman et al., 2016; Dierenfeldt et al., 2017; Dierenfeldt et al., 2021; Fridel, 2021; Huebner et al., 2016; Kim, 2022; Krivo & Peterson, 2000; Steidley et al., 2017; Thomas et al., 2022). Results from the

negative binomial regression presented in this thesis suggested a positive association between concentrated disadvantage and all disaggregated forms of gun crime, yet the magnitude was greatest for gang-involved gun crime. A one standard deviation increase in the concentrated disadvantage index was associated with a 294.6% increase in gang-involved gun crime. Based on previous literature, it is not surprising that the effects of concentrated disadvantage were more pronounced for gang-involved gun crime, given that these groups tend to emerge in neighborhoods experiencing greater structural deficits.

In contrast, the influence of residential instability was relatively uniform—a finding consistent with both theory and several prior studies on gun crime. Within the study on gun violence in New York City by Kim (2022), for example, she reported positive relationships between levels of residential instability and gun crime. Specifically, shooting rates increasing by 2.1% with each 1 percent increase in the number of individuals who had moved in the previous year. Similarly, the current analysis found positive associations between residential instability and total, non-gang-involved, and gang-involved gun crimes.

The results from the negative binomial regression analysis indicated that ethnic heterogeneity was positively related to total gun crime and non-gang-involved gun crime yet had a null influence on gang-involved gun crime. There were also no statistically significant differences between the models. In regard to social disorganization theory, Shaw and McKay (1942) illustrated that ethnic heterogeneity, which was heightened in economically disadvantaged neighborhoods, created an environment in which residents could not maintain pro-social norms and values, thus leading to increased violent offending. Therefore, the current study hypothesized that ethnic heterogeneity would be positively related to gang-involved gun crime, but that was not the case. Although this finding conflicts with tenets of social disorganization

theory, this study is certainly not the first to report such a relationship. Several recent works have reported conflicting results between the links between ethnic heterogeneity and gun crime (Drake et al., 2022; Friedson & Sharkey, 2015; Kim, 2022; Steidley et al., 2017; Thomas et al., 2022; Yu et al., 2020). Recent studies have found that homogeneity, particularly in terms of percent Black, is more strongly correlated with crime (Beard et al., 2017; Lodge et al., 2021), which is likely due to the specific areas near or within poor, Black neighborhoods being disproportionately exposed to gun crime (Thomas et al., 2022).

Previous literature has consistently described a positive association between family disruption and gun crime (MacDonald & Gover, 2005; McCall et al., 2010), which means that neighborhoods with a higher prevalence of family disruption tend to exhibit higher rates of violence. Comparatively, the current study found no statistically significant relationship between family disruption and total, gang-involved, or non-gang-involved gun crimes. This finding could be due to the operationalization of family disruption: the percentage of divorced households. A more appropriate measure may be the percentage of households headed by a single female with children, given the frequency of unwed mothers in disadvantaged contexts. Osgood and Chambers (2000), for example, advocated measuring family disruption through female-headed households as a proportion of all households with children because they reasoned that the proportion of unwed mothers would be the most relevant to delinquency.

Similar to family disruption, there were also unexpected results regarding the negative effect of age structure. Previous literature would suggest that the crime rate would reach its peak in the teenage years, in which it would decline quickly at first followed by a gradual decline over time (Farrington, 1986). More specifically, Baron et al. (2001) note that a street population is primarily made up of heterogeneous groups of youths from preteens to mid-twenties and that

their life on the street would include exposure to violence, victimization, and criminal opportunity. Yet, the results from the current study did not find a significant relationship with gang-involved gun crime, nor a difference between the models. A possible explanation for this finding is that neighborhoods maintaining larger proportions of their respective populations between the ages of 15 and 24 also maintain more legitimate and supervised activities and services that cater directly to them. These activities could include community programming, afterschool programs, and nonprofits available in Chattanooga. This would certainly be expected to influence the relationship between age structure and the frequency of crime, especially gang-involved gun crime.

Despite this study's contribution to the literature, several limitations must be acknowledged. The first of these is in relation to the operationalization of age structure, which may well explain the negative and null impact of age in the regression models. The works of Dierenfeldt et al. (2017), McCall et al. (2010), Thomas et al. (2022); Thomas and Shihadeh (2013) have illustrated that a measure of institutionally isolated youths, those simultaneously not in school, not employed, not in the labor force, and not in the military, may be more appropriate in comparison to the traditional measures of age structure. This may be even more true concerning the current study, particularly in relation to gang-involved gun crime. Regrettably, these measures are not available at the unit of analysis selected for examination in this thesis.

This study is also cross-sectional, which does not allow for conclusions to be drawn regarding causality. This issue is exacerbated by the reliance on gun crimes known to police. There are likely any number of cases, particularly those occurring in disadvantaged neighborhoods marked by street culture, where shootings were not reported if no one was injured (Harlow, 1985; Harries, 1990; Kirk & Papachristos, 2011). Kirk and Papachristos (2011) noted

that the mean levels of legal cynicism are higher in neighborhoods characterized by concentrations of poverty, residential instability, and have a greater proportion of youths. Thus, those living in neighborhoods with these qualities would be less likely to trust that the police could effectively respond and help when called. As noted by Kirk and Papachristos (2011), negative interactions with the police and other legal institutions, combined with neighborhood structural characteristics, can lead to legal cynicism. This could, in turn, lead individuals not to report crimes because they feel as though the police will not solve their problems or remedy disputes. Furthermore, Kirk and Matsuda (2011) argued that residents might assume that their collective efforts to rid their neighborhoods of criminals might be in vain if offenders are placed back on the streets. Moreover, residents may fear retribution from offenders as a consequence of contacting the police. Future studies are therefore encouraged to include a measure of legal cynicism, which could provide insight into the reporting of gun crime in areas with higher levels of disadvantage and violence.

An additional concern is related to generalizability. This study was conducted using data from a city with a population of just over 180,000, which leads to concerns regarding whether the findings would be replicated in larger cities like Chicago, Atlanta, Los Angeles, or New York. Thus, future works are encouraged to explore the relationship between structural characteristics and total, gang-involved, and non-gang-involved gun crimes in other cities and jurisdictions.

Furthermore, the methodology itself may have obscured important relationships. Studies using a crime pattern approach, such as those advanced by Brantingham and Brantingham (1993); Brantingham and Brantingham (1984); Brantingham and Brantingham (2013), have consistently noted that crime tends to cluster around certain places and addresses. The crime

pattern approach suggests that crime is a highly varied and complex event and that crime will occur if an area provides the opportunity for crime within the offender's awareness space. Further, the crime pattern approach discusses the importance of pathways, nodes, edges, crime generators, and crime attractors (Brantingham & Brantingham, 1993), and further fleshes out the importance of the built environment in relation to crime. The crime pattern approach might prove an illuminating approach to the examination of disaggregated gun crime, given its recognition of the similarities and differences between crimes and how daily activities influence crime patterns (Brantingham & Brantingham, 1993). Studies in Boston and other cities have found that crime clusters in a few discrete “hot spot” places nested within neighborhoods (Pierce et al., 1988; Sherman et al., 1989), suggesting the need to adopt an extension of crime pattern theory in the form of a place-in-neighborhood approach, as advanced by Tillyer et al. (2021). The place-in-neighborhood approach describes how neighborhood characteristics work in conjunction with micro places in the production of crime (Tillyer et al., 2021), an approach that might further clarify the results presented here.

CHAPTER VII

CONCLUSIONS

Despite the limitations described above, this study maintains important implications for policy and practice. First, it appears necessary for future research to reconsider the use of aggregate measures of gun crime. Currently, research surrounding gun crime is limited due to the use of broad and aggregated measures. Based on the findings presented in this study, this approach may be a misstep. In other words, future research and practice should prioritize the disaggregation of gun crimes and use the findings to better inform policies and practices and address gun violence in the community.

The prioritization of the disaggregation of gun crimes throughout future research could lead to implications for both policing and the improvement of neighborhood structural characteristics. In terms of policing, analysis from the current and future studies can inform law enforcement agencies as to how to best police their communities and reduce or prevent gun crime. Specifically, delineating measures of gun crime may allow for the development of distinct interventions that target specific forms of firearm offending. Overall, policies and practices suited to these specific areas would likely impact gun crime as a whole. Moreover, this approach may provide city leaders with the evidence they require to improve neighborhood structural characteristics linked with distinct forms of gun crime.

In conclusion, the disaggregation of gun crimes should remain a focal point of interest among researchers and policy makers alike. It is the hope of the author this thesis will serve as a

starting point for future studies that could further clarify the relationships between structural conditions and gun crime. In turn, further research can contribute to the cultivation of policies that further the collective understanding of gun crime and effective means of preventing or reducing firearm offending and victimization.

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