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Crime in New Orleans: applying the civic community perspective to urban violence

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CRIME IN NEW ORLEANS: APPLYING THE CIVIC COMMUNITY PERSPECTIVE TO
URBAN VIOLENCE

A Dissertation

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by
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ABSTRACT

Civic community theory is a macro-level social control perspective that has emerged within the past 10 years as an explanation of community variation in crime rates. The theory is based on the assumption that well-integrated communities are better able to regulate their members' behaviors than poorly integrated communities. It has been particularly successful in explaining violent crime rates in rural counties or communities, but research has generally ignored the relationship between civic community theory and violent crime in urban areas.

The current study aims to determine the applicability of the civic community perspective to urban areas, as a link has not been demonstrated in previous research. To test its applicability, census tract data are analyzed. The link between civic community theory and violent crime, particularly homicide and aggravated assault, is determined using secondary data geocoded to census tracts in Orleans Parish, Louisiana. Data are gathered from the U.S. Census Bureau's American Community Survey, the Zip Code Business Patterns, and the New Orleans Police Department. Negative binomial regression techniques are utilized after creating a measure to capture any spatial autocorrelation that may exist between census tracts.

The results reveal that the protective effects of civic community theory are applicable to violent crime in urban areas. Each civic community measure was found to be negative and significantly related to homicide and aggravated assault counts individually and when combined. Additionally, an interactive effect between civic engagement and resource disadvantage indicated that the protective effect of civic engagement is stronger in areas plagued with high levels of disadvantage. Upon analyzing the standardized percent changes, it was revealed that the strength of the individual civic community measures varies depending on which violent crime is being predicted. Specifically, self-employment was found to have a greater protective

effective against homicide while civic engagement and homeownership had greater protective effects against aggravated assault. The paper is concluded with a discussion of theoretical implications, limitations of the current project, and avenues for future research.

CHAPTER 1: INTRODUCTION

Urban areas in the United States have a long history plagued with violence and other criminal activity. As of 2008, the FBI's Uniform Crime Reports indicate that of all violent crimes committed in the U.S., 89.9% occurred in metropolitan statistical areas (MSAs), compared to only 10.1% of the crime occurring in nonmetropolitan areas (U.S. Federal Bureau of Investigation 2009a). It is not unusual, however, to find that a large percentage of crime occurs in an urban setting since most of the U.S. population lives within a metropolitan area. To truly show the level of violence in urban areas, it is more appropriate to compare crime rates. When doing so, the same picture is revealed. In the U.S. in 2008, MSAs had 489 violent offenses per 100,000 inhabitants compared to 279.6 per 100,000 nonmetropolitan inhabitants (U.S. Federal Bureau of Investigation 2009a). The focus area of this study, Orleans Parish, Louisiana, is no exception to this rule. Due to its large population, exceeding 100,000 residents, this parish is characterized as a metropolitan county. It is, therefore, not alarming to find high crime rates within the parish. Specifically, according to the 2008 crime statistics, the city of New Orleans had a violent crime rate of approximately 1,019 violent offenses per 100,000 residents (U.S. Federal Bureau of Investigation 2009b). Given the prevalence of crime in urban areas, it is not surprising that much of the available criminological research tests theories in the urban milieu using varying levels of analysis.

An ample amount of research conducted in urban areas has focused on applying social disorganization theory as an explanation for the high rates of violence. In fact, widespread support has been found in the sociology and criminology literatures regarding the link between this perspective and violent crime in cities (see Shaw and McKay 1942; Sampson and Groves 1989; Sampson, Raudenbush, and Earls 1997 among others). Through social disorganization

theory, as well as the systemic model, researchers have concentrated on how measures of deprivation (i.e., socioeconomic disadvantage) or population change effect community rates of crime (see Land, McCall, and Cohen 1990). While this perspective provides a good fit for explaining likely causes of urban crime, there has been a lack of research to show what may buffer these areas from crime.

To address these concerns, recent attention has shifted away from the deprivation variables of social disorganization theory toward a focus on the impact that community social and economic infrastructure has on crime rates through civic community theory. Under this theory, it is proposed that communities which are more integrated are better off and have lower crime rates than those less integrated communities. This perspective is represented by three main components: local capitalism and the economically independent middle class; religious and secular civic engagement; and residential stability and local investment.

Each component characterizes ways in which community cohesion is developed and maintained among residents, resulting in lower community crime levels. Locally owned businesses, representing local capitalism and the presence of an economically independent middle class, are embedded within the community and more closely tied to place than larger manufacturing firms. Local orientation exposes the business and its employees to the same community conditions, making these residents more interested in community well-being as their success is dependent on the success of the area. This interest includes keeping community crime rates at bay since crime in an area can affect and be detrimental to the success of businesses. Those establishments located in crime-prone areas are likely to see fewer patrons than businesses in crime-free communities. Therefore, local business owners become actively involved in

community affairs as it is essential for owners to keep crime out of the community for their business to thrive.

Civic engagement and residential stability also provide ways in which community cohesion is generated. Social institutions, such as churches or local organizations, provide places for networking and engaging members in community affairs. Participation in these institutions results in members of the community sharing common goals and working collectively to solve community problems, including those related to crime. Residential stability is also related to greater networking among residents as well as increased participation in community associations. As tenure in an area is increased, social ties to the community are increased as time allows residents to embed within and attach themselves to other members or institutions. Local investment, demonstrated through homeownership, further attaches a resident to the community provided that the value of their home is dependent on the surrounding area. If crime and dilapidation take hold, the housing market may be adversely affected, causing property values to decrease substantially. Creating and maintaining networks and involvement provides a way in which residents can keep these problems out of their community. These networks, whether generated through civic engagement or residential tenure, allow residents to enact informal social control mechanisms and regulate the behavior of community members, thereby reducing crime rates. As demonstrated above, each component of the civic community perspective reveals how social and economic infrastructure benefits communities and provides a buffer from crime.

Orleans Parish, Louisiana provides a unique location to test the components of civic community theory in an urban setting given its recent history, as well as its long struggle with violence. The city of New Orleans, in particular, is infamously known for its high violent crime rates and is among one of the most dangerous cities in the United States. From 2000 to 2008, the

city of New Orleans has reported an average of over 1,000 violent crimes per 100,000 inhabitants, a rate well above the national MSA crime rate.[1] These crime rates have appeared to uphold over time even in the midst of mass population restructuring caused by one of the largest and most deadly hurricanes to impact the United States.

In 2005, Orleans Parish experienced one of the greatest and most rapid losses of population in recent history. Hurricane Katrina, a large Category 3 hurricane when it made landfall, caused over $125 billion in damage and took the lives of more than 1,800 people in the New Orleans area and along the Gulf Coast (Graumann et al. 2006; Louisiana Department of Health and Hospitals 2006). In the year following the storm, only 208,000 of the 455,000 residents populating the parish before the storm had returned (U.S. Census Bureau 2009). Organizations, local business owners, and residents most closely tied to the city were among the first to return and reestablish connections within and to the community. Thousands of other residents who had evacuated the area for the storm either never returned or slowly trickled back in once the city had undergone substantial recovery. The distinctive circumstances and reformulation of the parish gives researchers a rare opportunity to look at how measures of civic community hold up to urban crime in the midst of large-scale population disruption.

While civic community theory has been limitedly tested on urban areas, most of that research has not found a link between civic community theory and crime mainly due to the use of county-level data. It is not pragmatic, however, to believe that an urban county containing 100,000 or more people can represent a single community. In fact, "broader spatial units such as counties . . . can encompass a variety of distinct communities" and "may mask essential differences in local communities' institutional structures" (Tolbert, Irwin, Lyson, and Nucci 2002: 92). To overcome this obstacle, this study uses Orleans Parish census tracts to determine

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[1] Data for 2005 were not available and are therefore not included in the average rate over the previous nine years.

the effect of civic community measures on urban violence. Census tracts usually contain about 4,000 people and are smaller, more manageable urban units than counties. By examining Orleans Parish data at the census tract level, the effects of civic community measures on crime may be realized as these units will more closely resemble the population size of rural counties commonly used to test the theory.

With regard to the civic community perspective, an extensive amount of research published has either provided evidence consistent with the theory or has directly tested its components. The following chapter consists of a discussion of the theory, as well as how measures of this perspective are thought to influence community well-being, including community crime rates. Additionally, empirical support for this perspective will be presented. As stated above, this theory has almost exclusively been used to explain crime in rural areas, although there is no reason to expect the theory cannot explain crime in urban settings as well. Therefore reasons the social and economic aspects of the civic community perspective should be related to lower violent crime rates in urban areas are provided. The chapter is concluded with a brief summary and a statement of the hypotheses for the current study.

Chapter 3 contains an explanation of the study site, data, measures, and methods used in this research. A short history on the city of New Orleans and Orleans Parish is offered, focusing on the detrimental effects of Hurricane Katrina and crime rates in the area. Reasons New Orleans is an appropriate place to study the effects of civic community perspective on crime are also discussed. Additionally, the concepts indicative of the civic community perspective, as well as the relevant control variables, are operationalized. Also included within this chapter is how these data were obtained and collected. Finally, research is offered to justify the use of negative binomial regression analysis, spatial auto-correlation, and data reduction techniques.

In Chapter 4, results are presented from each negative binomial regression analysis. The first three models offered are those relating to the prediction of homicide counts in Orleans Parish census tracts. These models are presented in a stair-stepped fashion to explore potential mediating effects between civic community measures and homicide counts. Subsequent analyses are presented regarding the relationship between the civic community perspective and aggravated assault counts as well as combined crime (homicide and aggravated assault) counts. These models were conducted in the same fashion as those concerning homicide counts. The results from each are presented and discussed within this chapter.

Finally, Chapter 5 provides a brief summary of the study along with conclusions and implications of this research that are relevant to the field of criminology. Limitations of the research, as well as areas for future research, are also discussed.

CHAPTER 2: THEORETICAL FRAMEWORK AND LITERATURE REVIEW

2.1 CIVIC COMMUNITY THEORY

Civic community theory is a macro-level theory of social control that "focuses on the relationships between economic and noneconomic institutions" (Tolbert et al. 2002: 92). This perspective maintains that trust and cooperation among residents are the result of civic institutions that nurture relationships. These civic institutions are brought about through what are identified as two main dimensions of the civic community perspective: local capitalism, which comprises the economically independent middle class, and civic engagement, either religious or secular in nature. Within the perspective, it is maintained that communities which are well-integrated (i.e., communities that have extensive local capitalism and civic engagement among residents) are better able to regulate the behaviors of their members, including violent tendencies. These communities can also solve problems and resolve local issues in a way that is beneficial to residents and business owners alike.

A third dimension is that of residential stability and local investment. This final component stems mostly from the social disorganization perspective, which argues residential stability is an important part in promoting social control and improving community well-being. Additionally, the stability of a population affects and is affected by civic engagement and local capitalism. If a population is not stable or experiences frequent population turnover, civic engagement and local capitalism may not be as pronounced or effective in a community since new residents are not immediately connected to the place and may require time to acclimate to their new surroundings. Conversely, people can be bound to a place because of the heavy concentration of institutions or organizations that exist, allowing civic engagement and local capitalism to thrive in the area (Barber 1995; Irwin, Tolbert, and Lyson 1999). As a result,

residential stability becomes an important predictor of civic welfare in a community. In the following three sections, the theory behind each component of the civic community perspective, as well as empirical support for each, is discussed at length.

2.1.1 Local Capitalism and the Economically Independent Middle Class

The local capitalism of a community is generally measured through the presence of locally owned businesses or firms. Mills and Ulmer (1946) first drew attention to the importance of local capitalism on the level of civic welfare in communities in their report to the U.S. Senate. The report stated that cities comprised mainly of small businesses had a higher level of civic welfare than did big business cities (Mills and Ulmer 1946). These smaller establishments are usually more invested in the community, both socially and financially, and therefore contribute to the civic culture of the area (Mills and Ulmer 1946; Piore and Sabel 1984; Tolbert et al. 2002; Tolbert 2005).

One reason a business or firm may be locally invested in an area is because of its size. Small firms, characterized as having fewer than 20 employees, are those most likely to become locally embedded (Lyson and Tolbert 1996). Due to their size, employers and employees usually have mixed roles, creating an environment that lacks the complex division of labor required for larger operations to run effectively. As a result, owners and managers of small firms often work together with their employees out of necessity, creating a close-knit network within the business. Consequently, these firms tend to find new employees by making use of their ties, either through kinship or friendship networks, within the community. Using these local networks benefits community residents and provides employment opportunities for those within the community (Tolbert et al. 2002).

In addition to a firm's size, the geographic scope of the company may also affect its local orientation. Firms that have multiple establishments across the nation are less reliant on the well-being of any particular community. These firms have the ability to move plants or necessary machinery to a more prosperous community in the event of economic decline or adverse community conditions. Having a single establishment or multiple establishments in one area, however, more closely ties the firm to the community. These firms are generally less able to move out of the community because they lack the national scope of larger multi-establishment firms, making it harder to successfully transfer to a new, untested market (Tolbert, Lyson, and Irwin 1998; Tolbert et al 2002).

The concept of the economically independent middle class is closely linked to the idea of local capitalism. The owners of small firms or businesses are typically self-employed and usually make up the economically independent middle class within a community. As owners of local establishments, whose personal and business successes are dependent on the community, these members must work to sustain local capitalism and civic well-being. As a result, these owners and managers are usually active participants in the community and often become leaders in civic affairs as they have the education, training, and connections necessary to manage civic efforts (Mills and Ulmer 1970). Additionally, these individuals are interested in maintaining the civic environment, with regard to well-being, including lower crime rates, as they usually "benefit personally as a result of civic improvement" (Mills and Ulmer 1946: 23). If business owners have an establishment in an area that becomes dilapidated or crime-prone, they may have a reduction in the number of patrons, thereby reducing profits and making it more difficult to keep the business open. To prevent these issues from affecting their livelihood, local business

owners become more involved in community affairs to keep problems away or to remedy any existing issues.

Lyson, Torres, and Welsh (2001) referred to those active business leaders as members of the civically engaged middle class. Through their ties to business clubs or other associations and organizations, business owners are able to develop and maintain a network of local supporters (Mills and Ulmer 1946; Tolbert et al. 2002). Local owners are also "more likely to provide support, membership, and direction" for other institutions in the community (Tolbert, Lyson, and Irwin 1998: 405). The connections they create through participation in local institutions allow owners to develop an even stronger relationship to place because of their status as a valued citizen within the community. In addition, this status allows business persons to serve as role models for youth within the community by representing the accepted norms and values of society. Showing local youth that they too can achieve success through legitimate means such as receiving an education may deter criminal behavior. Moreover, developing these strong networks makes it less likely that the owners of these businesses will relocate during tough economic times, given that they are so engrained in the community.

Executives of big businesses or absentee-owned establishments, on the other hand, are usually more connected to the corporation, rather than the community, considering their success or upward mobility occurs within the corporate structure (Mills and Ulmer 1946). As a result, these employees are generally only involved in the community to the extent that their participation enhances the company and are not otherwise engaged in local organizations (French 1970; Mott 1970; Coates and Pellegrin 1956). Additionally, advancement or promotion within the company may require an employee to transfer to a new location, and thus a new community. The possibility of relocation makes it more difficult to develop ties to or become involved in the

community (Blanchard and Matthews 2006). For these reasons, employees of larger companies are less reliant on or embedded within the community than those of businesses which are locally owned. The attachments created to the community by local establishments and their employees, therefore, can be expected to benefit residents while increasing the community's well-being and reducing community crime rates (Tolbert, Lyson, and Irwin 1998).

Additionally, research has documented the positive effects that the presence of locally owned businesses and an economically independent middle class has on the well-being of counties, including how they affect community violent crime rates (Tolbert, Lyson, and Irwin 1998; Lyson, Torres, and Welsh 2001; Lee and Ousey 2001; Tolbert et al 2002; Lyson 2006; Lee 2008). A link between locally owned businesses and community well-being was shown by Tolbert, Lyson, and Irwin (1998). In their county-level analysis, they found that those communities with small manufacturing firms and local capitalism were better off in terms of lower poverty, inequality, and unemployment rates than those without. The findings led to the conclusion that "the greatest local good is related to local capitalism; i.e. the proliferation of smaller, economically less efficient enterprises and of locally oriented noneconomic institutions" (Tolbert et al. 1998: 422-423).

Evidence demonstrating the importance of the economically independent middle class on civic welfare can be found in the 2002 study conducted by Tolbert and colleagues. In this study, the authors examined the effect of civic community measures on income, poverty, population stability, and unemployment (four indicators of civic welfare) in 1,886 nonmetropolitan and 2,667 metropolitan small towns. With regard to self-employment, referred to as nonemployment in the study, the authors found a positive association with median income and a negative association with unemployment, regardless of the type of small town. Additionally they found a

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negative association with poverty in nonmetropolitan small towns, indicating that communities with higher levels of self-employment have lower levels of poverty. In general, the authors conclude the presence of self-employed persons in both metropolitan and nonmetropolitan small towns is associated with greater civic welfare (Tolbert et al. 2002).

Linking the ideas of civic community to crime, Lyson, Torres, and Welsh (2001) looked at agriculturally dependent counties in the U.S. They found that those counties with larger farms had higher rates of violent crime, an indication that a community is not well off, while those with an economically independent middle class had lower rates of violent crime. They also showed that crime declined over time in those places with a strong economically independent middle class and did not decline in those characterized by large farms. Further support of the link of small manufacturing firms on violent crime is seen in Lee and Ousey (2001). In their study of 1,731 nonmetropolitan counties, they found that the presence of small manufacturing firms contributed to crime control directly and by mediating the effect of disadvantage on crime rates.

Additional support for the importance of local capitalism, as well as an economically independent middle class, is found in Lee's (2008) study of violent crime in 1,038 nonmetropolitan counties. He suspected that as a result of the connection created to and within the community, those counties with a high degree of local capitalism and a large economically independent middle class are better able to integrate their members, solve community social problems, and regulate members' behaviors, thereby reducing criminal activity. Evidence of this idea is provided in the results which show that those counties scoring high on local capitalism and the presence of an economically independent middle class have lower violent crime rates overall (Lee 2008).

These studies reinforce the notion that the presence of locally owned businesses and an economically independent middle class improves a community's well-being, in general, and by lowering crime rates. While examined primarily in rural areas, the relationship has not been fully explored in an urban setting. Research, therefore, is needed to determine the effect of locally owned businesses and the presence of an economically independent middle class on urban crime rates.

2.1.2 Civic Engagement

Interest in the linkages between civic engagement and voluntary associations dates back to the work of Tocqueville ([1835] 1862) who believed the "hallmark of democratic society … was the propensity to associate and the enabling of political participation through association" (Tolbert, Lyson, and Irwin 1998: 405). Civic engagement can occur through religious participation as well as involvement in secular organizations. It is denoted by active participation in those institutions of a community, whether social or political, that foster social ties, build social trust, foster shared norms and values, and lead to commonly shared goals in the community (Lee 2008).

Community organizations, especially those that encourage association, are thought to be most beneficial and increase civic welfare. Some of these organizations, such as the local YMCA, allow community members to bond by providing a common space for interaction. Additionally, churches and faith-based organizations not only promote association, but provide a basis of mobilization for solving problems within the community (Pattillo-McCoy 1998; Tolbert et al. 2002). Other research has emphasized the importance of religious structures by noting they provide an important source of volunteerism (Greeley 1997) and tend to anchor people to place (Irwin, Tolbert, and Lyson 1999).

Knowing civic engagement, and ultimately civic welfare, is influenced by community organizations begs the question: What is it about those organizations, or associations, that enable them to promote civic engagement more than others? Putnam's (1993) work on Italian regional governments addressed this question by determining how organizational structure, social institutions, and civic engagement are interconnected. Putnam argued that the organizational structure of some institutions promote "horizontal ties" that connect various groups to one another. These between-group ties foster civic embeddedness and social trust and become a form of social capital for community members. As noted by Putnam (1993: 175),

> The more horizontally structured an organization, the more it should foster institutional success in the broader community. Membership in horizontally ordered groups (like sports clubs, cooperatives, mutual aid societies, cultural associations and voluntary unions) should be positively associated with good government.

Not all organizations, however, foster horizontal ties or promote civic engagement. Those organizations that are hierarchically structured foster "vertical ties," limiting member interaction to within-group activities and ultimately decreasing the amount of civic engagement in which members are involved (Putnam 1993).

Further advancing the idea of civic engagement as a form of social capital, Putnam (2000) coined the terms "bridging" and "bonding" social capital. Similar to his idea of horizontal ties, bridging social capital allows interaction between groups, thereby building social ties and trust in the community as a whole and not just within the group. Those who have bridging capital are more likely to participate in other forms of civic engagement, such as civic associations, which leads to broader social network saturation and more widespread community integration. Bonding social capital, however, is similar to his idea of vertical ties in that it fosters within-group activity and has been demonstrated to strengthen networks of group members.

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Bonding capital is more detrimental to the community since the degree to which these organizations are embedded within the community is limited (Putnam 2000; Beyerlein and Hipp 2005, 2006; Lee 2008).

With regard to religious institutions, those classified as civically engaged are considered most beneficial to community well-being. Civically engaged religious denominations are identified as "those whose members are actively involved in other community organizations and affairs apart from the core religious activities" (Lee and Bartkowski 2004a: 1010). These ideas advanced by Tolbert and colleagues (1998) and Putnam (2000), indicate that those denominations benefit the community because they foster bridging social capital among members. Research has characterized mainline Protestant, as well as Catholic and Jewish, denominations as civically engaged denominations as they tend to foster bridging capital, while evangelical Protestant denominations foster bonding capital and therefore are not considered civically engaged denominations (Beyerlein and Hipp 2005, 2006; Tolbert, Lyson, and Irwin 1998; Chaves and Tsitsos 2001).

Tolbert et al. (1998) tested this thesis by studying the effects these denominations have on community well-being. The authors classified denominations as civically engaged when members of those religions had above average participation in voluntary associations. This classification resulted in the identification of 12 civically engaged religious groups or denominations. Using this measure, it was determined that in those areas where the presence of these denominations was high, inequality, poverty, and unemployment were significantly lower, implying communities were better off.

While the previous study is able to link religious civic engagement to some measures of community well-being, it is also important to recognize that low crime rates indicate that

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communities are well off. Two theoretical perspectives – the systemic social disorganization perspective and the institutional anomie perspective – can be used to illuminate the expected link between civic engagement and community crime rates. The systemic social disorganization perspective recognizes the beneficial horizontal, or bridging, social networks community organizations may foster among members. Using social disorganization theory, the effect of those attachments on crime rates can be articulated. This theory has long relied on the understanding that those communities whose members are closely attached through these networks have collective goals, work together to achieve those goals, and are thus able to deter residents' criminal behavior (Bursik 1988; Sampson and Groves 1989; Sampson, Raudenbush, and Earls 1997). Using the normative social control argument, Lee and Bartkowski (2004a: 1011) assume, therefore, that civically engaged communities "should function with shared normative understandings of acceptable and unacceptable behavior" because of the collective goals created by residents. As a result, variations in community crime rates should be linked to the level of civic engagement among community members.

Institutional anomie, or community-level strain, perspective focuses on the strain associated with achieving culturally valued goals, such as status attainment or financial success. Attachment to civically engaged institutions may reduce pressures to achieve those goals (Agnew 1999; Messner and Rosenfeld 1997; Chamlin and Cochran 1995; Piquero and Piquero 1998). Civically engaged organizations remove the focus from an individualistic orientation as they promote volunteerism as a way to help others. This external focus, then, may eliminate the criminogenic pressures to gain economic success at any cost (Lee and Bartkowski 2004a). This perspective provides an additional theoretical basis which supports the belief that community crime rates should be lower in areas with a high level of civic engagement.

Prior research has provided support for the notion that civic engagement, both religious and secular, affects community crime rates. Specifically, the effects that civically engaged religious denominations have on violent crime rates have been demonstrated in numerous studies (Ellison, Burr, and McCall 2003; Lee and Bartkowski 2004a; Beyerlein and Hipp 2005). For example, Ellison, Burr, and McCall (2003) found higher average homicide rates in metropolitan areas with a large population of evangelical or conservative Protestants – denominations thought to foster bonding social capital. Conversely, in their study on juvenile homicide offending in 1,440 rural and 449 urban counties, Lee and Bartkowski (2004a) tested whether the proportion of persons adhering to civically engaged denominations affected juvenile homicide rates. Their results showed that those rural counties with higher proportions of the population adhering to civically engaged denominations experienced lower juvenile homicide rates. However, this relationship was not supported with regard to urban counties. To further test the link, homicide rates were disaggregated by victim and offender relationship. Again, it was found that where the proportion of persons adhering to civically engaged denominations was higher, juvenile family homicide was lower. This relationship did not hold for acquaintance or stranger homicides and was not supported in the urban model. Lee and Bartkowski (2004a) concluded that participation in these religious activities had an "umbrella" effect, which protected those persons immediately known to the offender, but not a "canopy" effect because it did not hold with relation to all types of homicide.

Further support for the importance of religious denominations in communities with regard to their effect on crime rates is shown by Beyerlein and Hipp (2005). In their analysis of 3,157 counties in the U.S., they tested the effects of bridging and bonding social capital on murder, aggravated assault/robbery, and burglary. Using the categorization of denominations

established in previous research, bridging capital was measured as the proportion of persons in a county that adhered to mainline Protestantism or Catholicism, while bonding capital was measured as the proportion of persons adhering to conservative or evangelical Protestantism. With regard to the crimes studied, bridging capital worked to reduce the crime rates in counties. Where there were more mainline Protestants or Catholics, crime rates were lower. Furthermore, where there were more evangelical Protestants, crime rates were higher. These studies lend support to the notion that communities benefit from civically engaged religious denominations and experience lower crime rates as a result.

While measuring the level of civically engaged denominations best distinguishes between those that are more beneficial to the community than others, research has also shown that the presence of religious institutions, regardless of their level of civic engagement, serves to reduce crime rates. Knowing these institutions exist in the community, one can conclude members of the community are frequenting them and receiving the benefit they provide the community as these organizations can only thrive if there is active community membership. In their work on the relationship between institutional access and homicide rates in urban areas, Lee and Ousey (2005) construct a measure of black church access, regardless of denomination, and institutional access based on the number of social and civic organizations per 100,000 black persons aged 10 to 64. Their study revealed that the presence of such institutions reduces homicide rates, providing support for the important role the presence of these associations has on community well-being despite religious affiliation.

Civic engagement, as previously stated, also occurs outside of the religious realm through secular organizations or associations. As noted by Putnam (2000), social and civic institutions are the mechanisms through which community life takes place. Participation in these

associational activities strengthens the local social fabric. This participation can lead to dense network structures and an increased ability of the community to take care of the needs of its members.

Support for secular civic engagement, with regard to participation in organizations or associations, and its relationship with lower crime rates has been found in numerous studies utilizing varying theoretical perspectives. Testing social disorganization theory in 238 British localities, Sampson and Groves (1989) report that organizational participation, measured as attendance at committee and club meetings, and violent victimization are inversely related. Additional support is displayed in the work of Rosenfeld, Messner, and Baumer (2001). Their study consisted of 99 primary sampling units within which they tested the relationship between homicide rates and secular civic participation measured through voting participation and Elk membership. The authors found that where social trust is high and civic engagement is widespread, homicide rates are lower regardless of demographic characteristics.

As with religious civic engagement, a measure of civic organizations within a community is as equally important as individual-level participation. Using a measure of the number of organizations per 1,000 residents, in addition to a measure of voter turnout, Lee and Bartkowski (2004b) created a secular civic engagement index. This index acted as expected, showing that counties ranking high on these measures have lower adult homicide rates. Furthermore, in Lee's (2008) study of civic community theory in rural counties, civic engagement, measured through an index comprised of the number of civic associations, voter participation, and religious adherence, was found to be negative and significantly related to violent crime rates. Each study reinforces the notion that institutional access can serve as an indicator of community engagement and participation.

The research reviewed above lends further support for civic community theory and reinforces the idea that communities with high levels of civic engagement, whether measured specifically (through type of denomination or participation) or more generally (by access to these beneficial institutions), have lower rates of crime. Unlike measures of local capitalism, support for the importance of civic engagement has been demonstrated in both urban and rural settings. Whether the benefits provided by access to these institutions translate to more narrowly defined communities, such as those in a census tract, could be determined through additional research.

2.1.3 Residential Stability and Local Investment

The civic community perspective takes into account the importance of the residential stability of communities and the idea of local investment. The detrimental effects of population turnover within urban communities have long been established in the social disorganization literature (see Shaw and McKay 1942). Most research has found that population disruption or turnover has been linked to increased crime at various levels of analysis (among others, see Shaw and McKay 1942; Stark 1987; Sampson and Groves 1989; Sampson, Raudenbush and Earls 1997). Specifically, areas characterized by high rates of population turnover have a decreased ability to exhibit formal and informal community social control, decreased levels of community surveillance, residents who do not feel as strongly attached to the community, and a decreased likelihood of residents to intervene in crime-related situations on the behalf of others (Sutherland and Cressey 1978; Stark 1987; Sampson 1987; Bursik 1988).

Living in one place for a considerable length of time is thought to strengthen local social ties and increase associational, as well as organizational, participation (Freudenberg 1986). If neighborhood populations are constantly changing, residents are less able to get to know one another or form strong social bonds. Residential stability, therefore, allows those in the

community to build local friendship networks (Sampson and Groves 1989), thereby building social trust (Kasarda and Janowitz 1974; Sampson 1988). Specifically, in their research using various community sizes, Kasarda and Janowitz (1974) found that length of residence had positive and significant direct effects on local social bonds. They concluded that whether or not a resident feels a sense of community is a function of length of residence. Furthermore, increased length of residence increases social bonds, keeps community sentiments intact, and increases the number of primary social contacts of residents.

A study conducted by Sampson (1988) provided additional support for the work of Kasarda and Janowitz (1974). Examining the macro-level implications of length of residence, he revealed a large direct effect on local friendship ties after controlling for urbanization, density, and six other macro-level variables that may have influenced the relationship. He concluded that "local friendship ties vary widely across communities and … these variations are positively related to community stability" (Sampson 1988: 778).

Knowing that increased residence strengthens social bonds and affects a person's sense of community led researchers to question what it was that kept residents in one place for an extended period of time. In their study, Irwin, Tolbert, and Lyson (1999) examined what anchors people to place. Their analysis focused on the interrelationship between nonmigration and community social institutions. The results indicated that the proportion of persons who stayed in a county between 1985 and 1990 varied directly with measures of civic community, such as the number of locally owned businesses, small manufacturing firms, family farms, the proportion of the population adhering to civically engaged religious denominations, and the number of civic associations.

Residential stability can also be expected to influence community crime rates. As populations stabilize, with few residents moving into or out of an area, members form strong social networks, either independently or through participation in local organizations. These networks allow members to work together to solve community social problems, including issues with crime. As posited earlier, systemic social disorganization perspective would suggest strong social networks within and to the community allow members to create and achieve collective goals, thus hindering potential criminal behavior of residents as these members have a common understanding of what is and is not acceptable behavior (Bursik 1988; Sampson and Groves 1989; Sampson, Raudenbush, and Earls 1997; Lee and Bartkowski 2004a). These shared understandings, therefore, should be evident in reduced crime rates where residential stability is greater.

Previous research has supported the expected relationship between residential stability and community well-being, including its effects on community crime rates. Numerous studies have found that residential instability increases crime rates while decreasing community attachment (among others, see Sampson and Groves 1989; Osgood and Chambers 2000). Studies conducted by Sampson and Groves (1989) and Osgood and Chambers (2000) found that crime was higher where residential mobility, or population turnover, was more intensive. Conversely, Lee's (2008) study concluded residentially stable counties have lower violent crime rates. Given that these studies used varying units of analysis (British localities vs. U.S. counties) strengthens the argument for the relationship between residential stability/instability and crime. Specifically, the results highlight both the detrimental effects of residential instability and positive effects of residential stability on community crime rates.

Moving beyond a single measure of residential stability, researchers began to consider the effect of local investment, a concept that is closely related to residential stability and is typically determined by homeownership. The local investment component is based on the idea that those who own "a piece of the pie" are more likely to care about what is going on around them and are more likely to make an effort to keep their community safe. Homeownership, therefore, is an important aspect of the civic community perspective because one of the largest investments into an area that a person can make is to purchase a home. Homeowners have a "shared financial interest in supporting neighborhood life" because the well-being of their community will affect the value of their home (Sampson, Morenoff, and Earls 1999: 636). Additionally, these residents are more closely attached to the community in that they are not as easily able or willing to leave the area since this may rely on their ability to sell their home. This connection opens the door for building strong social networks with other community members. These residents, consequently, will be more invested in ensuring crime and other problems do not take hold in their communities.

Dating back to the work of Shaw and McKay (1942), homeownership has shown to be an important component in community well-being. Their work in Chicago neighborhoods showed that high rates of delinquents tended to appear in areas with low rates of homeownership. Continuing in the social disorganization tradition, Sampson, Raudenbush, and Earls (1997) created an index of residential stability containing a measure of homeownership and the proportion of persons who lived in the same house five years earlier. They were able to conclude that in communities with high residential stability, rates of violence are lower. Using the same index in his test of the civic community perspective, Lee's (2008) study on rural counties found

that there were lower rates of violent crime in places where a larger proportion of the population consisted of homeowners and was more residentially stable.

Support for the importance of residential stability and homeownership as aspects of the civic community perspective has been found in rural and urban areas, suggesting both are beneficial to communities no matter what the contextual differences. However, in the current study, homeownership is the only measure used to reflect this aspect of the civic community perspective. Reasons for the omission of population stability as a measure are explicated in Chapter 3. Despite this drawback, it remains important to include a measure of local investment for the current study to determine how it affects community crime rates in Orleans Parish census tracts.

2.2 A CIVIC ENGAGEMENT-RESOURCE DISADVANTAGE INTERACTION EFFECT

Criminological research has consistently shown that urban areas plagued with high crime rates are those with high levels of disadvantage (see Shaw and McKay 1942; Sampson and Groves 1989 among others). However, there have also been studies showing community-level variables may mediate the effects of disadvantage on crime rates (Sampson and Groves 1989; Kasarda and Janowitz 1974; Kornhauser 1978). In areas with higher rates of formal and informal social control the effect of resource disadvantage on crime is weaker indicating that forming social networks and bonds within the community can help keep crime rates down. The importance of these bonds is displayed through the formation of social capital which forms "from relationships between individuals, families, neighborhoods, and institutions . . . when these relations facilitate cooperative action" (Lee and Ousey 2005: 34). Civic engagement through noneconomic institutions is an essential tool for strengthening the necessary social networks that are vital to social capital within communities. The role civic institutions play in

communities becomes particularly relevant in areas plagued by high levels of resource disadvantage as members rely on each other for assistance and community social control.

According to Putnam (2000), the level of social capital is more important in poor communities because other types of capital in those areas are lacking. In affluent communities, members do not have to rely as much on social capital due to their increased access to human, physical, and cultural capital. Put simply, persons in poorer communities may rely on each other for day to day necessities that they cannot provide themselves. Keeping strong relational ties to those around you who may be able to contribute in your time of need becomes increasingly important in these communities. It can be argued that these relationships are best developed and maintained through ties to and participation within the community whether religious or secular. These relationships also increase community cohesion which is necessary to fight more severe social problems, such as high crime rates, since other types of capital are virtually nonexistent in those areas. As a result, where there is greater disadvantage, high levels of civic engagement becomes critical for the control of violent crime. Following the conceptual links outlined above, it is expected that the protective effect of civic engagement will be stronger in areas plagued by high levels of resource disadvantage.

2.3 SUMMARY AND HYPOTHESES

Previous research on the civic community perspective reveals widespread support for the theory when applied to rural areas. The three components of this theory have been found to be positively associated with measures of community well-being, such as lower poverty, unemployment, inequality, and crime rates, as well as a higher median income. The first component takes into account local capitalism and the economically independent middle class. Local capitalism, measured through the proportion of businesses in a county that are considered

small and locally owned (generally employing fewer than 20 workers), and the economically independent middle class, measured as the proportion of workers who are self-employed or work from home, have both been shown to be beneficial to community well-being. When communities are comprised of locally owned businesses and their owners, these areas have more residents who are tied to and reliant on the local community for their personal and business success and therefore are more invested in the well-being of the area. Conversely, these communities are less reliant on large absentee-owned firms who are not as invested or embedded within the community. As a result, communities with local capitalism and an economically independent middle class are better off than those without.

The second component measures civic engagement, either religious or secular, among community residents. Previous research has shown a variety of ways to determine civic engagement, from the presence of civically engaged religious denominations within the community to how many and how often residents participate in local organizations or associations. Whether civic engagement is measured at the individual or community level both forms have been found to be associated with higher community well-being. A plethora of civically engaged persons results in communities with residents who are more integrated and connected to each other and the community. These communities are better able to solve problems amongst themselves since residents are interested in keeping their community a safe, civically well-off place to raise their families.

The final component, residential stability and local investment, has been measured in research as the proportion of the population who lived in the same place the previous five years and those who own their own home. Locally invested residents, i.e., those who live in the same place for an extended period of time, are more likely to participate in community affairs and

develop social networks with other community members. Additionally, homeowners are shown to take pride in what they own. As a result, these residents are more interested in the success of the community since their property values and quality of life are affected by how well the community is doing. This additional connection to place has been shown to benefit the community, resulting in higher community well-being.

One drawback to research on the civic community perspective is its apparent lack of applicability to the urban milieu. The reason this theory has not been found to be pertinent to urban settings may be due to the classification of urban or rural counties, the usual unit of analysis for this perspective. Generally rural counties are characterized as those having fewer than 25,000 residents, whereas urban counties are typically those with populations of 100,000 people or more. Being a theory of "communities," however, it is not reasonable to think a county with 100,000 residents represents a single community. A better measure of an urban community would be that of a census tract, which generally consists of approximately 4,000 residents. Therefore, to test the true applicability of this theory to urban areas, this study looks at how measures of the civic community perspective affect violent crime rates in urban census tracts.

The relationship between measures of civic community and their effects on crime rates is expected to hold in urban areas when community-size populations are analyzed. The importance of locally owned businesses and the presence of an economically independent middle class should not be lessened due strictly to the location of the "community." The same line of reasoning can be used for the measures of civic engagement and local investment. Research has shown the importance of both in rural and urban counties demonstrating that civically engaged persons and those who own their homes are a valued asset to all types of communities.

In the civic community literature, it is clear that these measures have most often been used to explain variations in the occurrence of homicide. Because this is the most serious form of violence and also one of the most accurately reported measures, homicide counts serve as the primary dependent variable in this study. Based on previous research, the specific hypotheses for this study are as follows:

Hypothesis 1a: Measures of an economically independent middle class will have a significant, negative relationship with homicide counts in Orleans Parish census tracts.

Hypothesis 1b: Measures of civic engagement (both religious and secular) will have a significant, negative relationship with homicide counts in Orleans Parish census tracts.

Hypothesis 1c: Measures of local investment will have a significant, negative relationship with homicide counts in Orleans Parish census tracts.

Hypothesis 1d: The negative relationship between civic engagement and homicide counts will be stronger in census tracts with higher rates of resource disadvantage.

2.3.1 Supplemental Analyses

While the homicide count is the main dependent variable for this study, it is also important to examine what effects, if any, these civic community measures have on other types of violence that occur in urban areas. The most common form of violence displayed and recorded throughout the United States is aggravated assault. It accounts for the largest proportion of all violent crime each year. As a result, supplementary analyses regarding the relationship between civic community measures and aggravated assault counts, as well as combined crime counts, will be conducted. While there has not been much, if any, research done on the effects of the civic community components on aggravated assault or a measure of

combined crime counts, the relationships predicted with regard to homicide are expected to hold in these analyses. Specific hypotheses regarding these relationships are explicated below.

Hypothesis 2a: Measures of an economically independent middle class will have a significant, negative relationship with aggravated assault counts and combined crime counts in Orleans Parish census tracts.

Hypothesis 2b: Measures of civic engagement (both religious and secular) will have a significant, negative relationship with aggravated assault counts and combined crime counts in Orleans Parish census tracts.

Hypothesis 2c: Measures of local investment will have a significant, negative relationship with aggravated assault counts and combined crime counts in Orleans Parish census tracts.

Hypothesis 2d: The negative relationship between civic engagement and aggravated assault, as well as combined crime, counts will be stronger in census tracts with higher rates of resource disadvantage.

CHAPTER 3: DATA, MEASURES, AND ANALYSES

3.1 UNITS OF ANALYSIS

The current study tests the applicability of the civic community perspective on crime rates in census tracts within Orleans Parish, Louisiana. In particular, this research answers the question: What effect, if any, do civic community measures have on levels of crime in Orleans Parish census tracts? It is expected that where any of the three civic community dimensions is high, homicide and aggravated assault rates will be low.

As of the 2000 Census, there were 181 census tracts within Orleans Parish. Only those tracts for which there is data on crime and the numerous civic community measures were selected for inclusion resulting in 177 census tracts for analysis. Orleans Parish was chosen as the study area because it provides unique insights into the civic community perspective as the parish rebuilds following the devastation of Hurricane Katrina.

3.2 STUDY SITE – ORLEANS PARISH, LOUISIANA

3.2.1 Development and Devastation

Orleans Parish, Louisiana is known by many as a bowl as much of the parish sits below sea level with only parts near the Mississippi River and Lake Pontchartrain either at sea level or higher. Due to its location, construction within the city was limited to this higher ground until the 20th century. The area beyond the Mississippi River front was marshy and only used in part for agriculture and cow pasture because of its tendency to flood, making valuable land unsuitable for development. After studies were conducted by the Sewerage and Water Board of New Orleans and the Drainage Advisory Board, large pumps were designed to drain the marshy area of the city to allow for expansion. Being situated mostly at or below sea level, however, posed a problem for flood protection. Residents, therefore, relied on natural, as well as man-made,

levees to keep the city dry. Additionally, pumps were needed to remove water in the event of heavy rains since the city's bowl shape prevented water from naturally draining (Kendall 1922). The city's reliance on levees for flood protection would prove catastrophic in August of 2005.

August 29, 2005, Hurricane Katrina, a category 3 hurricane, made landfall across southeast Louisiana. Packing winds almost 130 miles per hour and a storm surge ranging from 10 to 19 feet above sea level, it caused miles of levees to buckle under the pressure of its strength, leaving no less than 80% of the city flooded for weeks (Graumann et al. 2006). As a result of Hurricane Katrina, more than 1,400 Louisiana residents lost their lives. The final death toll of 1,800, occurring as a direct or indirect result of the hurricane, makes the storm one of the five deadliest in history (Louisiana Department of Health and Hospitals 2006). Additionally, it caused approximately $125 billion in damage, leaving the city and the Gulf Coast devastated for years (Graumann et al. 2006).

Due to the massive flooding, many residents of Orleans Parish were forced to leave their homes behind, at least temporarily, as the city tried to recover from the devastation. In the years since Katrina, Orleans Parish has regained most of its population but has not reached levels seen before the storm. Estimates from the U.S. Census Bureau's American Community Survey Population Estimates show that immediately following the storm in 2006, only approximately 208,000 of the 455,000 residents had returned. By 2009, the population had reached 354,000, still more than 100,000 residents below the pre-Katrina level (U.S. Census Bureau 2009). As the area rebuilds and residents continue to return to their homes, Orleans Parish provides a unique setting to study communities and crime in one of the most notorious cities in America.

Orleans Parish has long been viewed as one of the most dangerous places to reside within the state of Louisiana and possibly the country. Wrought with high crime rates, the city is regarded by many as the murder capital of the United States. According to the 2008 Uniform Crime Reports, the city of New Orleans had a murder rate of 63.6 homicides per 100,000 people, making it one of the most deadly places to live. This rate is over 11 times that of the national homicide rate and is five times higher than the rate for the state of Louisiana as a whole, 5.4 per 100,000 and 11.9 per 100,000, respectively (U.S. Federal Bureau of Investigation 2009b, 2009c). While these rates appear extremely high for a city, crime rates may be misleading directly following the hurricane as accurate population or crime counts were not available. For example, according to the FBI's Uniform Crime Reports, there were 431,153 people in the city of New Orleans in 2006. However, the Census Bureau's American Community Survey reports only 208,000 in the entire parish (U.S. Census Bureau 2009). To overcome these discrepancies, crime reports obtained directly from the New Orleans Police Department, along with the American Community Survey's five-year population estimates are used for this study, as these estimates are more accurate and both are available at the census tract level.

While the city as a whole is viewed as a dangerous and violent place, there are areas within the city that experience more crime than others, as is seen across all cities in the United States. By focusing on census tracts, this study will be able to determine the characteristics possessed by tracts that keep crime from penetrating those areas.

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[2] The discussion about crime is focused on the city of New Orleans because aggregate data on Orleans Parish were not available from the FBI's Uniform Crime Reporting Program. Data presented were collected from the FBI's MSA data of which the city of New Orleans is a part.

3.2.3 Orleans Parish as a Suitable Study Area

Historically, the United States has not seen a massive depopulation of an area like that experienced in Orleans Parish post-Hurricane Katrina. This extensive shift in population provides researchers with a rare opportunity to study how community measures hold up in buffering an area from crime. As discussed above, Orleans Parish experienced a net population loss of 100,000 persons over a four year period. Although there is a net loss, many lifelong residents of the city have returned and continue to do so. As the population returns, various aspects of the community are affected, including community organizations and community crime rates. By using Orleans Parish as the study area, the effectiveness of civic community measures on reducing crime in the midst of city reconstruction can be determined.

3.3 DATA SOURCES

Three sources of data were utilized to collect information on the variables in this study: the American Community Survey, the Zip Code Business Patterns, and the New Orleans Police Department. The U.S. Census Bureau's American Community Survey's 2010 release of five-year estimates, which were collected from 2005-2009, are being utilized in this study because these data were mostly collected post-Hurricane Katrina and are therefore a more accurate depiction of the area than the 2000 Census data. Additionally, this survey provides demographic, housing, social, and economic data similar to the U.S. decennial Census for various geographic areas including census tracts.

The most current year of the Zip Code Business Patterns (2008) is being utilized for the same reason to obtain information on religious and civic organizations in the area. Included in the religious organization classifications are churches, monasteries, religious temples, synagogues, and mosques, as well as organizations that promote religious activities (U.S. Census

Bureau 2011a). The classification code for civic and social organizations captures

establishments that promote the interests of their members, either civic or social, including

various community membership clubs, youth associations, and fraternal lodges or associations

among others (U.S. Census Bureau 2011b). To measure the data at the census tract level, a

conversion to determine which portion of each census tract resided in each zip code was used.

These geographic correlations were obtained from the Missouri Census Data Center. The data

equivalency files available through their website were compiled using the 2000 Census data. By

creating a Master Area Block Level Equivalency (MABLE) file based on census blocks, they

have allowed researchers to convert data from one level of analysis to another with near zero

rounding error. The reason for this is that the U.S. Census Bureau uses "census blocks as their

'atomic unit' for all other census-based boundaries" (Missouri Census Data Center 2011a,

2011b: 2). Because census blocks are the base unit for all aggregations, they typically do not

cross other geographic boundaries such as census tract, city, or county subdivision. However,

census blocks can, and do, cross zip code boundaries and are therefore assigned to specific zip

codes based on the Census Bureau's 2000 Block-ZIP Equivalency file (Missouri Census Data

Center 2011b). To assure the proportions obtained from the correlation list are correct, they are

added together to confirm they sum to one. As an additional precaution, the total population

given for each tract can be compared to the 2000 Census population counts. Once the correct

proportions were obtained for each zip to tract conversion, they were multiplied by the number

of organizations within each tract. The resulting value was used to calculate the civic

engagement measures that are described in Chapter 3.5.

Lastly, the New Orleans Police Department provides crime data accessible to the public

via their website, which was used to collect the 2007 and 2008 crime data (City of New Orleans

2009). Due to technical problems with the site, however, the 2009 and 2010 crime data were

obtained directly from the police department through a public records request (New Orleans

Police Department 2011). Crime data based on the address, intersection, or certain boundaries,

such as neighborhood, council, planning or police district, and zip code, is made available

through the website. The data from both sources were geocoded to the census tract level based

on the address or intersection at which the crime occurred through a two-stage process.

Addresses were first assigned latitude and longitude values, which were used to determine the

census tract within which the address is located. Of the 2,523 total addresses gathered for all

four years, 2,512 (or 99.6%) of all addresses were successfully matched to the corresponding

census tract.

3.4 DEPENDENT VARIABLES

The main dependent variable in this study is the homicide count for each census tract

within Orleans Parish for the years 2007-2010. To supplement the study, the aggravated assault

count and combined homicide and aggravated assault counts will also be analyzed (New Orleans

Police Department 2011). While there are some issues with crime reporting, data on homicides

and aggravated assaults are generally reliable indicators of the level of serious crime. Because of

their violent nature, these crimes are more likely to be brought to the attention of the police than

other nonviolent crimes. Additionally, in the case of homicide, there is little police discretion in

determining whether or not a crime has occurred (Gove, Hughes, and Geerken 1985).

Furthermore, these data are based on reports or calls for service rather than arrest data, which

may give an inaccurate measure of the amount of crime that exists in an area. While there is

discretion in reporting crimes to the police, there is also discretion in making an arrest if and

when a suspect is identified. Aggravated assaults in particular are plagued by low arrest rates.

In 2009, of the 806,843 aggravated assaults reported to the Uniform Crime Reporting program, only 421,215 arrests were made (U.S. Federal Bureau of Investigation 2009d, 2009e). If arrest data were used to measure the incidence of aggravated assault on the national level, nearly 48% of those crimes would not be accounted for in the analysis. By using crimes reported to the police as opposed to arrest data, a more accurate measure of the occurrence of crime is obtained.

3.5 EXPLANATORY VARIABLES

The explanatory variables of interest in this study were chosen based on the civic community perspective outlined above. The measures will capture the economically independent middle class, civic engagement, and local investment at the census tract level.

To capture the concept of the economically independent middle class, a single measure was constructed using the American Community Survey. Self-employment was created by measuring the proportion of all households within a tract that have self-employment income. This measure gives an idea of the number of locally owned businesses that otherwise cannot be measured at the census tract level, as most of this information is only available for higher levels of analysis. Additionally, a measure of self-employment tends to show those in a community who are self-sufficient and are not relying on others for work. These persons would be prime candidates for positions and responsibilities of civic leadership (Mills and Ulmer 1970).

The second component of the civic community framework is a measure of civic engagement, both religious and secular, within the census tract. Because individual-level data are not available to construct a civic engagement measurement, the number of religious and civic associations within each census tract per 1,000 population aged 15 and over is being used as a proxy. Each measure was obtained from the 2008 Zip Code Business Patterns through the process described above. It is thought that the presence or existence of these organizations

should give an indication of the level of engagement of residents, although it is not an exact measurement. Research conducted by Lee and Bartkowski (2004b) and Lee (2008) both show that an index containing a proxy measure for civic associations is related to lower violent crime rates. While most research has not used a proxy for religious organizations, a more specific measure is not available for this study due to the unit of analysis being utilized.

The final component, local investment, is captured through the use of one measure available through the American Community Survey's five-year estimates. The proportion of housing units that are owner occupied in each census tract captures homeownership. Homeownership is thought to measure the stakes residents have within their community. While residential stability is considered to be an additional measure of local investment within the civic community perspective, it is omitted from this analysis for a number of reasons. Given the use of Orleans Parish census tract data, and the American Community Survey, an accurate measure of population stability cannot be fully obtained. The American Community Survey's five-year estimates ask residents if they currently live in the same residence as the previous year. Although this is similar to a typical measure of residential stability, measuring population change over the course of only one year does not fully grasp the idea of population stability. Being located in the same residence for a single year does not necessarily mean there is long-term stability within an area. An additional challenge with this measure is that Orleans Parish was in the midst of regrowth during this five-year period after Hurricane Katrina. While residents were returning, many may have been returning to temporary locations with the intentions of relocating once their own residence was repaired. Given these challenges, it was determined that including this variable as a measure would not accurately depict population stability in the area.

3.6 CONTROL VARIABLES

As with most criminological studies, several potentially confounding factors must be controlled. With regard to this study, measures of resource disadvantage are controlled for because of the known association between them and violent crime rates. To take this into account, measures for the proportion of persons living in poverty, proportion of persons unemployed, proportion of households that are female-headed, proportion of high school dropouts, and proportion of blacks within a census tract will be constructed using data from the American Community Survey's five-year estimates. Furthermore, the age structure of the census tract is controlled for by measuring the proportion of persons 15 to 24 within each tract. This measure was constructed because it is well known that those persons between the ages of 15 and 24 are most likely to be offenders as well as victims of crime (Laub and Sampson 2003 among others). Lastly, the natural log of the population at risk was controlled for to reduce problems with the skewed distribution of the population across census tracts.

3.7 DESCRIPTIVE STATISTICS

Table 1 contains the descriptive statistics for the dependent, explanatory, and control variables. Each dependent variable was converted into a rate for the sake of clarity in reporting these statistics. There were an average of almost 14 total homicide and aggravated assaults for Orleans Parish Census tracts during the four years under consideration and an average rate of just over 259 per 100,000 people per year. The standard deviation for the crime count and rate is 11.35 and 309.13 respectively. When looked at separately, it is evident the majority of crimes examined in this study are aggravated assaults with an average of 10 occurring in census tracts over the four year period and an average rate of approximately 187 aggravated assaults per 100,000 people per year. This finding is expected given the frequency with which aggravated

assaults occur throughout the United States. As is well known, aggravated assaults are the most common violent crime reported each year. With regard to homicide, there is an average count of 3.84 over the four-year period and an average rate of 72.11 per 100,000 people in a census tract per year, which is considerably lower than the occurrence of aggravated assault, but expected due to the "rare" occurrence of homicides. This rate does display, however, the violent nature of Orleans Parish with an average yearly homicide rate almost 14 times the national average.

Additionally, Table 1 provides the descriptive statistics for the main explanatory variables. Measures of the economically independent middle class reveal that on average 11% of census tract households has self-employment income with a standard deviation of .08. Civic engagement measures show that the presence of religious organizations within tracts is greater than civic organizations. On average, there are .93 religious and .29 civic organizations per 1,000 people aged 15 and over with standard deviations of .69 and .38, respectively. Lastly, analysis of local investment reveals that on average 36% of homes within these census tracts are owner occupied.

Descriptive analysis of the control variables shows that on average African Americans comprise 62% of the census tract populations with a standard deviation of .35. Female headed households made up 22% of census tract populations. Additionally, on average 25% of census tract populations live in poverty, 14% are unemployed, and 21% are high school dropouts. Finally those ages 15 to 24 comprise 14% of census tract populations on average. When compared to the nation as a whole, Orleans Parish's rates for these standard control variables are considerably higher with the exception of the age structure measure, indicating it is plagued by many structural disadvantages.

Table 1: Descriptive Statistics

	Mean	Standard Deviation
Dependent Variables		
Homicide Count	3.84	4.13
Homicide Rate*	72.11	101.75
Aggravated Assault Count	10.01	8.02
Aggravated Assault Rate	187.26	233.54
Combined Homicide and Aggravated Assault Count	13.84	11.35
Combined Homicide and Aggravated Assault Rates	259.37	309.13
Explanatory Variables		
Self-employment	.11	.08
Civic organizations per 1,000 people 15+	.29	.64
Religious organizations per 1,000 people 15+	.93	1.04
Owner occupied units (homeownership)	.36	.19
Control Variables		
Black	.62	.35
Female headed households	.22	.20
Poverty	.25	.17
Unemployment	.14	.11
High school dropout	.21	.15
Ages 15 to 24	.14	.10
Ln Population	7.30	.70

*Rates for total population per 100,000 people per year

3.8 PRINCIPAL COMPONENTS ANALYSES

Given the known statistical relationship and high correlation typically associated with many of the variables included in the present study, it is important to determine if any variables need to be indexed in an effort to reduce multicollinearity. Table 2 displays the correlation matrix between both the explanatory and control variables. As is evident, multiple variables are highly correlated with one another. To further test for issues of multicollinearity, Ordinary Least Squares regression models were conducted to generate Variance Inflation Factors. Several scores were greater than 2.5, a conservative estimate of multicollinearity. It was determined, as a result, that multiple variables should be combined into indices to correct these issues.

Table 2: Correlation Matrix of Explanatory and Control Variables

		1	2	3	4	5	6	7	8	9	10
1	Self-employed	1	-	-	-	-	-	-	-	-	-
2	Civic organizations per 1,000 people 15+	-.127	1	-	-	-	-	-	-	-	-
3	Religious organizations per 1,000 people 15+	-.233	.800	1	-	-	-	-	-	-	-
4	Owner occupied units	.459	-.370	-.412	1	-	-	-	-	-	-
5	Black	-.651	-.012	.074	-.424	1	-	-	-	-	-
6	Female headed households	-.458	.442	.520	-.567	.481	1	-	-	-	-
7	Poverty	-.394	.325	.370	-.610	.510	.631	1	-	-	-
8	Unemployment	-.368	-.014	.048	-.360	.549	.343	.521	1	-	-
9	High school dropout	-.453	.085	.209	-.488	.583	.405	.464	.412	1	-
10	Age Structure (15 to 24)	-.212	-.180	-.195	-.050	.214	.010	.192	.266	.002	1

Principal components factor analyses were conducted for the explanatory and control variables as displayed in Table 3. While each variable is conceptually distinct, statistically they may be capturing some of the same variance. In order to account for the common variance and maximize the variance explained in later regression analyses, an obliquely rotated principal components factor analysis was conducted. By combining these variables, it also allows essential core concepts to be more succinctly analyzed. Variables included in the factor analyses were chosen based on their correlations and VIF scores. Those variables included the measures for civic and religious organizations per 1,000 people 15 and over, which were highly correlated as seen in Table 2. Additionally, five control measures – poverty, black, female headed households, unemployment, and high school dropouts – were also included in the factor analysis. Only those factors with eigenvalues greater than one and factor loadings greater than .5 were chosen, resulting in the creation of two factors.

Table 3 displays the factor loading scores for each of two factors created. The resource disadvantage factor includes the proportion of the census tract population that is in poverty, the proportion of the population that is black, the proportion of families that are headed by females, the proportion of the population that are high school dropouts, and the proportion of the population that is unemployed. The creation of this factor is expected as the variables included within it have been shown to be interrelated in previous criminological research (Land, McCall, and Cohen 1990). Each loading score for the variables related to this factor is well above the .5 standard with an eigenvalue of 2.967. The civic engagement factor includes the two measures regarding organizations or associations within the community. The measure of civic organizations per 1,000 people aged 15 and over loaded highly with the measure of religious organizations constructed in the same manner. The factor loading is .949 with an eigenvalue of

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1.8 well above the accepted standards of .5 and 1 respectively. Indices resulting from these

factor analyses were utilized in the regression analyses.

**Table 3: Obliquely Rotated Principal Components Factor Pattern Matrices**

	Factor Loading Scores	
Resource Disadvantage		
Poverty	.818	
Black	.817	
Female headed households	.742	
High school dropouts	.741	
Unemployment	.729	
Civic Engagement		
Civic Orgs per population 15+		.949
Religious Orgs per population 15+		.949
Eigenvalue	2.967	1.8

3.9 SPATIAL AUTOCORRELATION ANALYSES

Ordinary Least Squares (OLS) regression is the technique traditionally used to predict

neighborhood outcomes (such as crime rates) using neighborhood characteristics (such as

resource disadvantage). However, scholars have recently begun using spatial regression

techniques for such models in order to take into account spatial dependence, which is the idea

that observations across space are not independent from one another (Anselin 1988; Sampson,

Morenoff, and Earls 1999; Baller, Anselin, Messner, Deane, and Hawkins 2001). It is important

to consider what spatial effects, if any, there are within this study because of the nature of crime

and the delineation of census tract boundaries. Because census tract boundaries are not concrete

delineations of space, crime experienced in one tract may not be independent of crime that

occurs elsewhere.

To determine if spatial autocorrelation is an issue, the data were analyzed using the

spatial program GeoDa. The first step to deciphering whether or not there is an issue with spatial

dependence is to obtain the Moran's I value and construct a univariate LISA (Local Indicators of Spatial Association) cluster map. According to research standards, any Moran's I value greater than .20 indicates that significant autocorrelation exists (Anselin 1988). A spatial weight variable is required when creating a Moran's I value; therefore a first order rook contiguity weight matrix was generated. This particular weight matrix was chosen because it captured the greatest amount of spatial autocorrelation for each dependent variable. For homicide, the Moran's I value was 0.2186 therefore justifying the use of a spatial weight variable to capture this autocorrelation. Additionally, as seen in Figure 1, the univariate LISA cluster map displays significant clustering among census tracts. This clustering can occur between census tracts that both have high rates of homicide (high-high), low rates of homicide (low-low), or those where the homicide rates for census tracts are opposite those in surrounding census tracts (high-low or low-high).
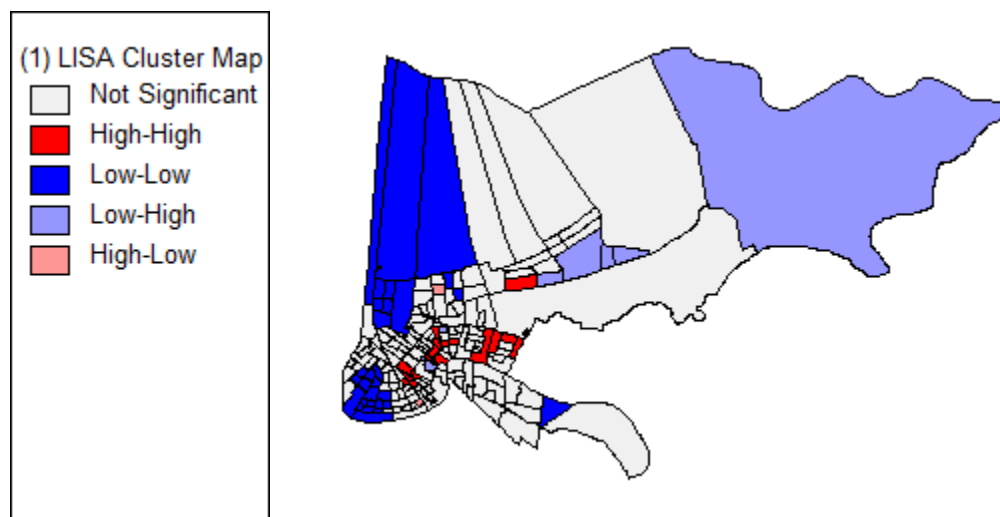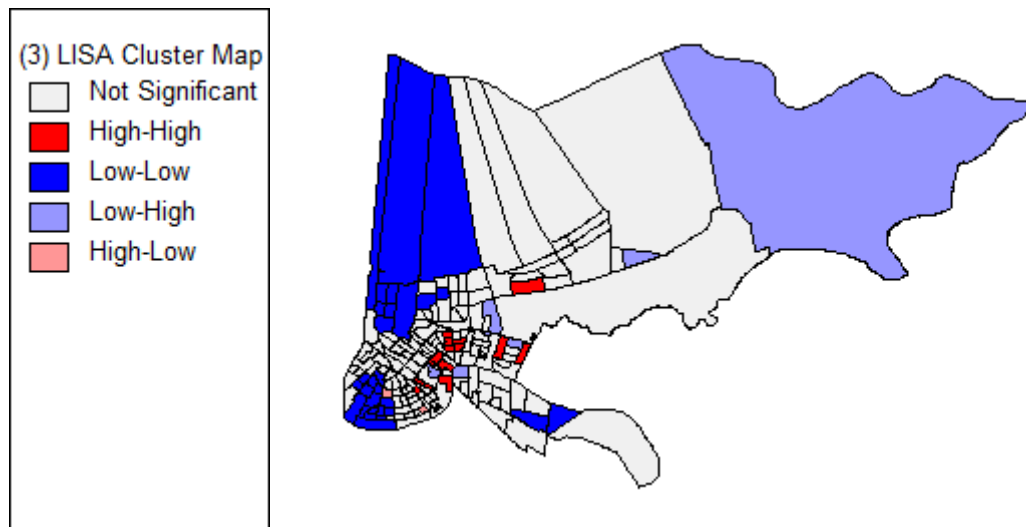

Figure 1: Univariate LISA Cluster Map for Homicide Rates in Orleans Parish Census Tracts

Aggravated assault and the combined homicide and aggravated assault crime rates had a Moran's I value of 0.1719 and 0.2140 respectively, indicating there is significant autocorrelation

for the combined crime rates. While the Moran's I value for aggravated assault does not surpass the threshold of .20, it was still included in further analyses of spatial autocorrelation based on the LISA cluster map shown in Figure 2 and to maintain consistency between models. Figure 3 displays the univariate LISA cluster map for the combined homicide and aggravated assault rates. As with homicide, these maps show significant clustering among census tracts.
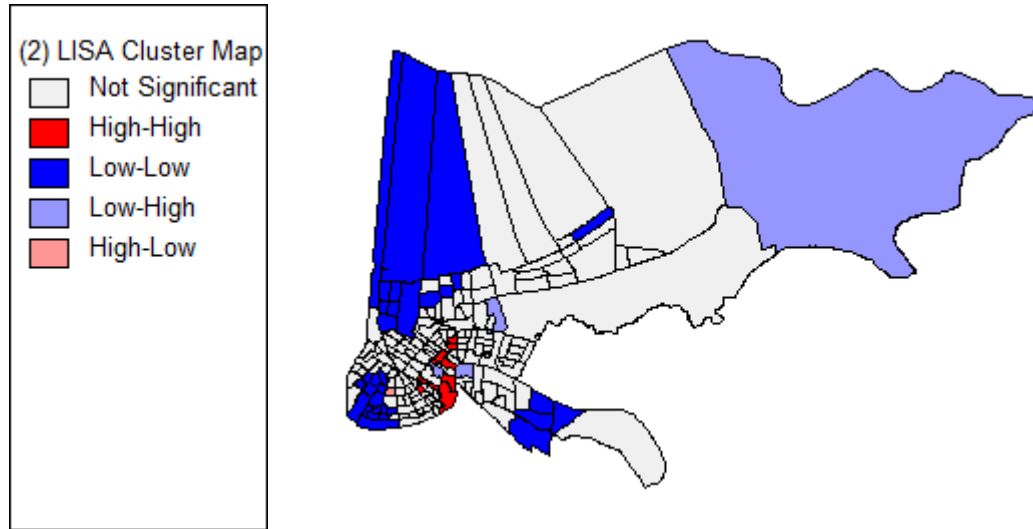
Figure 2: Univariate LISA Cluster Map for Aggravated Assault Rates in Orleans Parish Census Tracts
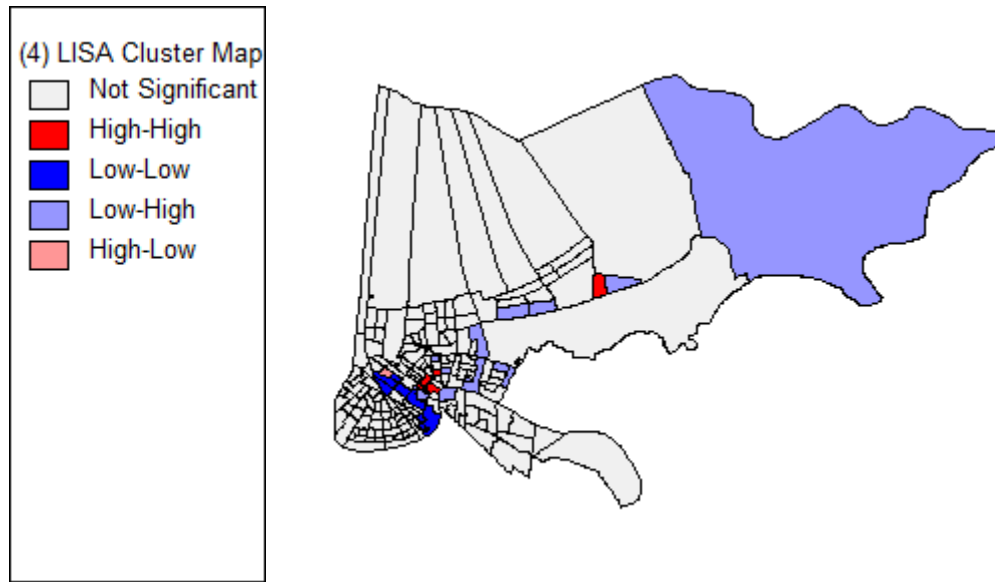

Figure 3: Univariate LISA Cluster Map for Combined Homicide and Aggravated Assault Rates in Orleans Parish Census Tracts

Once the need to correct for spatial dependence was determined, a classic Ordinary Least Squares regression model was run to determine if a spatial lag or a spatial error model would best solve the issue. The use of a spatial lag variable would capture the spatial "effects" or a possible diffusion process whereby "events in one place predict an increased likelihood of similar events in neighboring places, net of the effect of structural covariates" (Baller et al 2001: 566). A spatial error model, on the other hand, captures a spatial "disturbance" whereby "omitted (spatially correlated) covariates . . . if left unattended would affect inference" (Baller et al 2001: 556). Regression results from the Ordinary Least Squares model produced two Lagrange Multiplier values – one for the spatial lag model and one for the spatial error model. The value for the spatial lag model was larger and more highly significant than that of the spatial error model for all dependent variables thereby justifying the use of a lagged variable.

As a result of these analyses, a spatial lag model was run for each dependent variable and the residuals were saved as variables to determine if this model in fact resolved the spatial dependence problem. The Moran's I value of the lag residuals for homicide, aggravated assault, and the combined homicide and aggravated assault rates were 0.0218, -0.0135, and 0.0034 respectively, indicating that the lag model adequately addresses the issue of spatial autocorrelation. As additional evidence, univariate LISA cluster maps were created for each of the residual lag variables. These maps are displayed in Figures 4, 5, and 6 for homicide, aggravated assault, and the combined homicide and aggravated assault rates respectively. Each map demonstrates a significant reduction in clustering between census tracts providing further evidence that spatial dependence can be properly accounted for through the use of a spatial lag variable. Therefore, a spatial lag weight variable was created using the first order rook

contiguity weight matrix for each dependent variable. These weights are carried over into future

analyses to capture the spatial dependence between Orleans Parish census tracts.

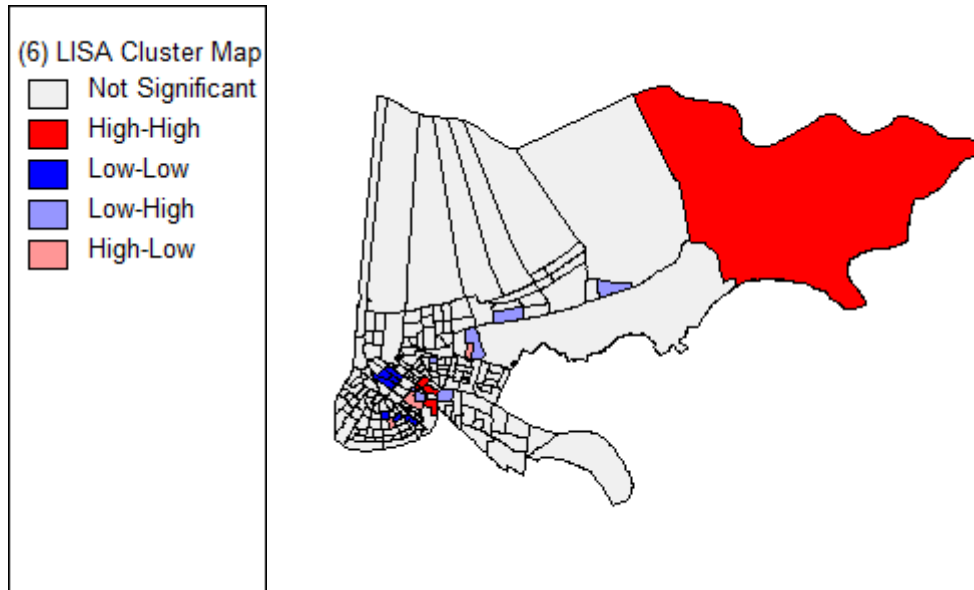**Figure 4: Univariate LISA Cluster Map of Spatial Lag Residuals for Homicide
Rates in Orleans Parish Census Tracts**
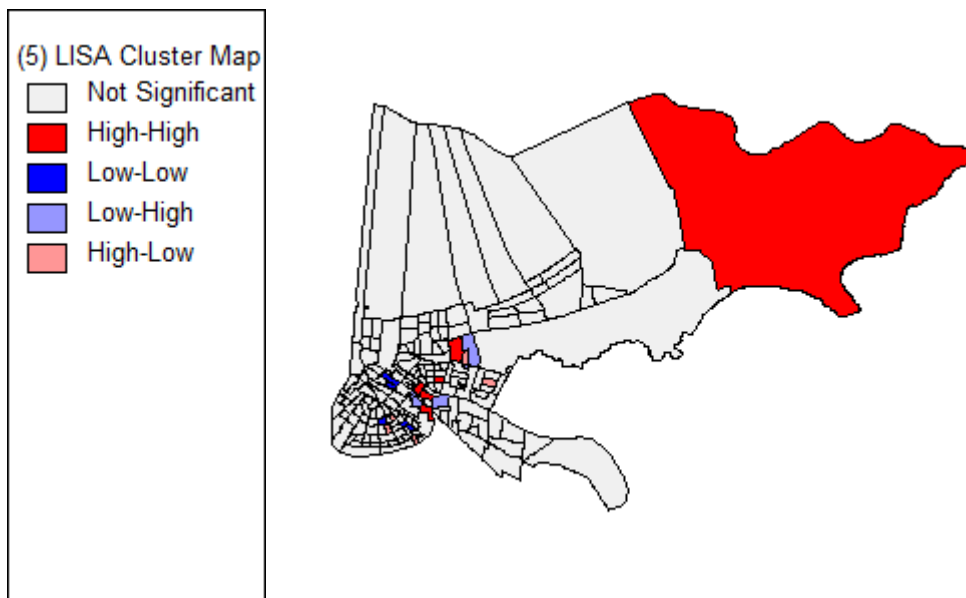
**Figure 5: Univariate LISA Cluster Map of Spatial Lag Residuals for Aggravated
Assault Rates in Orleans Parish Census Tracts**

Figure 6: Univariate LISA Cluster Map of Spatial Lag Residuals for Combined Homicide and Aggravated Assault Rates in Orleans Parish Census Tracts

3.10 NEGATIVE BINOMIAL REGRESSION ANALYSES

Negative binomial regression techniques have been utilized in this study to best measure the effects of civic community on crime rates in Orleans Parish census tracts. Many scholars have recognized the need to employ different statistical methods in cases with an unusually large number of zero observations that can create a non-linear effect (see Osgood 2000; Osgood and Chambers 2000; Long and Freese 2006). Given the statistically rare occurrence of homicide, a large number of census tracts within the current dataset had zero or only one homicide reported over the four year period. Although aggravated assault is not statistically rare, but instead the most common violent crime, it was necessary to determine if this distribution was also heavily skewed. Upon conducting a frequency analysis, it was concluded that the aggravated assault totals, as well as the combined homicide and aggravated assault totals, were also distorted and not normally distributed.

An additional obstacle with these data is that homogeneity of the error variance cannot be assumed because crime rates depend on population size, which varies across census tracts (Osgood 2000). Due to the skewed distribution of each dependent variable and issues of heteroskedasticity of error variance normal regression analyses run the risk of being highly distorted. To correct these issues, regression techniques that do not rely on the assumption of linearity, such as negative binomial regression, must be used.

As further support for the use of negative binomial regression techniques, a likelihood-ratio test to detect overdispersion was conducted to ensure any significant results obtained are not the result of small standard errors. This test produced a significance level less than .001, indicating that overdispersion exists and therefore negative binomial regression techniques should be utilized over a basic Poisson model. Negative binomial regression corrects for this overdispersion by adding a parameter to reflect the "unobserved heterogeneity among observations" (Long and Freese 2006: 372). Subsequently, the negative binomial regression model for this analysis is presented below:

$$\lambda = \exp(\beta_0 + \beta_1 x_{i1} + \beta_2 x_{i2} + \beta_3 x_{i3} + \beta_4 x_{i4}) * \delta$$

Where: λ is the expected crime count (homicide, aggravated assault, and combined homicide and aggravated assault), β_0 is the constant, β_1 is the coefficient for civic engagement, β_2 is the coefficient for local investment, β_3 is the coefficient for the economically independent middle class, β_4 is a vector of the coefficients for control variables, and δ is the exponential of the error term.

In addition to the basic model, two additional model specifications were included – offsetting and robust estimation. While the log of the population is included as a control variable, offsetting the model by this same variable takes into account the differences in the likelihood of a crime (homicide, aggravated assault, or both) occurring. Additionally its use allows the coefficients to be interpreted as rates instead of counts. The second option, robust

estimation, provides robust standard errors thereby adjusting for heterogeneity within the model

(Long and Freese 2006).

CHAPTER 4: RESULTS

4.1 HOMICIDE COUNTS IN ORLEANS PARISH CENSUS TRACTS

Table 4 reports the results for the models predicting homicide counts in Orleans Parish

Census Tracts. In order to determine if there are any mediating effects, the inclusion of variables

was conducted through a series of models. The spatial lag variable was consistently placed

throughout all models in order to control for spatial autocorrelation in each analysis.

Furthermore, by doing so, the results from each model are more conservative as it is more

difficult to attain statistical significance when the lag variable is included.

The first model, Model 1 in the table, included only the three main independent variables

(self-employment, civic engagement, and homeownership) along with the spatial lag variable.

Each of the civic community measures is negatively related to homicide rates. However, only

the measures of self-employment and homeownership display a significant correlation with

homicide rates at the .001 level, lending initial support for Hypotheses 1a and 1c. While in the

correct direction, the civic engagement index does not have a significant relationship.

Model 2 is the full model which displays the prediction of homicide counts with all

independent and control variables included. This model is similar to Model 1 with regards to the

civic community variables. Both self-employment and homeownership are negatively and

significantly related to homicide at the .01 and .001 level respectively, while the civic

engagement index is in the correct direction, but is not significant. For a more detailed

interpretation of the coefficients, it is necessary to determine the strength of these coefficients by

calculating a standardized percent change using the following formula:

$$E(Y|X) = \{\exp{(\beta_k * s_k)} - 1\} * 100$$
Where: $E(Y|X)$ is the standardized percent change in the expected
crime rate (homicide, aggravated assault or both), β_k is the

coefficient for a given independent variable, and s_k is the standard deviation for a given independent variable.

As displayed in the above equation, each unstandardized coefficient is multiplied by their respective standard deviations and the exponential is taken. The resulting value is then converted to a percent and is interpreted as a percent change in the homicide rate for every standard deviation change in the level of each independent variable.[3] Upon calculation, it was determined that a one standard deviation increase in self-employment results in a 19.9% decrease in the homicide rate within census tracts. Additionally, the decrease in homicide rates in relation to a one standard deviation increase in homeownership is 28.6%. These coefficients indicate that as the proportion of households with self-employment income and the proportion of homes that are owner occupied increase, the homicide rates decrease, offering support for Hypotheses 1a and 1c. It is evident that these civic community indicators provide a protective effect against homicide. However, contrary to the prediction made in Hypothesis 1b, the civic engagement index, while negative, is not significantly related to homicide rates.

Additionally, Model 2 reveals that the control for resource disadvantage is positively and highly significantly related to homicide at the .001 level indicating that as resource disadvantage within census tracts increases by one standard deviation, the homicide rate increases by 51.3%. This finding was anticipated considering previous research on the issue has found indices similar to the one created here to be consistently significantly related to homicide in urban areas (see Land, McCall, and Cohen 1990 among others).

Civic engagement was the only civic community component that was not significantly related to homicide. While this lack of significance appears to indicate that its protective effect

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[3] While count data are being utilized in this study, by offsetting each negative binomial regression analysis by the natural log of the population at risk, these standardized percent changes can be interpreted in terms of crime rates instead of counts.

Table 4: Negative Binomial Regression Models Predicting Homicide Counts in Orleans Parish Census Tracts

	Model 1		Model 2		Model 3	
Self-Employed	-4.587***	(0.959)	-2.772**	(1.041)	-2.632**	(0.985)
Civic Engagement Index	-0.084	(0.120)	-0.161	(0.117)	-0.238**	(0.087)
Homeownership	-3.286***	(0.566)	-1.773***	(0.502)	-0.973*	(0.494)
Resource Disadvantage Index			0.414***	(0.114)	0.500***	(0.096)
Age Structure			-0.701	(0.905)	-0.569	(0.837)
Population Size (ln)			-0.392***	(0.112)	-0.209†	(0.114)
Civic Engagement Index x Resource Disadvantage Index					-0.420***	(0.102)
Spatial Lag	0.001***	(0.000)	0.001***	(0.000)	0.001***	(0.000)
Maximum Likelihood R^2	0.497		0.580		0.622	

Unstandardized coefficients reported with robust standard error in parentheses

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

is not observable in urban areas, prior research as discussed in Chapter 2.2 suggests an interactive effect may exist between civic engagement and resource disadvantage. Based on the reasoning provided, additional exploratory analyses were conducted to determine if the effect of civic engagement on homicide varies depending on the amount of resource disadvantage that exists in the community. Upon examination of the change in the strength of coefficients from the base model (Model 1) to the full model (Model 2), it is shown that the negative effect of civic engagement on homicide, though not significant, increased from 8.1% to 14.9% after the inclusion of the control variables. By taking into account the extent of resource disadvantage in a census tract the protective effect of civic engagement became more pronounced while the relative strength and protective effect of self-employment and homeownership decreased.

These exploratory findings suggest an interaction effect may be observed. Standard interaction terms are generally multiplicative in which the two variables thought to co-vary are multiplied together with the resulting product being used to measure the interactive effect. However, when including the interaction term in the model, the results are affected by multicollinearity between it and the component explanatory variables. Creating a residualized interaction term by regressing the multiplicative interaction term (civic engagement X resource disadvantage) onto the component explanatory variables in the interaction (in this case, civic engagement and resource disadvantage) corrects the problem. The component variables become uncorrelated with the interaction term, thereby eliminating issues with multicollinearity and the redundancy that naturally exists when using an unresidualized interaction term without the loss of any valuable information. Additionally, "the estimation of the effects of the component variables is unaffected by the inclusion of the interaction terms" (Delacroix and Ragin 1978: 134).

Model 3 in Table 4 replicates Model 2 but tests the proposed interaction effect between civic engagement and resource disadvantage discussed above.[4] The unstandardized coefficient of the interaction term in Model 3 reveals that where there is more resource disadvantage, the negative effect of civic engagement on homicide rates is stronger. Through interpreting the standardized percent change for the interaction term, it is determined that a one standard deviation increase in the relationship between resource disadvantage and civic engagement results in a 38% decrease in the homicide rate, supporting Hypothesis 1d. Additionally, the effect of the civic engagement index in this final model reveals a negative and significant relationship (p < .01) with homicide in census tracts as predicted in Hypothesis 1b indicating that homicide decreases 21.2% for every standard deviation increase in this index. On the other hand, for each standard deviation increase in resource disadvantage, there is a 64.9% increase in homicide (p < .001). Furthermore, when comparing these percent changes to those calculated in Model 2, it is evident that the strength of the effect of civic engagement and resource disadvantage on homicide rates increased with the inclusion of the interaction term.

Model 3 also reveals that the relative effects of self-employment and homeownership on homicide rates decreases when the interaction between resource disadvantage and civic engagement is introduced. The percent change for self-employment decreased slightly from 19.9% to 19% and that for homeownership decreased from 28.6% to 16.9%, though each retains statistical significance at the .01 and .05 alpha-level respectively.

4.2 AGGRAVATED ASSAULT COUNTS IN ORLEANS PARISH CENSUS TRACTS

Recognizing that most violent crimes committed in urban areas are aggravated assaults, supplementary analyses were conducted to determine if the civic community perspective would

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[4] While the interaction term between civic engagement and resource disadvantage is the only one presented here, interaction effects between resource disadvantage and the other explanatory variables were tested. However, these interaction effects were not found to contribute to the analyses.

be useful in explaining other serious forms of violence. Table 5 presents the results for the models predicting aggravated assault counts in Orleans Parish Census Tracts. As in the previous models, the inclusion of variables was conducted through a series of models to determine if any mediating effects existed. Additionally, the spatial lag variable was consistently placed throughout all models in order to control for spatial autocorrelation in each analysis.

Model 1 in Table 5 presents the baseline model including only the civic community measures. In this model, self-employment and homeownership are both significantly and negatively related to aggravated assault at the .001 alpha-level. Interpretation of the standardized percent change indicates that for a standard deviation increase in the proportion of households with self-employment income in a census tract, aggravated assault rates decrease 17.8%, lending preliminary support to Hypothesis 2a. Additionally, a one standard deviation increase in homeownership corresponds to a 40.1% decrease in aggravated assault rates as expected in Hypothesis 2c. The civic engagement index is found to be negative, but not significantly related to aggravated assault rates.

Model 2 provides the results from the full model concerning the relationship between aggravated assault and civic community measures. This model mimics Model 1 in that self-employment and homeownership retain a negative and statistically significant relationship with aggravated assault, though the strength of these relationships decreased with the inclusion of the control variables. These findings maintain support for Hypotheses 2a and 2c. The decrease in aggravated assault rates that is related to a one standard deviation increase in households with self-employment income is now 14.1% as opposed to 17.8%, decreasing its statistical significance as a result (from $p \leq .001$ to $p \leq .01$). Homeownership's negative effect on aggravated assault rates also decreased approximately 9% to 31% when other factors were

Table 5: Negative Binomial Regression Models Predicting Aggravated Assault Counts in Orleans Parish Census Tracts

	Model 1		Model 2		Model 3	
Self-Employed	-2.450***	(0.607)	-1.899**	(0.636)	-1.962***	(0.604)
Civic Engagement Index	-0.147	(0.100)	-0.293**	(0.101)	-0.515***	(0.084)
Homeownership	-2.700***	(0.377)	-1.952***	(0.316)	-1.517***	(0.312)
Resource Disadvantage Index			0.186**	(0.065)	0.226***	(0.055)
Age Structure			-1.452**	(0.514)	-1.424**	(0.451)
Population Size (ln)			-0.358***	(0.085)	-0.224**	(0.085)
Civic Engagement Index x Resource Disadvantage Index					-0.384***	(0.059)
Spatial Lag	0.001***	(0.000)	0.000***	(0.000)	0.000***	(0.000)
Maximum Likelihood R^2	0.596		0.679		0.723	

Unstandardized coefficients reported with robust standard error in parentheses

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

controlled for in the model, but remains significant at the .001 alpha-level. Lastly, the civic engagement measure gains statistical significance ($p < .01$) in the full model, indicating that a one standard deviation increase in this index results in a 25.4% decrease in aggravated assault rates. This model lends support for Hypothesis 2b which states that civic engagement will be negative and significantly related to aggravated assault rates.

Each of the control variables added to Model 2 is also shown to be significantly related to aggravated assault rates. Resource disadvantage is arguably the most important of these controls. As was seen in relation to homicide rates, this index is positive and significantly related to the dependent variable at the .001 level, indicating that a one standard deviation increase in resource disadvantage results in a 20.4% increase in aggravated assault rates. While the age structure variable also has a significant relationship with the dependent variable, it is not in the expected direction. Most literature regarding the age-crime relationship suggests that as the population 15 to 24 increases, crime rates will also increase. However, the statistical relationship has been difficult to show in previous research so this result was not completely unanticipated.

To maintain consistency between analyses, Model 3 in Table 5 presents the full model with the inclusion of the residualized interaction term. With regard to self-employment, the negative statistical relationship increases to the .001 alpha-level corresponding to a 14.5% decrease in aggravated assault rates for each standard deviation increase. The strength of the negative effect of homeownership decreased further with the inclusion of the residualized interaction term indicating that a one standard deviation increase in this measure results in a 25% decrease in aggravated assault rates. This model also shows that including the interaction term increased the strength of the relationship between civic engagement and aggravated assault. A

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one standard deviation increase in this index is related to a 40.2% decrease in the dependent variable, nearly a 15% rise in the predictive strength.

Furthermore, the predictive strength in the relationship between resource disadvantage and aggravated assault increased to 25.4% with a .001 alpha-level. Taking into account the interactive effects between resource disadvantage and civic engagement shows that in communities wrought with disadvantage, the protective strength of civic engagement against the occurrence of aggravated assault increases providing support for Hypothesis 2d. Interpretation of the standardized percent change indicates that a one standard deviation increase in the relationship between civic engagement and resource disadvantage corresponds to a 35.5% decrease in aggravated assault rates.

4.3 COMBINED HOMICIDE AND AGGRAVATED ASSAULT COUNTS IN ORLEANS PARISH CENSUS TRACTS

As a final analysis, the homicide and aggravated assault counts were totaled for each census tract. While the majority of these crimes are aggravated assaults, important fluctuations in the protective effect of the three main explanatory variables may be seen through this final analysis. It is also not certain that these combined effects are completely attributable to the high counts of aggravated assaults as some of these effects were shown to be stronger in the homicide models. Results are again displayed in Table 6 using the same three-stage process as above with the spatial lag variable being the only variable consistently placed in all models.

Model 1 in Table 6 displays the regression results for the baseline model. As seen with regard to homicide and aggravated assault, both self-employment and homeownership are negative and significantly related to the combined crime rate in these census tracts at the .001 alpha-level. Calculating the standardized percent change indicates that a one standard deviation increase in the proportion of households with self-employment income in a census tract results in

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a 20.9% decrease in the incidence of violent crime as measured in this study. Additionally, the

resulting decrease in crime rates for a one standard deviation increase in homeownership is

42.1% showing that being stable in the community assists in keeping crime down. These results

lend preliminary support to Hypotheses 2a and 2c. Once again, the measure for civic

engagement was negative but not significantly related to the crime rates.

Model 2 displays the full model by including the control variables. Within this model, all

three explanatory variables are negative and significantly related to the combined crime count at

different alpha-levels. Self-employment is shown to be related to a 15% decrease in the crime

rate for each standard deviation increase in this measure, supporting Hypothesis 2a. However,

the inclusion of the control variables decreases the predictive strength of self-employment on

crime by nearly 6% thereby reducing its significance slightly to the .01 alpha-level.

Homeownership also saw a decrease in its predictive strength to 31% but maintained its negative

statistical relationship with combined crime rates ($p \leq .001$) as predicted in Hypothesis 2c.

Though not significant in the baseline model, the civic engagement index gains significance with

the inclusion of the control variables as was seen in Tables 4 and 5. A one standard deviation

increase in civic engagement corresponds to a 23.1% decrease in the combined crime rate,

supporting Hypothesis 2b.

Each control variable is also shown to be significantly related to crime in this model.

Resource disadvantage is positive and significantly related to crime at the .001 alpha-level. A

one standard deviation increase in resource disadvantage results in a 28.9% increase in these

violent crime rates. As for the other control variables, age structure is again significantly related

to crime but in the wrong direction.

Table 6: Negative Binomial Regression Models Predicting Combined Homicide and Aggravated Assault Counts in Orleans Parish Census Tracts

	Model 1		Model 2		Model 3	
Self-Employed	-2.933***	(0.632)	-2.026**	(0.647)	-2.078***	(0.605)
Civic Engagement Index	-0.135	(0.112)	-0.263*	(0.106)	-0.448***	(0.072)
Homeownership	-2.873***	(0.403)	-1.951***	(0.311)	-1.422***	(0.305)
Resource Disadvantage Index			0.254***	(0.068)	0.307***	(0.057)
Age Structure			-1.288**	(0.590)	-1.267*	(0.522)
Population Size (ln)			-0.362***	(0.081)	-0.224**	(0.079)
Civic Engagement Index x Resource Disadvantage Index					-0.383***	(0.062)
Spatial Lag	0.000***	(0.000)	0.000***	(0.000)	0.000***	(0.000)
Maximum Likelihood R^2	0.622		0.707		0.752	

Unstandardized coefficients reported with robust standard error in parentheses
† p ≤ .10; *p ≤ .05; **p ≤ .01; ***p ≤ .001

The final model, Model 3, presents the same data with the addition of the residualized interaction term created from civic engagement and resource disadvantage. The inclusion of this measure resulted in increased statistical significance for self-employment and civic engagement ($p < .001$ for both variables). In the full model, Model 2, self-employment saw a reduction in its significance and predictive strength. The addition of the interaction term, however, shows a slight increase in its predictive strength from 15% to 15.3%. Homeownership maintains its significance at the .001 alpha-level seen in the previous two models. However, this variable is now associated with a 23.7% reduction in the incidence of crime, a decrease of 7.3% in its predictive strength. The last of the explanatory variables, civic engagement, shows an increase in its predictive strength, indicating that a one standard deviation increase in this index results in a 36.1% decrease in crime rates.

The resource disadvantage index also had an increase in its predictive strength when the interaction term was added. A one standard deviation increase in this index results in a 35.9% increase in combined crime rates, a rise of 7%. However, the most important part of this model is the residualized interaction term and what it indicates regarding the relationship between civic engagement and resource disadvantage. As displayed in the previous regression analyses for homicide and aggravated assault separately, the negative protective effect of civic engagement is stronger in those areas that are plagued by higher levels of resource disadvantage. Put simply, as resource disadvantage in an area increases, so too does the negative effect that civic engagement has on crime. Interpretation of its predictive strength shows that a one standard deviation increase in the relationship between the two results in a 35.4% decrease in the combined crime rate, therefore supporting Hypothesis 2d.

CHAPTER 5: DISCUSSION AND CONCLUSION

The civic community perspective advanced criminological literature by providing explanations for what buffers rural communities from violent crime. Within this perspective, three components are offered as explanations for increased community cohesion that results in decreased rural crime rates. First, an economically independent middle class, characterized by local business owners, has a stake in community well-being as the welfare of the community will directly impact the success of one's business ventures. Second, civic engagement offers cohesion through the creation of social networks and social capital which allows residents to come together to solve community problems, including those related to crime. Finally, local investment provides an additional attachment to the community because residents who own their homes represent stability within the community. Those citizens are able to get to know one another and form increasingly important social bonds to and within the community over time. Additionally, like business owners, these residents have an increased stake in community well-being because the investment in their home is affected by the surrounding community (Tolbert, Lyson, and Irwin 1998; Putnam 2000; Lyson, Torres, and Welsh 2001; Lee and Ousey 2001; Tolbert et al 2002; Lee and Bartkowski 2004a, 2004b; Lyson 2006; Lee 2008).

In addition to the standard civic community measures, evidence for a possible interaction between civic engagement and resource disadvantage was offered. While civic engagement is an important component in keeping crime rates at bay, social capital that results from participation within the community is critical in areas experiencing high levels of resource disadvantage (Lee and Ousey 2005). In communities that are financially and social isolated, other forms of capital exist at decreased levels, if at all. Members must therefore rely on their connections to the community not only for their personal well-being, but also for informal social control.

To date, much research regarding the civic community perspective has studied its applicability to rural communities and has failed to adequately explore possible buffers for crime rates in urban areas. Because urban areas are plagued by high crime rates it is important to know not only what causes crime but also what may help communities reduce these exorbitantly high rates. In an attempt to extend the theory, the current research examined whether the perspective holds in urban communities that are similar to rural communities by analyzing data at the census tract level. Hypotheses for how each civic community measure relates to homicide, aggravated assault, and combined crime counts were offered, along with hypotheses regarding the interactive effects between civic engagement and resource disadvantage. Based on the research outlined above, it was posited that each civic community measure would result in decreased rates of crime and that the protective effect of civic engagement would be increased in areas experiencing high resource disadvantage.

5.1 SUMMARY OF ANALYSES FOR HOMICIDE COUNTS

The hypotheses postulated above with regard to homicide counts were supported through the utilization of negative binomial regression techniques. Self-employment and homeownership displayed negative and significant relationships net of the effects of several control variables. Where there are more households with self-employment income and more homeowners, homicide rates are found to decrease by approximately 19% and 17% respectively. These relationships indicate that the protective effects of self-employment and homeownership that research has shown exist in rural communities also exist in urban communities. Additionally, these findings are in line with the civic community perspective, indicating that community cohesion can be developed and maintained through the investment business owners and homeowners make to the community. As these entities become more prevalent in communities,

an increased number of residents are locally invested and concerned with keeping violence from either their livelihood or one of their most prized investments – their home.

Additionally, the models predicting homicide counts also supported the claim that civic engagement provides a protective barrier in urban communities by decreasing homicide rates by approximately 21% for each standard deviation increase in the civic engagement index. Furthermore, it was shown that as levels of resource disadvantage increased, the protective effect of civic engagement became stronger. This interaction indicates the importance of noneconomic social institutions on the development of social capital in areas experiencing deficits in other types of capital. Based on Putnam's (2000) discussion of social capital areas experiencing high levels of disadvantage lack access to human, cultural, and physical capital. As a result, social capital developed through civic engagement becomes increasingly important for social control, which may not be obtained through different avenues. In contrast, those with relatively more resources are also more likely to have access to different forms of capital which may share some of the burden of social control. Access to noneconomic institutions, therefore, becomes necessary in disadvantaged areas as social capital is more heavily relied upon.

5.2 SUMMARY OF ANALYSES FOR AGGRAVATED ASSAULT AND COMBINED CRIME COUNTS

As shown with regard to homicide counts, each hypothesis presented regarding the relationship between civic community theory and aggravated assault counts, as well as combined crime counts, was supported in the negative binomial regression analyses. For these dependent variables, it was shown that net of several control variables, the civic community measures were negative and significantly related to crime measures. These results provide further support for the importance of community cohesion to reduce crime rates. Additionally, the interactive effect between civic engagement and resource disadvantage was found to exist with regard to these

dependent variables as well. These findings lend further support to the notion that social capital fostered through civic engagement is more important in highly disadvantaged communities.

While the civic community perspective was supported for each dependent variable, the reduction in the crime rate was not equal across all scenarios. By noting the strength of each effect on homicide and aggravated assault rates, researchers can gain a better understanding about which measures more effectively protect communities from certain types of violent crime. With regard to self-employment, it was found that the protective effect was 4.5% greater when predicting homicide rates than aggravated assault rates. Both civic engagement and homeownership, however, had greater negative effects when predicting aggravated assault rates. These effects were approximately 19% and 8% higher respectively.

Although not a civic community measure, it is also essential to compare the effect of resource disadvantage on crime because it is a component in the measured interactive effect. Resource disadvantage has a 39.5% higher predictive strength for homicide rates as opposed to aggravated assault rates (64.9% for homicide compared to 25.4% for aggravated assault), indicating that resource disadvantage more heavily influences homicide rates in urban areas. Despite this large increase, the protective effect of civic engagement in areas with high resource disadvantage is still found to work for both types of crime. Moreover, the interactive effect is only slightly greater when predicting homicide rates with a predictive strength 2.5% higher than that for aggravated assault rates. These findings indicate that no matter the individual strength of civic engagement or resource disadvantage, the protective effect of civic engagement is vital to reducing violent crime in areas of high resource disadvantage.

5.3 IMPLICATIONS

There are a number of theoretical implications from this study that should be addressed.

First, the current study provides researchers with insight as to how civic community measures

may help counteract high rates of violent crime in urban areas. By building community cohesion

between residents and business owners alike, communities can more effectively reduce crime

rates. While there are no particular policy implications with regard to community cohesion

(because you cannot force residents to get along or come together to solve community

problems), this study can demonstrate to residents that they have a role in curbing the violence

they live with on a daily basis. Many residents may feel that problems with crime are too tough

to tackle on their own without outside resources. By providing residents with the knowledge that

what they do matters, greater cohesion among community members may be fostered as they

come together to address these issues. As seen in the present study, this cohesion, whether

created through local institutions, self-employment, or local investment, can have profound

effects on local crime rates.

One policy implication is the importance of supporting the return of locally owned

businesses and homeowners to the community. Local policy makers should provide incentives

to encourage owners to return to the area as these residents are beneficial to and necessary

components for a cohesive community. The presence of both has been shown to provide a

significant reduction in violent crime within the parish. As postulated within the civic

community perspective, these owners have a stake in the well-being of the community because it

affects the well-being of their local investments whether it is their business or home. However,

many local businesses have not been able to return to the area due to financial hardships that

make it difficult to rebuild in a slow economy coupled with a decreased clientele as the area's

population has not reached pre-Katrina levels. Homeowners have also been reluctant to return either because of a lack of funds to rebuild or because of the fear that a similar disaster may occur again. This has resulted in a number of dilapidated lots and vacant homes, as well as a lack of informal social control due to the decreased or nonexistent population. Criminals may be drawn to these areas to conduct illegal activities as a result. Additionally, a lack of population in certain areas may keep law enforcement officials from patrolling, resulting in less formal social control as well. Encouraging and supporting the return of these businesses and homeowners would let others know that the local economy is returning and thriving. Furthermore, it would provide an additional barrier to crime because there would be more residents invested in keeping crime rates down.

Additionally, this study suggests that while resource disadvantage is detrimental to communities, maintaining access to local noneconomic institutions in those areas suffering the most economic disadvantage can help residents regulate crime rates. This conclusion was drawn based upon the interactive effect found between resource disadvantage and civic engagement. This finding implies that the negative effects of economic hardship on crime can be somewhat weakened without providing economic equality for all. While economic disadvantage should be addressed in all areas, the issue is not immediately solvable. These disadvantages, particularly in urban areas, are widespread and engrained in communities making them tough to tackle quickly. A short-term solution, however, may be to get residents involved in community affairs and promote civic engagement while long-term solutions are in progress. By doing so, residents can build the social capital necessary to address community problems, including the perpetually high crime rates, that may not be tackled otherwise due to a lack of physical, cultural, or human capital.

Furthermore, the findings in this study reveal that the same factors that buffer rural areas from crime also buffer urban areas from crime. Within the criminological literature, there has been a separation between the urban and rural crime literature based on the thought that two distinct theories were needed to explain violence in each area. By using variables common to the rural crime literature to explain urban violence, the present study has been able to show that important buffers of crime found in rural areas work the same in urban areas when community sized units are utilized. While these findings will not end the debate or discussion regarding the differences between urban and rural crime, it does provide some common ground for researchers to build upon. The overarching theme apparently related to both is that community cohesion, despite the location of the community in an urban or rural area, is increasingly important for community social control and well-being. A new focus for research, therefore, should be on the community rather than the designation of an area as urban or rural. While differences will continue to exist due to the nature of urban and rural communities, focusing on the positives that appear to apply equally to different community types will allow researchers to further flesh out what is most important for community success.

5.4 RESEARCH LIMITATIONS AND AVENUES FOR FUTURE RESEARCH

As expected, there are limitations to the current research project, which allow for improvement upon the study through future analyses. Foremost, the present study utilizes a proxy measure to capture civic engagement within census tracts which did not allow for individual-level analyses of engagement. While much of the civic community research is plagued by this same issue (Lee and Bartkowski 2004a, 2004b; Beyerlein and Hipp 2005; Lee 2008), it is important to note the relevance of measuring actual civic engagement. It may be assumed that both religious and civic institutions can only exist where there is active

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participation but variations in the level of participation and who is participating may provide important insight into the intricacies of how civic engagement works to reduce crime rates. By conducting interviews with local residents, researchers can overcome this obstacle and add to the growing literature on the civic community perspective.

In line with this limitation is the use of census tract level data in general and with regard to the operationalization of variables. While spatial autocorrelation was accounted for in the present study, there is no way of knowing where civic engagement is occurring with relation to where the institution exists or where the individual lives. Citizens are not limited to accessing only those institutions within their designated census tracts. Being able to identify where a person lives as well as which religious or civic organizations they associate with would allow for more precise distinctions of the effect of civic engagement on crime rates.

Additionally, self-employed persons are not limited to working within their census tract and many may operate their businesses from miles away. If an owner lives in one area of the city, but their business is situated in another area, the benefit of having a business owner is being measured in the census tract within which the person resides, not the tract within which their business is located. As a result the benefits of self-employment may not be adequately obtained. A more suitable measure would capture self-employed business owners based on the location of the business as opposed to their residence since the idea behind the local business owner is that he or she is invested in the community to ensure the well-being of their livelihood is not adversely affected by crime rates. To overcome these boundary and data limitations, future analyses could be based off of individual survey information to determine a person's engagement or ownership compared to where they reside. However, to date, this type of data does not exist.

Furthermore, the present study did not examine the effect of population stability on crime rates. While it has been shown to be an important component in explaining crime rates dating back to Shaw and McKay (1942), the American Community Survey was not able to provide an adequate measure. Because the survey was conducted on a proportion of the population every year from 2005 to 2009, it could only ask if residents lived in the same place as the previous year. This measure does show some stability within a population, but not the long-term stability necessary to build social ties to and within the community. Additionally, in Orleans Parish over the five years of the survey, residents were returning sporadically due to the devastation of Hurricane Katrina. As a result, some community members may have been in the same house as the previous year, but not two or more years prior. The use of the 2010 decennial census may have a more suitable measure of population stability that can be used in future research.

In addition to the few suggestions on improving the current study, another area of future research would be to compare the effects found here to those present before Hurricane Katrina. As is evident, Orleans Parish underwent drastic social change due to the 2005 hurricane that destroyed most of the area. In the days and weeks following the hurricane, city leaders and business owners were the first to return, allowing them to reestablish some order to the parish. As residents were allowed back in, several grass roots organizations began to appear to help residents cope and restore their lives. These organizations grew as the number of residents returning increased. The formation of these community organizations may have allowed residents to foster new ties to the community and each other that did not exist before as they came together to rebuild. This does not imply that pre-Katrina residents were not involved in community affairs. Instead, previous attachments may not have been as strong as those

cultivated following the devastation as community cohesion was increasingly important not only for the long-term but for day to day issues residents faced upon returning.

While the present study is able to show how community cohesion influenced crime rates as the area rebuilt following the devastation, a comparative analysis pre-Katrina would be beneficial to the criminological literature by allowing researchers to determine if these relationships existed before the hurricane. If these relationships were not present pre-Katrina, there would be additional implications for this research as it would reveal possible positive effects of rapid social change in the New Orleans area. Additionally, this relationship should be monitored as the parish continues to recover to determine if these effects continue or were just an immediate necessary reaction to an uncontrollable situation. These future analyses would reveal any long lasting effects that may have resulted from the rapid social change that took place. Furthermore, building upon this research would allow other areas affected by natural disasters realize the importance of community cohesion not only for the sake of rebuilding the community, but also for the control of violent crime that may arise when other forms of social control are lacking.

Along similar lines, the criminological literature may benefit from applying the current study to other areas devastated by natural disasters. Recently, there have been numerous natural events that have led to destruction in the United States not seen since 2005, particularly a string of violent weather in several southern states where tornadoes wiped out partial and whole communities and the massive flooding caused by the Mississippi River. As these areas go through the process of rebuilding similar to that seen in New Orleans, researchers can examine if community cohesion maintained or formed as a result of these crises have the same protective

effects against violent crime. Such research would strengthen the argument for the importance of a civic community for crime control even during times of social upheaval.

Finally, changing the scope of the analysis may be a viable avenue for future research. Census tracts are the second smallest boundary created by the Census Bureau. While these tracts are able to capture small "communities" of approximately 4,000 residents, expanding the unit of analysis may provide further insight into community relations. Research has shown that the use of county designations does not reveal the protective effects of civic community theory within urban areas (Lee and Bartkowski 2004a; Beyerlein and Hipp 2005). By utilizing a smaller, more manageable community size, the current study has shown that these protective effects do exist. However, census tracts may be an unreasonably small unit of analysis because residents are not confined to their individual census tract, but instead interact and conduct business with several people throughout the city or parish. An analysis of zip codes would provide a middle ground between the two and may more accurately detail the relationship between civic community measures and crime as larger community sizes are analyzed.

5.5 CONCLUSION

The present research has shown that the protective effect civic community measures provide for rural communities also applies to urban areas when similar community sizes are considered. By examining the direction and significance of each relationship to homicide, aggravated assault, and combined crime counts, support is offered for these protective measures against various types of violent crime. Additionally, close examination of the predictive strength of each individual effect reveals certain measures are more important in reducing different forms of violence. A somewhat unexpected interactive effect between civic engagement and resource disadvantage also provides an additional piece to the puzzle of urban violence. Future

researchers should look to this theory as a sufficient explanation regarding how urban areas can protect themselves from the extremely high violent crime rates they are plagued with on a daily basis.

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