Environmental Factors and School Disorder: The Role of Urbanicity

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Environmental Factors and School Disorder: The Role of Urbanicity

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Master of Arts in Criminal Justice and Criminology

by

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ABSTRACT

Environmental Factors and School Disorder: The Role of Urbanicity

by

Brandon Stewart Coffey

The purpose of this study is to explore the differential impact of various environmental and organizational factors on levels of school misconduct. Although we have a general understanding of this relationship, little effort has been made to determine whether the effects are influenced by urbanicity. The current study utilizes data from the 2007-2008 School Survey on Crime and Safety to address this gap in the literature by utilizing a series of negative binomial regression models that seek to determine differences between predictive factors in urban and rural settings. Results indicate that disorganization has a similar effect within urban and rural schools, increasing counts of misconduct. On the contrary, results also suggest that urban and rural schools, which are already characterized by elevated rates of misconduct, tend to implement different types of security. This study is concluded by discussing methodological limitations, various theoretical and policy implications, and directions for future research.
DEDICATION

This thesis is dedicated to my parents, each of whom have offered unconditional love and support while I have pursued my goals as a soldier and a scholar.
ACKNOWLEDGEMENTS

Throughout the course of developing and completing this project, many people have provided me with the necessary tools to reach the point of writing acknowledgements. First and foremost, however, I must thank my family and friends for their continued support and eagerness to help me achieve my educational goals. There have been times when the amount of work needed to be successful in graduate school has distanced us, but each of you were willing to personally sacrifice our time together in order for me to reach this point, and I can never thank you enough. To my parents, my brother, my sisters, my friends…thank you. Without your presence in my life, this process would have been exponentially more difficult.

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CHAPTER 1

INTRODUCTION

The Problem: Corrections in America

Crime has been an evolving problem in the United States for decades. Although the 1970s and 80s were marked by high rates of violent crime, those rates have steadily declined since the early 1990s (Barker, 2010; Baumer & Wolff, 2014; Rosenfeld & Messner, 2009). Yet, America continues to have the most expansive adult correctional system in the world. A recent digital publication released by the U.S. Department of Justice (2015) reported that approximately seven-million people were under some form of correctional supervision at yearend 2014. This statistic can be interpreted as one (1) out of every 36 adults—roughly three percent of the country’s adult population—being incarcerated, released on some form of parole, or on probation in 2014 (U.S. Department of Justice, 2015).

In light of this fact, it is imperative that criminological research continues to examine various causes of crime and how to rectify said causes. Additionally, this type of research is essential in the development of criminal justice policy used to counter the overpopulation problem that exists within the United States’ correctional system. Although such concerns have trended in recent years and continue to be prominent issues within criminological study (e.g., Guetzkow & Schoon, 2015; Pitts, Griffin, & Johnson, 2014; Ross, 2008, 2012), perhaps a more pressing concern involves younger populations and the factors that play a role in their decisions to commit crime—one of those being their environment. As described by Barnett and Casper (2001), “Human social environments encompass the immediate physical surroundings, social relationships, and cultural milieus within which defined groups of people function and interact” (p. 465). Thus, the physical environment has a meaningful impact in regard to criminality and
behavior in general.

These factors are certainly multifaceted, ranging from parental socialization to peer influence (Hoorn et al., 2016; Pettygrove et al., 2013). However, it may also be useful to devote attention to the role that opportunities play in facilitating criminal or deviant acts through an understanding of the environment that young people occupy. Such investigations are not new to the field, as past research has found that the environment (and opportunities presented within it) serves to condition the likelihood and forms of youth offending (Barnett et al., 2015). Though beneficial, it is also important to consider the potential for the relationship between opportunities and the environment to be influenced by ecological differences. The current study does so by focusing on differences between urban and rural communities—specifically as they relate to the school setting (as schools are central to the lives of young persons).

This rationale is based primarily on the fact that rural communities continue to be an understudied area within criminal justice, especially in comparison to metropolitan areas. Donnermeyer and DeKeseredy (2008) highlight this concern by describing how rural criminology “is still in a state of infancy and requires much more development” (p. 4). This becomes particularly worrisome when taking into account juvenile crime rates in rural communities in recent years. As explained by Spano and Nagy (2005), rates of adolescent violence and crime in rural areas were steadily rising at the beginning of the 21st century. Blackmon, Robison, and Rhodes (2016) highlighted this concern by describing how gender, race, age, and poverty were strongly predictive of encountering the juvenile justice system. More important in regard to the current study, they also reported that on average rural students were significantly more likely to encounter the juvenile justice system than urban students. Even more troubling is the fact that research concerning juvenile delinquency and crime in rural
communities is limited. Though there has been an increase in empirical study concerning rural youth populations since the late 1980s, as stated previously, it is miniscule in comparison to the volume of research concerning juveniles in urbanized settings (Howley & Howley, 2014; Howley, Howley, & Yahn, 2014).

To respond to the various complications associated with the criminal justice and correctional systems in America, a long-term perspective must be utilized. This logic is based on an unfortunate reality, which is that a portion of today’s youth population will indeed become adult offenders. Therefore, research involving juvenile crime and delinquency should be expanded due to the fact that preexisting research regarding adult offenders may not be applicable to juveniles as they progress throughout the life course. In other words, modern criminal justice policy concerning adult offenders may have little to no impact in preventing youths from being inclined to commit crime later in life (van der Laan et al., 2016). Thus, both urban and rural youth populations must become the primary targets of future research.

If one of the missions of America’s criminal justice system is to promote public safety through preventing criminal activity, then determining what factors influence crime and delinquency early in the life course should be a priority (Slobogin, 2013). This accentuates the need to explore how environmental and organizational factors influence crime and delinquency in youth populations. The school setting provides an excellent opportunity to accomplish this task, seeing as how it is typically where youths spend a majority of their time outside the home. However, the process of studying crime and delinquency in school settings is multifaceted. This is because individual school characteristics, as well as community characteristics surrounding schools, may simultaneously impact students’ behavior (Sheldon & Epstein, 2002).

The following review of literature (Chapter 2) seeks to determine if and to what extent
those environmental and organizational characteristics affect urban and rural students. Moreover, the primary focus is to highlight any significant differences in crime and delinquency in the school setting based on urbanicity\(^1\). Though each of these concerns may be examined using separate theoretical frameworks, perhaps an integration of these frameworks could offer a more comprehensive approach in studying behavior within the school setting. In other words, although organizational factors within schools can be examined using social disorganization theory and certain environmental factors can be examined using routine activity theory, it is likely that a combination of the two perspectives could provide a more thorough explanation of the differences in crime and delinquency that exist between urban and rural settings. Prior to discussing these differences, however, it is important to elaborate on one specific issue the United States’ correctional system currently faces, and how this issue will ultimately be impacted by a segment of the current youth population.

**School-to-Prison Pipeline**

The school-to-prison pipeline is essentially a metaphor that suggests delinquent students are being unnecessarily introduced to the juvenile justice system at an early age, as opposed to using more traditional disciplinary techniques (Dunn, 2013; Skiba, Arredondo, & Williams, 2014; Wilson, 2014). As a result, it has been proposed that these students carry an increased risk of maintaining the criminal label that is seemingly being placed upon them (Owens, 2015). This process of “criminalization” has been linked to several modern types of school security measures and policies regarding student misconduct. Some of these include increased police presence in schools, harsh tactics including arrest, and automatic punishment such as zero-tolerance policies (Elias, 2013).

\(^1\) The term “urbanicity” is used as a more efficient alternative way of stating “urban and rural classifications”.

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A somewhat recent development within criminological study is the idea that inequalities within the country’s educational system do not adequately prepare certain youths for life as they work toward graduation, disproportionately affecting minority youths who live in poor communities (Kim, Losen, & Hewitt, 2010). As described by Wald and Losen (2003), on behalf of The Civil Rights Project, the aforementioned inequalities are primarily defined along the lines of race. After describing how America has the most unequal distribution of wealth and income in the world, Wald and Losen (2003) explain how students in high minority schools are generally provided with less resources. This inherently affects administrator’s ability to provide students with quality teachers, curriculum, and courses. This has a direct impact on rates of high school graduation, academic achievement, and attainment of post-secondary education (Christle, Jolivette, & Nelson, 2005).

It is also possible that students in various rural communities could be exposed to the same inequalities and deficiencies, regardless of race. As reported in a recent study by Strange, Johnson, Showalter, and Klein (2012), predominantly rural states provide a slightly disproportionate amount of funding to rural school districts; however, the relationship is said to deteriorate in most states where the percentage of rural students is particularly low (p. 6). In other words, extremely rural school districts with fewer students are likely to receive significantly less state funding. This is not to say that students cannot obtain a quality education in especially rural communities, however, there is an apparent correlation between funding and the ability to provide a superior level of education. These findings are of importance because state funding is used to implement safety measures and establish well-organized academic systems.
In light of these concerns, the current study seeks to determine if and to what extent environmental and organizational factors differentially impact levels of school misconduct across urban and rural communities. The purpose of this study is to determine whether characteristics associated with the school environment have differential effects based solely upon urbanicity. If so, perhaps these characteristics could be addressed separately. This could help support efforts to develop solutions to problems associated with school misconduct that are specific to either urban or rural schools. For example, instead of using one general approach to target problem behaviors in schools, it is possible that using separate approaches based on urbanicity could be more effective at preventing school misconduct. This is because said approaches would be able to focus on specific influences at the individual school level.

There are certainly differences between the types of security concerns and crime that exists in urban and rural communities. This can be seen through examining the research literature concerning a variety of topics, such as homelessness, drug use, and opportunities to commit various types of crime (Keyes et al., 2014; Schafer & Giblin, 2010; Tsai, 2015). Thus, it is possible that these matters could have a differential impact on levels of school misconduct, as well. In other words, seeing as how there are considerable differences between the types of crime and social issues that exists in urban and rural communities, it is possible that these issues could exists in a similar fashion within schools in the these types of communities.

Ultimately, the school-to-prison pipeline, along with the American correctional system, could experience significant positive changes resulting in widespread improvements in functionality and equality throughout the criminal justice system. Although this proposal may seem rather optimistic, it is logically sound and offers a partial resolve to some of the current
problems within the criminal justice system in America. Regardless, one thing is certain: without an attempt to mediate and correct the aforementioned problems, the “system” will continue to fail and disproportionately affect certain subgroups within the larger population. That being said, it is important to give a brief description of the theoretical frameworks being utilized within the current study.

**Theoretical Perspectives**

There are two theoretical perspectives guiding the current research: social disorganization theory and routine activity theory. Social disorganization theory essentially reasons that certain environmental characteristics—ethnic heterogeneity, economic deprivation, and population mobility—are predictive of disorganization within society (Shaw & McKay, 1942). Thus, the current study uses measures of these three characteristics as they relate to academic settings, including: percent minority students, percent limited-English proficient students, crime levels in the communities surrounding schools, school size, percent daily attendance, and the extent to which limited funding negatively impacted the ability to control and prevent crime. Research has provided empirical evidence to suggest that these characteristics are strongly associated with elevated crime rates, especially in metropolitan areas (Braga & Clarke, 2014; Lynch & Boggess, 2016). It is important to note, however, that several researchers have questioned the use of social disorganization theory in studying rural communities (e.g., Kaylen & Pridemore, 2013a, 2013b; Wells & Weisheit, 2004, 2012). As such, this concern is thoroughly discussed in the following chapter, along with a more in-depth discussion of support for using social disorganization to study school misconduct, in general.

As for routine activity theory, it falls within the larger array of opportunity theories (Weisburd, Groff, & Yang, 2014). This is because rather than focusing on the offender, it
examines how certain social situations are more likely to result in victimization due to increased opportunities to commit crime. Cohen and Felson (1979) explained that in order for crime to occur, three things must be present: (1) a suitable target; (2) a motivated offender; and (3) the absence of a capable guardian. In other words, a target and an offender must converge in space and time in the absence of guardianship in order for crime to occur. In the current study, guardianship is measured using various forms of school security, including metal detectors, cameras, and school resource officers to name a few. There is a plethora of research supporting the use of various types of school security as measures of situational crime prevention, which is thoroughly rooted in routine activity theory (Clarke, 2010; Cullen & Chouhy, 2016; Felson & Boba, 2010; Matthews, 2014). The following chapter also offers a more in depth discussion of this framework and its use in studying student misconduct and school misconduct.

Limitations

Before advancing, it is important to highlight several limitations within the current study. Limitations often involve problems associated with some form of validity. Internal and external validity are necessary provisions in all types of research. Internal validity ensures that the quality of the conditions under which a study takes place are acceptable. In other words, internal validity addresses issues such as contextual integrity, purity, controls, and precision. Pertaining to survey research, a lack of contextual integrity allows certain uncontrolled factors (e.g. instrument invalidity, investigator bias, etc.) to influence findings in such a way that they could become misrepresentative.

In the current study, the ability to accurately and precisely measure levels of school misconduct is extremely important in determining the actual significance of independent measures in relation. Reliability analyses control for this concern by ensuring that the dependent
measure of school misconduct accurately represents what is being inferred upon it. However, one threat to validity that cannot be easily controlled for is the fact that respondents can provide false information. It is possible that this could be even more prevalent within the current data considering principals and school administrators may choose to provide false information regarding crime rates within their respective institutions.

As for external validity, it allows findings from sample statistics to be generalized across the larger population. In the current study, the ability to generalize findings to schools across the United States was ensured through stratified random sampling. Although each stratum was chosen based on its perceived importance, the sample schools within said strata were randomly selected. Thus, problems associated with external validity are not of great concern because each type of school was evenly and randomly selected.

Lastly, the foremost limitation within the current study is the fact that there was no measure of school misconduct prior to the implementation of various security measures. As described in Chapter four, this leads to findings that suggest increases in school security lead to increases in levels of school misconduct. It is more likely, however, that security measures were implemented to control for high levels of preexisting school misconduct. Regardless, it is still possible to examine differences regarding security measures throughout urban and rural schools.

Summary

Having provided an overview regarding the purpose of the current study, relevant theoretical perspectives, research hypotheses, and methodological limitations, the following chapter will discuss the current state of research literature in relation to the two theoretical frameworks being used to analyze the relationship between school misconduct and various environmental influences. Chapter three will provide a full summary of the data, data collection
process, and methodology within the current study. Chapter four will provide a full description of results from the univariate, bivariate, and multivariate analyses used to test each of the research hypotheses being examined. Lastly, Chapter five discusses significant findings and reexamines limitations, policy implications, and provides directions for future research efforts.
CHAPTER 2

REVIEW OF LITERATURE

Introduction

This chapter highlights the process of theoretical integration, provides an overview of social disorganization theory and routine activity theory, and summarizes the research literature regarding how these two theoretical frameworks may be used to explain various types of school misconduct. It is important to note, however, that the current study does not necessarily attempt to “integrate” the relevant theoretical perspectives. Instead, it concurrently utilizes each theory to explain school misconduct incidence. In addition, this chapter discusses general levels of support for using each of the relevant criminological theories in examining school misconduct in either urban or rural communities. As can be seen throughout the following discussion, there is support for such methodology.

Theoretical Integration

To provide a more comprehensive explanation of crime throughout communities characterized by different levels of urbanization, an integration of social disorganization theory and routine activity theory has been established in the literature. Several pieces of research have made such advancements in the past with a certain degree of success (e.g., Andresen, 2006; Gottfredson, McNeil, & Gottfredson, 1991; Rice & Smith, 2002; Sampson & Woolridge, 1987; Simcha-Fagan & Schwartz, 1986). Integrating these two perspectives simply requires one to establish a set of empirically supported propositions that interrelate the main concepts within a given number of theories (Smith, Frazee & Davison, 2000). Although this idea seems rather straightforward, in practice it tends to be somewhat difficult without some guiding principle. As such, there are various techniques that can be used to assist in the process.
As it relates to the current study, one of the primary methods used to develop theoretical propositions, thereby promoting integration, is to specify how certain concepts within a given number of theories are characteristic of one another (Elliot, Huizinga, & Ageton, 1985). In other words, one must illustrate how certain concepts overlap. For instance, over the last several decades research has consistently illustrated that socially disorganized communities have a propensity for elevated crime rates (e.g., Lowenkamp, Cullen, & Pratt, 2003; Sampson & Groves, 1989; Veysey & Messner, 1999). These crime rates can be partially attributed to social instability which, according to Shaw and McKay’s (1942) social disorganization theory, is caused by increased population transience, economic deprivation, and ethnic heterogeneity in metropolitan areas. However, the routine activity approach regarding criminal behavior is not so different from the social disorganization framework in the sense that it is based on the influence of environmental factors in structuring the incidence of crime (Smith, Frazee, Davison, 2000).

According to Cohen and Felson (1979), crime is more likely to occur when motivated offenders and suitable targets converge in space and time. In other words, the opportunity for crime to transpire is presented when these individuals or objects come together. That being said, Cohen and Felson (1979) also posit that capable guardianship must be absent for a given crime to take place. In other words, crime cannot occur if there is someone or something present to deter the motivated offender. Based on this philosophy, it is somewhat apparent as to how routine activity theory and social disorganization theory are compatible. Each is spatial in nature and describes how less suitable environments have positive influences on criminal behavior.

Another technique commonly used to establish theoretical integration involves illustrating how a combination of two or more theories extends the applicability of an overall perspective, which inherently increases its ability to predict the social phenomenon at hand.
For example, one may conclude that rates of school misconduct are dependent upon individual school characteristics (e.g., the use of school resource officers, security cameras, metal detectors, after-school programs). The influence of these characteristics can be explained utilizing a routine activity approach because they are able to provide guardianship within a given school environment. They also act to deter those who would otherwise be motivated to commit crime by limiting the opportunity to commit criminal acts. As a result, these characteristics may diminish the overall risk of suitable targets being victimized.

It is also theorized, however, that school misconduct may be partially related to community characteristics surrounding schools—primarily elevated crime rates. Several studies have suggested that crime has the ability to “spillover” into a given school from the outside community (Bowen & Van Dorn, 2002; Weiner, Lutz, & Ludwig, 2009). In other words, crime simply finds its way into certain schools because there is an abundance of criminal activity in the surrounding area. As described by Chen (2008), schools are often perceived as extensions of the community, and it has been postulated that crime rates within said communities are linked to school crime (Anderson, 1998; Bowen & Bowen, 1999; Mateu-Gelabert, 2003). Social disorganization theory suggests that elevated crime rates in such areas are caused by a lack of organization and stability (Browning, Dietz, & Feinberg, 2004). Therefore, combining routine activity and social disorganization theory could provide a better understanding of the factors that influence school-level disorder.

Expanding on the previous point, certain schools that are located in disorganized communities—primarily those stricken by crime and poverty—are less likely to have the necessary funding required to implement various security measures (Baker, Sciarra, & Farrie, 2010; Payne & Biddle, 1999). As explained by Cheurprekobkit and Bartsch (2005), the use of...
video surveillance and metal detectors can be excessively costly and may not be feasible within schools that are financially restricted. Conversely, institutions located in more affluent urban communities are likely to have financial assistance, which increases administrators’ ability to incorporate security measures at their institutions. Additionally, according to Wilson and Kelling (1982), the creators of broken windows theory, there is less disorganization and crime within model communities. Therefore, the probability that routine activities will result in being victimized is significantly less. This is because the normal daily activities of members within these communities do not entail as many risky behaviors (Forde & Kennedy, 1997).

Although social disorganization theory was originally developed in response to issues present in large metropolitan areas, as described above, it can also be used to study organizational factors within individual school settings (Bradshaw, Sawyer, & O’Brennan, 2009). Accordingly, factors such as racial composition, student mobility, and poverty rates within schools themselves—all comparable to the fundamental aspects of social disorganization theory—can be used to develop an understanding of school-level disorder. In a recent study by Bradshaw, Sawyer, and O’Brennan (2009), social disorganization was used to examine bullying-related attitudes and behaviors in approximately 100 elementary and middle schools. Results indicated that student-teacher ratio, concentration of student poverty, suspension rate, student mobility, and ethnicity were all significant predictors of bullying-related attitudes and behaviors. Although bullying does not necessarily reflect criminal inclination, it does highlight the importance of examining social disorganization factors when studying crime and disorder in school populations.

In summary, social disorganization theory and routine activity theory may be partially integrated, or at least simultaneously used, depending on the subject matter. Combining the main
aspects of each theory helps to provide a more comprehensive explanation of crime in terms of exploring the impact of the environment and organizational factors in school settings. However, a serious limitation is that this integration still fails to recognize the fact that preexisting community characteristics, such as urban and rural classifications, may actually structure the effects of related variables on crime and delinquency in school settings. Throughout criminological study, copious amounts of research has focused solely upon crime within urban and sub-urban populations (Chilenski, Syvertsen, & Greenberg, 2015; Kaylen & Pridemore, 2012). This could be related to the fact that increased population density has been associated with higher crime rates; although, research has provided mixed results regarding this phenomenon over time (Danzinger, 1976; Harries, 2006; Roncek, 1975). Regardless, comparatively little research focuses specifically on juvenile crime in rural locations.

This lack of research may be partially attributed to the misconception that the effects of social disorganization are more apparent within urban communities. This lack of research may also be related to the possibility that there are more opportunities to commit crime in such areas, as there may indeed be more offenders as well as attractive targets in metropolitan areas (Browning, Dietz, & Feinberg, 2004). That being said, it has also been suggested that increased population density may decrease crime rates because such areas offer natural surveillance which acts to prevent crime (Harries, 2006). Based on this discrepancy, the need to study densely-populated areas has been emphasized over time. An additional point in regard to quantitative methodology is that sample size is not hindered by the relative scarceness of participants that may be encountered in rural settings. As a result, this possibility has also reinforced the tendency to study urban populations rather than their rural counterparts.

Regardless of these considerations, it is still important to compare and contrast crime
rates in urban and rural areas while recognizing the fact that the relevant populations within each area will vary considerably. In other words, although less crime occurs or is believed to occur in rural locations, it does not necessarily mean that less crime occurs in proportion to the population in those areas (Weisheit, Falcone, & Wells, 1994). In light of this fact, several researchers have stressed the importance of studying crime in rural America over the last several decades (e.g., Laub, 1983a, 1983b; Smith & Huff, 1982; Swanson, 1981; Weisheit et al., 1995). This is especially true regarding crime and juvenile delinquency in rural areas due to the fact that less is known about rural juveniles’ tendencies toward crime (Osgood & Chambers, 2000).

To date, relatively few studies have acknowledged or thoroughly examined the notion that crime and delinquency rates in schools may be impacted differently based on rural and urban classifications (Chen, 2008). Furthermore, none have examined the relationship using an integrated approach by combining aspects of social disorganization and routine activity theory. This is a serious empirical gap within the research literature due to the fact that each subcategory of urbanization comprises a variety of unique environmental influences that may affect individual motivations to commit crime. Simply put, relatively little is known in regard to the effects of urban and rural classifications on school crime.

This lack of research brings about several important questions that can be answered using social disorganization and routine activity as theoretical foundations: (1) Are there any differences in rates of crime and delinquency between urban and rural schools? (2) When controlling for certain characteristics, does the school environment (e.g., the routine activities within schools) affect crime rates? (3) And lastly, do elements of social disorganization within urban and rural schools differentially affect students’ delinquent behavior? These serve as the primary research questions that the current study seeks to answer. A review of the current
research literature regarding social disorganization and routine activity within schools will set the stage for doing so.

**Social Disorganization Theory**

Throughout the Middle Ages and up until the mid-1700s, many criminologists reasoned that crime was distinctly related to the individual by way of spiritualism (Baker & Booth, 2016). In other words, crime was believed to be the result of conflict between absolute good and evil. It is widely accepted, however, that early religious theories failed to fully recognize the fact that societal influences play a significant role in generating crime. This also true regarding biological theories of the late 1800s, especially considering the distinguished 1876 work of Cesare Lombroso in *The Criminal Man*. Lombroso reasoned that criminals were atavistic people that could be identified by physical characteristics, such as bone structure and body type (Lombroso, Gibson, & Rafter, 2006). By the early 1900s, however, several new theoretical perspectives were beginning to emerge which shed light on the idea that societal structure and physical location may actually influence criminal behavior.

Robert Merton’s (1938) theory of anomie suggested that social structure or social class and the pursuit of the American dream resulted in strain, or as he called it, *anomie*. Merton believed that crime and deviance were the result of individual attempts to cope with or adapt to the inability to attain economic success. With that said, the applicability of Merton’s theory of anomie was limited and little empirical evidence existed to support its application on a broader scale. During this same time period, a similar approach was emerging from a separate school of thought—the Chicago School (Shaw & McKay, 1942). Unlike Merton’s work, this approach focused particularly on the spatial distribution of crime across urban communities. Instead of suggesting that crime was merely the result of social structure, this perspective posited that
physical location also influenced crime. Clifford Shaw and Henry McKay were the American sociologists primarily responsible for developing this rationale in the United States. Their work concentrated on juvenile delinquency within the Chicago area, and their research was largely based on the work of Robert Park and Ernest Burgess who developed concentric zone theory in 1925. This theory was founded on the idea that industrialization, urbanization, and immigration influence how cities develop over time.

Burgess (1925) reasoned that as cities expand and population grows, a series of concentric zones begin to form that can eventually encompass an entire city. Five such zones were identified: the loop, the zone in transition, the zone of workingmen’s homes, the residential zone, and the commuter’s zone. Park and Burgess described that the outer limit of each zone was determined by fluctuations in succeeding exterior zones. These fluctuations were believed to be the result of urban residents vacating inner zones in hopes of establishing a place of residence within the suburbs. This constant process of invasion, dominance, and succession resulted in undesirable characteristics within certain parts of the city. Inner zones, particularly the zone in transition, were more likely to suffer from disorganization and dilapidation because it experienced the highest rates of population mobility. In other words, people were continuously moving in and out of this zone, rendering formal and informal social control somewhat difficult to achieve.

Upon testing the applicability of concentric zones theory, Shaw and McKay (1942) analyzed data on juvenile court cases within the city ranging from 1900 to 1933. Their findings aligned with earlier predictions. Delinquency was not normally distributed throughout the city; it was in fact consolidated within the zone of transition. According to Shaw and McKay (1942), delinquency was more prevalent in areas characterized by economic deprivation, population
transience, and ethnic heterogeneity. As a result, they explained that increased levels of disorganization were conducive to crime and delinquency. Although Shaw and McKay never actually defined social disorganization within their work in 1942, an essential point to take away from their research is that delinquency was not inherently linked to any certain type of individual. Instead, it was believed to be dependent upon the environment—one characterized by poverty, residential mobility, and racial heterogeneity.

Building upon Shaw and McKay’s work, Edwin Sutherland (1947) developed what came to be known as differential association theory. Sutherland’s work suggests that areas with higher crime rates are not socially disorganized, but rather organized in manner that supports the cultural transmission of values that look favorably upon criminal behavior. As a result, individuals who live in these areas are believed to learn said values and techniques used to commit crime via peer associations in close-knit groups. Although Sutherland’s (1947) theory focused on the social learning processes that support criminal behavior, which is quite different from Shaw and McKay’s, it was not developed as a replacement for social disorganization theory. Each of these theories acts to supplement one another, and both continue to serve as the primary theoretical foundation of modern research agendas.

In recent years, however, various researchers have suggested that crime is the partial result of inadequate social networks—or a lack of collective efficacy—that exists within certain communities (e.g., Reisig & Cancino, 2004; Sampson, Morenoff, & Earls, 1999; Sampson & Raudenbush, 2001; Taylor, 2001). Collective efficacy refers to the ability for members of a given community to establish control over the behavior of members within said community. In an ideal setting, this informal social control functions to create a safe and organized environment free of crime. In other words, from a social disorganization perspective, crime can be partially attributed
to a lack of collective efficacy, which is caused by increased transience, ethnic heterogeneity, and poverty that is limited to certain communities. Thus, collective efficacy can be viewed as a sort of natural progression of social disorganization theory, and one that better specifies the mediating mechanisms between structure and offending.

Yet, the question remains: how does disorganization within society actually impact youths’ behavior on a more profound level? Ultimately, social control plays a crucial role. For example, in more affluent communities, children and teens are closely supervised and monitored by their parents, guardians, and other social institutions. Delinquent behavior can be quickly recognized and addressed accordingly. In contrast, youth populations within inner cities or zones of transition have less positive guidance. Social institutions (e.g., families, schools, churches, etc.) are “strained” to such an extent that they cannot offer the necessary guidance or *social control* that would otherwise produce desirable behavior. “Strained” can be interpreted as a state of brokenness or irregularity. In other words, social bonds are weakened to such an extent in disorganized communities that residents are unable to take collective action in an effort to reduce crime and promote socially acceptable behavior.

Although social control is the primary determinant of delinquent behavior within the social disorganization perspective, Shaw and McKay (1942) also discussed the effects of culture and how it was able to produce criminogenic attitudes. This rationale was eventually adopted and can be clearly seen in the work of several strain theorists throughout the 1950s and 1960s (Cloward & Ohlin, 1960; Cohen, 1955). Thus, it has been argued that Shaw and McKay’s original theory was not exclusively rooted in social control (Kornhauser, 1978). Shaw and McKay (1942) explained that communities characterized by crime and delinquency often resulted in competing and conflicting values. It was held that this state of moral confusion could
result in the idea that criminal behavior provides individuals with a sense of power, thus reinforcing criminal lifestyles.

Shaw and McKay (1942) believed that criminal careers could become viable options for adult offenders in high-crime areas. An additional point is that youths who associate with said adult offenders are more susceptible to that same way of life. As explained by Shaw and McKay (1942), “This contact means that the traditions of delinquency can be and are transmitted down through the successive generations of boys…” (p. 174). However, the cultural transmission of deviance had been hypothesized long before. Over a decade earlier, Shaw (1930) described the process of culturally transmitted values through social learning in his book *The Jack Roller*. In this work, Shaw detailed the life of a young, inner-city delinquent and the social inequalities that influenced his criminality.

Elijah Anderson’s (2000) work in *Code of the Street: Decency, Violence, and the Moral Life of the Inner City* further describes how the cultural transmission of deviance legitimizes criminal livelihoods as valid options for certain individuals. In his book, Anderson describes how a desire for respect influences the behavior of young adults and their instinct to survive. In other words, the manner in which people present themselves (e.g., language, clothing, behavior) can have life-or-death consequences on a daily basis. Ultimately, his work examines the “code” and the need to appear “tough” in response to a lack of employment, the stigma associated with race, widespread drug use, alienation, and an overall lack of hope in low-income minority communities (Anderson, 2000). Regardless of this cultural expansion of the theory, the scope of social disorganization’s applicability has recently been brought into question.

Although social disorganization theory was originally intended to explain crime in urban areas, as described in *The Jack Roller* and *Code of the Street*, several pieces of research have
questioned whether the theory can predict similar patterns of delinquent behavior in rural areas (e.g., Bouffard & Muftić, 2006; Kaylen & Pridemore, 2011; Osgood & Chambers, 2000). Although the idea of concentric zones may not be applicable in rural settings due to a lack of centralized business districts, the characteristics of disorganized communities could still be somewhat relevant. Poverty, population mobility, and ethnic heterogeneity are now pertinent concerns in various rural communities. Bearing in mind the timespan between the theory’s original conception and the modern era helps to emphasize this point. Considering the effects of recent advancements in technology, the repercussions of the civil rights era, widespread industrialization, and other significant cultural changes, it is foreseeable as to how elements of social disorganization have expanded beyond urban America. As such, it is necessary to review the current state of literature regarding its broadened application.

**Social Disorganization and Rural Crime**

According to the U.S. Census Bureau in 2010, citizens living in rural America represent approximately 20 percent of the country’s total population. In light of this fact, it is important to study the causes and effects of crime in rural settings. Weisheit and Donnermeyer (2000) reasoned, “The study of rural crime has the potential to make important contributions to crime policy, criminological theory, and research methods in criminology” (p. 309). Although this provides insight as to why studying rural crime is of such importance, a reoccurring theme within criminology is that few theories offer comprehensive explanations regarding why crime occurs in rural areas.

Theory provides a basis for methodology within empirical study, and with no guiding principle, developing research models to study rural crime presents a unique dilemma. To date, several of studies have utilized a social disorganization approach. Although, according to
Donnermeyer (2007), “…any approach to the study of rural crime [should] begin by throwing out the idea that social disorganization explains crime” (p. 2). Based on this opinion, using a social disorganization framework to study rural crime seems impractical. However, past research grounded in this perspective has provided fairly supportive results.

Lee, Maume, and Ousey (2003) examined differences in homicide rates in urban and rural communities. Their purpose for this study, along with several others, originated from the idea that “urban bias” had limited the understanding of violence in nonmetropolitan areas. This rationale had actually been suggested over two decades earlier in the work of Glenn and Hill (1977), in which they stated, “Due to such influences as standardized education, improved means of transportation…and saturation of small towns and the countryside…rural people become almost indistinguishable from their city cousins” (p. 37). Based on this logic, social disorganization theory appears to be applicable in rural settings.

The findings of Lee, Maume, and Ousey (2003), along with the findings of Petee and Kowalski (1993) and Lee (2008), support the notion that certain elements of social disorganization can be used to at least partially explain violent crime in rural America. Lee, Maume, and Ousey (2003) found that socioeconomic disadvantage has a significant impact on homicide rates in metropolitan and nonmetropolitan areas. Additionally, Petee and Kowalski (1993) and Lee (2008) found that measures of residential stability, financial stability, and civic engagement were highly correlated with lower rates of violence. In light of these findings, it appears that the structural differences that were once believed to exist between urban and rural communities have dissipated to such a degree that social disorganization could affect these types of communities in a similar manner.

In a landmark study, Osgood and Chambers (2000) made an attempt to further extend the
applicability of social disorganization to juvenile violence in non-metropolitan areas (Kaylen & Pridemore, 2011). They reasoned that social disorganization theory was based on community organization and could be applied to all types of community settings, including the rural environment. Focusing on juvenile arrest rates, their findings revealed, “juvenile violence was associated with increased rates of residential instability, family disruption, and ethnic heterogeneity” (Osgood & Chambers, 2000, p. 81). These results provide support for the use of the social disorganization framework to explain violent crime in rural America. Although results did show that poverty and juvenile violence were not significantly related, Osgood and Chambers (2000) remained adamant that their findings still aligned with social disorganization theory because low socioeconomic status was negatively related to residential instability. In other words, their findings showed poverty became less influential as population transience increased. Based on these results, according to Osgood and Chambers, the lack of correlation between poverty and juvenile violence was somewhat expected.

Drawing upon their work, Bouffard and Muftić (2006) and Barnett and Mencken (2002) examined violent and property crime rates in non-metropolitan areas. Using a sample of 221 rural counties from the Midwest region of the United States, Bouffard and Muftić (2006) employed a series of over-dispersed Poisson regression models to determine whether social disorganization was generalizable across geographic location and offense type. Results indicated that social disorganization does in fact explain geographic variation in violent crime in nonmetropolitan counties (p. 56). In their concluding remarks, Bouffard and Muftić suggested, “violent offenses [were] significantly associated with residential instability and family disruption” (p. 63). These findings support the idea that communities experiencing increased levels of social instability are less able to control violent offending.
Barnett and Mencken (2002) used a similar approach while focusing on the influence of social integration within rural communities. Using county-level data taken from the *Uniform Crime Reports*, a spatial lag regression model was constructed to test the relationship between resource disadvantage and violent and property crime. Resource disadvantage was measured as a factor-analyzed index composed of relative poverty rates, income inequality, unemployment, and percent female-headed households (Barnett & Mencken, 2002). Findings suggested that counties which lost population during the study period experienced increased levels of violent and property crime as a result of resource disadvantage. In the end, results from each of these studies suggest that social disorganization theory is able to be generalized across geographic location and at least partially explain differences in crime rates across offense types within non-metropolitan counties.

More recent, Li (2011) used social disorganization to examine the relationship between social structure and crime in rural counties across the United States. This research is based on the idea that social structures are linked to the informal social control of crime. Therefore, it is assumed that structural changes in rural communities inherently affect the level of crime in said communities. Results indicated that social structural changes reduce social control. Specifically, Li found “that measures of family disruption, percent urban population, and the GINI coefficient (his measure of ethnic heterogeneity) were consistently and significantly related to crime rates” (Kaylen & Pridemore, 2012, p. 136). As with most empirical study, however, there is evidence to support the opposing argument, suggesting that social disorganization frameworks are inapplicable when studying rural crime.

In response to the opinion of Osgood and Chambers (2000), Kaylen and Pridemore (2011, 2012, 2013a) question the previous findings, describing several deficiencies in their
methodology and theoretical approach. Using the same measures of social disorganization, Kaylen and Pridemore (2011) constructed a sample of 106 rural counties within Missouri in an attempt to duplicate the original study. Results were inconclusive; only one measure of social disorganization, female-headed households, was found to be positively related to rural youth violence.

Building on their previous research, Kaylen and Pridemore (2013a) recommended “three likely methodological reasons for the inconsistent results: spatial autocorrelation, sample composition, and measurement of the dependent variable” (p. 1). After performing multiple analyses, measurement of the dependent variable, juvenile violence, was found to be the only methodological feature to affect outcome. Ultimately, Kaylen and Pridemore suggested that using official crime data for rural communities is insufficient when testing criminological theory because it may not fully represent the total amount of crime within said communities. Based on this rationale, it would be difficult to accurately determine the significance of the relationship between social disorganization and crime in rural areas.

To overcome this concern, Kaylen and Pridemore (2013b) used the British Crime Survey and weighted least squares regression to estimate the effects of external sources of social disorganization and all relevant variables concerning rates of victimization. Using a comprehensive full-scale model, their findings continued to provide little support to the notion that social disorganization could describe crime in rural localities. As a result, Kaylen and Pridemore (2013b) suggested that the relationship between crime and social disorganization in rural settings should be reassessed in future research. Similar results were found by Wells and Weisheit (2004); though, their conclusions were somewhat different. Rather than question its use as a theoretical foundation to study rural crime, they reasoned that social disorganization theory
simply explained crime in urban areas more effectively (Wells & Weisheit, 2004, 2012).

Using national county-level data and the FBI’s *Uniform Crime Report*, Wells and Weisheit (2004, 2012) examined whether variables regularly used to predict patterns of crime in urban areas could be applied in rural settings. Results indicated that ecological and structural factors within communities were better at predicting crime in urban counties and were less predictive within rural counties (Wells & Weisheit, 2004, 2012). Additionally, they concluded by explaining how the assortment of variables that best predicted crime was slightly different based on urbanicity. In other words, the variables that represented elements of social disorganization most effectively within their study were different between urban and rural locations. Although Wells and Weisheit did not exactly support the use of social disorganization to study rural crime, they did not condemn it either. Ultimately, their results were inconclusive, which is characteristic of most research concerning this subject matter.

Based on the current literature regarding the association between rural crime and social disorganization, it is quite apparent that the relationship is not fully understood. As a result, this highlights a need for future research because explaining this relationship serves as a precursor to discussing the differences in community characteristics that effect crime and delinquency in urban and rural schools. If social disorganization theory can be used to explain crime in rural communities, then using the perspective to examine crime in rural schools can be justified, as well. Recognizing this fact is vital because, as explained previously, communities ridden with crime have historically been associated with higher rates of offending and delinquency in their schools. Although, this proposal has encountered some opposition over time. Welsh, Stokes, and Greene (2000) reasoned that the commonly held assumption that communities with elevated crime rates also experience high rates of crime and delinquency at school is simplistic and lacks
empirical support. Regardless of whether social disorganization actually encourages criminal and/or delinquent activity in school, research has shown that it does have a noticeable effect on certain other variables.

**Social Disorganization and the School**

A more recent development within academia is the question of whether social disorganization within communities predicts or affects crime and delinquency at school (Bowen, & Bowen, 1999; Bowen, Bowen, & Ware, 2002). Though current empirical findings offer varied opinions regarding this enquiry, one thing is certain: community characteristics play an instrumental role in reducing students’ *perceptions of safety* at school. These perceptions have been linked to poor academic performance, lowered attendance, and a range of other negative effects (Milam, Furr-Holden, & Leaf, 2010). Although these effects are vital, a more pressing concern is that perceptions of increased vulnerability could also indirectly produce negative consequences in the form of delinquent behavior and crime (Bradshaw, O'Brennan, & Sawyer, 2008).

For example, juvenile gang members who feel vulnerable at school are more likely to carry weapons and commit violent acts against their peers (Howell & Lynch, 2000; Thompkins, 2000). In such cases, the community could be responsible for generating this sense of fear because the development of juvenile gangs could be partially related to social disorganization in the surrounding community. This example illustrates another crucial point that was mentioned previously, which is that criminal activity may “spillover” into schools as a result of elevated crime rates in the community. In other words, if adolescents are regularly exposed to adult gang members outside of the school setting, then gang activity could easily carryover into the school. These concerns are thoroughly discussed throughout the next two sections.
According to Abraham Maslow (1954), safety and security at school are among the top necessities in students’ hierarchy of needs. Maslow reasoned that without these provisions, students could not pursue higher levels of academic achievement. Bowen and Bowen (1999) expanded on this train of thought by explaining how “Exposure to and perceptions of danger in schools and neighborhoods are likely to threaten the ability of youth to fulfill their potential in the school setting” (p. 319). Thus, an important aspect of the learning environment within schools is that students can readily focus their attention on education with little regard for safety. Although, research has suggested that certain environmental factors have the potential to threaten academic settings and consequently influence crime. Many of these factors involve characteristics of the communities that surround schools. For instance, community crime and violence have been found to significantly impact students’ perceptions of school danger and school safety (Bowen & Van Dorn, 2002).

Upon examining a sample of approximately 850 middle school students, Bowen and Van Dorn (2002) discovered that community violent crime rates and student perceptions were significantly correlated. Instead of focusing on school safety, Bowen and Van Dorn examined students’ perceptions of school danger, which was measured as the extent to which students felt they were at risk of being victimized. Results indicated that community violent crime significantly impacted male students’ perceived level of danger within their respective schools. Imitating the previous study, Kitsantas, Ware, and Martinez-Arias (2004) examined school safety. They used data from the National Household Education Survey to construct a sample of approximately 3,000 middle school students. This study was aimed at determining how strongly the community impacted students’ perceptions of safety within school. Several analyses of the
data revealed that student perceptions were heavily influenced by school safety relative to the neighborhood and safety of the community.

Findings from these two studies provide support to the notion that social disorganization influences student perception, which ultimately has an effect on crime and delinquency at school. This is paramount because, as Eitle and Turner (2002) describe it, exposure to community crime increases the risk of adult offending. Therefore, using a social disorganization approach to understand juvenile delinquency and crime could be an effective method of preventing future offending. As explained in Chapter one, preventing juveniles from becoming young adult offenders should be a priority within the criminal justice system. This could help moderate the crime and mass incarceration problem in the United States.

An essential point, however, is that although empirical study has recognized the fact that social disorganization influences student perceptions, it does not necessarily mean that those perceptions have been conclusively linked to crime. Stated differently, research has not established a firm relationship between social disorganization, student perceptions, and crime; this has been the case for several decades (e.g., Mitchell & Bradshaw, 2013; Toby, 1957). This lack of supporting evidence is also apparent in other perspectives that attempt to explain why school crime continues to be a significant problem in the United States. As explained previously, one alternative theory suggests that crime can simply invade a given school due to characteristics of the surrounding community. Although this phenomenon does not have any direct empirical support, it too can be expanded upon using social disorganization theory.

**Community Crime and the Spillover Effect**

Empirical study regarding the direct correlation between community crime and school crime is somewhat lacking. Specifically, evidence suggesting that crime spills over into schools
has not been thoroughly established within the research literature, yet research has reasoned that
the idea remains plausible (Limbos & Casteel, 2008). Although there is no proof of a “spillover”
effect, various studies have revealed that community characteristics do have a direct impact on
school crime and delinquency (Chen, 2008). Whether this impact is the result of spillover or
some other influence remains unclear though.

On the contrary, there is evidence suggesting that certain elements of social
disorganization, which has been positively linked to crime in the community, are directly related
to crime in school settings also. These elements include: school location, poverty, social
instability, and dilapidation. As stated previously, however, research has failed to yield concrete
evidence establishing proof of the spillover effect in the school setting (e.g., Chen, 2008; Limbos
& Casteel, 2008). This creates a complex issue within criminological study—certain portions of
the research literature appear to contradict one another to a certain degree.

If specific elements of social disorganization have been indisputably linked to increases
in school crime, then the proposal that community crime leads to increases in school crime seems
somewhat rational. However, current findings only partially support this idea by suggesting that
the social status of a school’s area weighs considerably on the level of school crime (Lindstrom,
1997, p. 121). “Social status” may be interpreted as the level of social instability within the
community, which was measured using a number of different attributes, including: total income,
number of intact families, proportion of immigrants, and unemployed/social assistance recipients
(Lindstrom, 1997). Several other studies have observed corresponding patterns of crime while
focusing on the interaction between school and community characteristics.

Limbos and Casteel (2008) and Chen (2008) each investigated how the educational
environment interacted with community characteristics to influence crime in school settings.
Specifically, the researchers used data obtained from the Los Angeles Unified School District (LAUSD) to examine the effects of neighborhood factors and educational environment in 95 middle and high schools. Results indicated, “Neighborhood crime was not significantly associated with school crime, although dilapidation was positively and significantly associated with school crime…” (Limbos & Casteel, 2008, p. 539). The only educational environment measures found to be significantly related to school crime were teacher and student to staff ratios. As these ratios increased, school crime rates decreased considerably.

Similarly, Chen (2008) used the 2000 School Survey on Crime and Safety to examine crime rates within 712 high schools that participated in the survey. An analysis of the effects of community characteristics showed that school location and socioeconomic status were moderate predictors of school crime. On the other hand, relevant educational environment variables included school security and tough-on-crime policy, which appear to be grounded in a routine activity approach. Security was found to have a small, insignificant effect on school crime; however, strict policy guidelines were found to have significant positive effects on crime (Chen, 2008). Results from these two studies coincide with previous research. Findings revealed that community crime was not intrinsically related to school crime, while simultaneously indicating that elements of social disorganization remained good predictors of crime. In other words, social disorganization is a good predictor of community and school crime, which leads to the speculation that community crime causes school crime. Although, as illustrated throughout a review of the current research literature, this relationship has not been firmly established.

On a separate note, it is rather apparent that the aforementioned research was partially based on both social disorganization and routine activity approaches. This practice is not uncommon; it is actually vital in situations where community characteristics cannot explain
student crime. This is because school environments (or routine activities within schools) customarily account for the lack of explanation in such cases. As Bickel and Dufrene (2001) explained, “variability in both community and opportunity contribute substantially to explaining variability in crime on school property…” (p. 35). Thus, when examining differences in crime rates within academic settings, determining exactly which factors generate negative behavior is imperative.

If social disorganization theory can be used to predict and/or explain crime throughout urban and rural communities, which has also been proposed to affect student behavior in school settings, then it appears that perhaps elements of social disorganization (e.g., poverty, population mobility, and racial heterogeneity) within schools themselves could function in a manner similar to that of which would be expected within a larger context. In other words, the school environment could be treated as its own micro-community that experiences social changes as a result of disorganization. This is the primary rationale guiding the use of social disorganization theory in the current study. The following section highlights a variety of past research efforts, suggesting that this idea is at least somewhat plausible and supported in many cases.

**Elements of Social Disorganization in the School**

Although the most common context researched is the community, it has been suggested that elements of social disorganization in school settings could be predictive of crime and delinquency within schools themselves (Swartz, 2012). In other words, measures of poverty, ethnic heterogeneity, and population mobility within individual schools may be able to explain some of the variation in crime and delinquency within them. If students are consistently exposed to various negative effects associated with poverty, transience, and heterogeneity, then perhaps a perception of disorganization could be produced within the relevant youth population. Thus,
negative behaviors could form as a result; paralleling what would be expected of social disorganization on a larger scale.

Although the current literature offers little insight as to how this relationship may function on a more complex level, there are several pieces of research that provide support to the idea that social disorganization can be used to study the effects of structural and organizational school characteristics on delinquency (e.g., Anderson, 2002; Hoffman & Xu, 2002; Lo et al., 2011). For example, in a study conducted by Gottfredson et al. (2005), results indicated that the proportion of male students, poverty, and the proportion of minority students were strongly associated with increases in delinquency. However, this is not the only study of its kind; several more recent projects have provided similar conclusions regarding the use of social disorganization theory in studying school misconduct.

Hoffman and Dufur (2008) found similar results concerning delinquency in school settings. However, as it relates to the current research project, an important finding was that increased delinquency was negatively associated with rural schools. This could suggest that social disorganization is less impactful in schools located in rural communities, which is an important consideration. Other notable findings included a negative relationship between delinquency and school efficacy, and a positive relationship between delinquency and percent minority students. In other words, as collective efficacy within the school increased, rates of delinquency decreased. On the contrary, as ethnic heterogeneity increased, rates of delinquency also increased. These findings provide support to the notion that social disorganization theory can be used to examine the relationship between school-level disorganization and crime and/or delinquency.

Measuring delinquency as rates of theft, vandalism, and assault, Payne (2008) found
communal school organization to be negatively associated with delinquency. In other words, as supportive and collaborative efforts between the community and schools increased, rates of delinquency at school decreased. On the contrary, proportion of minority students and low socioeconomic status were positively associated with increased rates of delinquency. These findings support the idea that elements of social disorganization, as defined by Shaw and McKay (1942), can be used to study school-level disorder.

In a similar fashion, Crooks et al. (2007) discovered that violent delinquency was negatively associated with perceived school safety. In other words, as perceptions of school safety improved, rates of violent delinquency decreased. Although it is somewhat apparent as to how this relationship may function, the point being made is that this relationship was partially mediated by the effects of school size, school location, and school/community connectedness. This indicates that social disorganization could play an important role in development of violent behavior in juvenile populations.

Overall, this body of research suggests that schools with larger percentages of minorities, students from single-parented households, and students from lower-income families tend to suffer more from the effects of delinquency (Swartz, 2012). These conclusions parallel research findings within community-oriented literature, which suggest that the main elements of Shaw and McKay’s social disorganization theory are responsible for higher rates of crime and victimization. These “elements” are generally measured as percent minority, percent female-headed household, and socioeconomic status (Swartz, 2012). Having provided an overview of social disorganization theory in relation to school misconduct, the applicability of routine activity theory will be discussed throughout the following section.
Although most criminological theories explain why individuals become inclined to commit crime—whether it be the result of prolonged exposure to strain (Merton, 1938), the cultural transmission of deviance (Anderson, 2000; Sutherland, 1947), weak social bonds (Hirschi, 1969), or the life-course (Moffitt, 1993)—other theories attempt to explain how individuals actually commit criminal acts. In other words, there is a distinct difference between the development of criminality over time and actually committing crime. Routine activity theory is based on the latter of these two concepts. It simply describes the variables that influence an individual offender’s decision to commit crime, as well as why certain individuals are more or less likely to become victimized. Furthermore, routine activity theorists are not concerned with describing previous trends in crime or why they transpired. Instead, this paradigm is primarily used to predict and control crime in the future by illustrating how it generally occurs and controlling for those factors (Sherman, Gartin, & Buerger, 1989).

Unlike previous theorists, Lawrence Cohen and Marcus Felson (1979) disregarded the belief that offenders were drawn into or motivated to commit crime by some guiding mechanical force within society. Alternatively, they believed that offenders were rational-thinking individuals who chose to commit crime. The researchers also reasoned that crime was highly dependent on opportunity, which serves as the foundation of this theoretical framework. They believed that crime could only occur when an opportunity presented itself. Expanding on this idea, they explained that opportunity was dependent on the motivated offender, the suitable target, and the capable guardian. These terms will be explained more thoroughly throughout the following discussion of research literature.

Before advancing, however, it is important to illustrate a final point: opportunities present
themselves based on the routine activities people engage in throughout their daily lives—hence the name “routine activity theory”. In short, certain people are more likely to be victimized based on their daily patterns of behavior. For example, a young female waitress has a greater chance of becoming the victim of sexual assault if she walks the same route home each night after leaving her nightshift job at a local diner. A caveat to this is that “suitable targets” are not always people; Cohen and Felson (1979) would agree with the view that targets can also be physical objects, things of value, or even ideas.

Alternatively, routine activities also determine which individuals are more likely to commit crime. Based on the manner in which a person lives, they may be more inclined to engage in illegal activity. For instance, the average youth who regularly encounters gang members because an older sibling has already joined a gang is at a greater risk of engaging in gang-related activity in the future (Medina, Ralphs, & Aldridge, 2012; Miller, 2002; Young, Fitzgibbon, & Silverstone, 2014). Yet, the motivated offender represents only one aspect of Cohen and Felson’s routine activity theory. As stated previously, the opportunity to commit crime relies on the presentation of suitable targets in the absence of capable guardianship.

Suitable targets and the absence of capable guardians go hand-in-hand. As Cohen and Felson (1979) explained, both must converge in time and space for crime to occur. If one is present without the other, then the opportunity to commit crime is essentially eliminated. As a result, the routine activity approach offers an extremely practical crime prevention model: remove one of the elements of opportunity and crime cannot take place (Clarke, 1997; Felson & Clarke, 1998). This type of crime prevention is classically referred to as situational crime prevention. Though this rationale offers a somewhat obvious solution in regard to crime prevention, it is empirically based and has resulted in numerous policy implications since its
introduction nearly four decades ago (Shariati & Guerette, 2017). Additionally, while its scope stretches far beyond any one environment, this strategy can be effectively applied to specific locations, such as schools (Monahan, VanDerhei, Bechtold, & Cauffman, 2014).

Pratt and Cullen (2005) conducted a meta-analysis to examine the overall support for routine activity theory in macro-level studies of crime within the current research literature. Although the current study does not utilize an inherently macro approach, their results provide some support for the theory’s use in examining the effects of security measures in urban and rural schools across the nation. Ultimately, they suggest that the current state of research is incomplete; however, they do note that the theory has been well-tested and is generally supported in studies that examine the guardianship aspect of routine activity theory.

In the mid-1990s, Eck (1994) and Felson (1995) made additional contributions to the literature by developing a new train of thought stemming from routine activity theory. This rationale suggests that “guardians” represent only one of three roles assumed by those individuals who are responsible for controlling crime. The remaining roles include handlers and place managers. According to Eck (1994), handlers are those who control potential offenders, and managers are those individuals who control places. Felson (1995) suggested that different levels of responsibility accompany each of these roles. Additionally, Felson noted that guardians are likely to internalize a sense a personal responsibility for the residential places to which they belong, and for targets that belong to or are closely connected with them (Reynald, 2010, p. 359).

Having provided a general overview of the current state of empirical support for the routine activity framework, it is also of importance to assess its application in urban and rural schools. As explained by Bachus (1994), school violence has become commonplace in rural settings. In recent years, school administrators have implemented various guidelines and security
measures in hopes of eliminating or reducing the effects of crime and delinquency on school grounds. The use of school resource officers, metal detectors, identification badges, security cameras, and after-school programs represent only a few of the many types of crime prevention strategies that have been employed (Blosnich & Bossarte, 2011; Shelton, Owens, & Song, 2009). Furthermore, each of these security measures are in line with the need for guardianship in school settings. A mass of research concerning these strategies, however, has provided mixed results regarding their effectiveness. Thus, the following section concentrates on describing the current state of literature regarding the effectiveness of said strategies in schools throughout urban and rural America.

**Routine Activity Theory and the School Setting**

Security within schools has been a growing concern for decades. In the wake of the Columbine tragedy in 1999, many schools throughout the country began enforcing strict policy guidelines and implementing visible security measures (Addington, 2009). Routine activity theory suggests that these forms of security may serve to increase guardianship within school settings, reducing opportunities to commit criminal and delinquent behavior. Thus, school resource officers, metal detectors, surveillance cameras, and a number of other practices have become regularities in the United States. Types of security measures vary considerably based on differences in safety issues between urban and rural school settings (Eccles & Midgley, 1989). Although most juvenile crime prevention strategies attempt to reduce and prevent crime during regular school hours, there are also various after-school programs aimed at diminishing students’ ability to commit crime once they are dismissed from school.

After-school programs are deeply rooted in routine activity theory. In a sense, these programs act as capable guardians by eliminating the opportunity to commit crime. According to
Fox and Newman (1997), the time between 2:00 p.m. and 8:00 p.m. are the peak hours for juvenile crime. This is highly correlated with school dismissal times, which typically occur at approximately 3:00 p.m. However, the timespan associated with increased of juvenile crime rates extends well into the evening. This phenomenon can be explained by a lack of parental supervision after school. Many parents and guardians have occupations with shifts ending in late afternoon hours. Thus, juveniles have several hours of unsupervised personal time to engage in crime and delinquent behavior unless they attend after-school programs or participate in other types of extracurricular activities.

A developing concern in rural criminology, however, is that certain schools do not have access to these types of programs. Additionally, schools located in extremely rural areas generally have fewer financial resources available to implement various types of visible security (Johnson, Showalter, & Klein, 2012). As a result, determining how these factors impact student crime rates based on urbanicity is essential because they may affect urban and rural students differently. Though, the relevant literature concerning the impact of these factors offers little in regard to their effectiveness based on urbanicity, which can be seen throughout the following review of literature.

**School Resource Officers (SROs)**

As described by James and McCallion (2013), “The body of research on the effectiveness of SRO programs is limited, both in terms of the number of studies published and the methodological rigor of the studies conducted” (p. 1). SROs are typically found to be associated with lower rates of school violence, increased perceptions of safety, and improved functionality within school settings overall. However, various sources have also suggested SRO’s presence in schools has no effect on student crime or could actually be contributing to levels of school
misconduct (Mayer & Leone, 1999; Schreck, Miller, & Gibson, 2003). Theriot (2009) described a growing concern within academia, which is that increasing police presence in school settings could criminalize student misconduct by introducing troubled youths to the juvenile justice system rather than using conventional techniques to discipline them. Upon examining school arrest records, Theriot (2009) discovered that SROs were not significantly related to increases in total arrests, but were correlated with increased arrest rates for certain offense types.

Building on the previous point, it has also been suggested that certain subgroups experience stronger detrimental effects as a result of SRO presence. In a study conducted by Kupchik and Ellis (2008), perceptions of fairness were compared between ethnic minority and White students. Findings revealed that African American males perceived less fairness and consistency in the enforcement of school rules by SROs. Although, these findings could be associated with the fact that racial minorities are more likely to receive punishment at school, which is an entirely separate issue that can be explained using the routine activities approach (Skiba, Michael, Nardo, & Peterson, 2002).

In contrast, empirical study has also illustrated positive effects in relation to SROs (Green, 1999; Jennings, Khey, Maskaly, & Donner, 2011; Johnson, 1999). The most prominent effect is that overall levels of school safety increase dramatically (student crime decreases), along with student and faculty perceptions of safety. While examining the effects of SROs on school crime rates, Green (1999) and Johnson (1999) also observed the implications of various security measures on student crime rates. Specifically, they discovered that the use of metal detectors influenced school environments in a manner similar to SROs; however, there are conflicting findings regarding the effectiveness metal detectors at school.
Metal Detectors

Gastic (2011) conducted one of the only studies to examine the effects of visible security measures in school while including rural schools within the overall analysis. Focusing on students’ sense of safety, Gastic discovered a significant negative correlation between the use of metal detectors and perceived level of safety. It was found that rural students’ levels of fear were significantly greater than urban students’ levels of fear. This difference was attributed to the fact that metal detectors are more common place in urban schools, tempering their effect on urban students’ levels of fear (Gastic, 2011). Due to the fact that Gastic did not examine school crime rates in relation to perceptions of safety, there remains a need to examine the topic more critically. In addition, the fact that other studies have found somewhat contradictory results reinforces this need for further research, as can be seen with Ginsberg and Loffredo (1993).

Focusing on the attitudes of New York City high school students, Ginsberg and Loffredo (1993) constructed a sample comprised of students who attended schools with and without metal detectors. As reported by Catalano, Loeber, and McKinney (1999), results indicated that students who attended schools with metal detectors were half as likely to carry weapons to school, including knifes and firearms (Ginsberg & Loffredo, 1993). These findings, along with others, suggest that metal detectors create a safer environment for students. Although, based on the collection of data concerning the use of these security measures at school, a fundamental question arises: should such devices be implemented, regardless of their effect on students’ levels of fear and the academic/learning environment? The answer to this question can only be determined by weighing the value assigned to education, psychological wellbeing, and overall school safety. Furthermore, the amount of conflicting information on the topic makes this

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2 Although, it was reported that the majority of schools using metal detectors and conducting searches were located in urban areas.
question especially difficult to reason upon; yet, this not the always the case as can be seen with after-school programs.

After-School Programs (ASPs)

The research literature concerning after-school programs and youth crime is predominantly grounded in routine activity theory. Virtually all findings suggest that such programs reduce juvenile delinquency and crime if they are implemented correctly. Osgood, Wilson, O'Malley, Bachman, and Johnston (1996) explain that “unstructured socializing with peers in the absence of authority figures presents opportunities for deviance” (p. 635). This statement effectively describes the guiding principle behind the development of ASPs. As Shaw and McKay (1942) suggest, the opportunity to commit crime is partially dependent on the absence of capable guardians.

Although empirical study has generally supported the implementation of ASPs, there is at least one apprehension in regard to their effect on juvenile delinquency and crime. Rorie, Gottfredson, Cross, Wilson, and Connell (2011) explained that unstructured ASPs may actually increase antisocial behavior by allowing deviancy training to occur, which is the process of peers reinforcing each other’s deviant behavior through unstructured socialization. However, Chung (2000) was responsible for highlighting the importance of structured ASPs over a decade earlier. He described how quality programs reduce delinquency, encourage higher grades, and focus on developing social skills. These fundamentals inherently lead to improved behavior during normal school hours. Thus, using routine activity theory to approach juvenile behavior in academic settings is an excellent method of creating a safer, more positive academic environment.

Unfortunately, as with most empirical study concerning youth populations, this approach has not been thoroughly examined in rural locations. Due to this lack of research, it is difficult to
suggest whether environmental characteristics in urban and rural schools have different effects on levels of crime and delinquency in student populations. The same is true regarding the effects of community characteristics (e.g., crime, poverty, population mobility, ethnic heterogeneity) on crime in urban and rural schools. However, by combining the two theories, the ability to explain differences in crime within these localities is expanded.

**Summary**

Based on the current state of literature, the need to examine the effects of social disorganization and routine activity on rates of crime and delinquency in schools is a growing concern (Arnold, Newman, Gaddy, & Dean, 2005). The school environment provides an excellent opportunity to study the social phenomenon at hand, seeing as how youths spend a great deal of time in these settings. In addition, an unfortunate reality is that a segment of the current youth population will become adult offenders. Thus, it is possible that if criminal and delinquent behavior is recognized and corrected early on, the propensity that at-risk individuals will turn to crime later in life could be greatly diminished. A caveat to this, however, is that juveniles in rural localities are commonly overlooked within academia in relation to incidence of school misconduct.

This tendency is rather precarious due to the fact that rural areas represent a significant portion of the total United States’ population, including middle and high school students. Therefore, if one of the primary missions of the criminal justice system in America is to prevent crime, future research must steer away from the inclination to only examine students in urban locations. This methodology would extend the scope of newly implemented policy regarding school safety, rules/regulations, after-school programs, etc. Although, based on the current theoretical approach, which utilizes community and organizational characteristics, there would
be various limitations with such policy—mainly because social disorganization was not
developed to explain crime in rural areas.

There is also a possible limitation associated with individual school characteristics
explaining criminal behavior in rural schools specifically. As described throughout the relevant
literature, schools located in rural areas generally have fewer financial resources available to
implement various security measures. Therefore, when testing the effects of security measures,
there is a possibility that statistical analyses could be limited due to sample size. In other words,
the fact that fewer rural schools have visible security measures could eliminate the possibility of
having a comparison group.

Although the previously mentioned limitations are of concern, not all hope is lost using
the current integrated approach. Ultimately, social disorganization and routine activity theory can
be integrated because both explain crime in relation to the surrounding environment. Though
each theory has its own strengths and weaknesses in regard to explaining crime in academic
settings, together they offer a thorough explanation of differences in school crime between urban
and rural settings.

To summarize, the current study seeks to determine the differential impact that
environmental and organizational characteristics have on levels of school misconduct in urban
and rural schools. Routine activity theory and social disorganization theory have been subjected
to ample amounts of peer review since their initial development. As such, they provide sturdy
theoretical foundations to answer the following research questions: (1) Are there any differences
in rates of crime and delinquency between urban and rural schools? (2) When controlling for
certain characteristics, does the school environment (i.e., the routine activities within schools)
affect crime rates? (3) And lastly, do elements of social disorganization within urban and rural
schools differentially affect delinquent behavior?

**Hypotheses**

The current research seeks to determine if and to what extent environmental and organizational characteristics within urban and rural schools influence rates of school misconduct. Specifically, this study is concerned with determining whether there are any differential effects based on various levels of urbanization. That being said, the following research hypotheses examine specific relationships between school disorganization, routine activities inside schools, and rates of school misconduct. A complete list of the research hypotheses within the current study can be found below.

Hypothesis 1: School disorganization is significantly related to security measures in urban schools.

Hypothesis 2: School disorganization is significantly related to security measures in rural schools.

Hypothesis 3: School security is not significantly related to misconduct in urban schools.

Hypothesis 4: School security is significantly related to misconduct in rural schools.

Hypothesis 5: School disorganization is significantly related to misconduct in urban schools.

Hypothesis 6: School disorganization is not significantly related to misconduct in rural schools.

Hypothesis 7: High levels of crime in the surrounding location are significantly related to increased school misconduct in urban schools.
Hypothesis 8: High levels of crime in the surrounding location are not significantly related to increased school misconduct in rural schools.

Having provided an overview of social disorganization theory and routine activity theory, along with the general level of support for using each to study rates of school misconduct in urban and rural communities, the following chapter will describe how key components of each theory are used within the current study. In addition, Chapter three will describe the data being utilized, its origin, and how certain target variables were operationalized. This allows for a better understanding of how each of the previously mentioned research hypotheses were analyzed in the current study.
CHAPTER 3

METHODOLOGY

Introduction

This chapter will begin by describing the secondary data source being used in the current study along with the process said data was collected. This is important for two reasons: (1) it allows for a better understanding of how comprehensive future analyses will be; and (2) it controls for external validity issues, thus increasing generalizability to the larger population. Next, each of the variables within the current study will be described, including how and why these measures were selected. Following that, each of the research hypotheses will be examined, along with a brief explanation of how they were developed. Lastly, the univariate, bivariate, and multivariate analyses used to test said hypotheses will explained.

Data

The current study uses the 2007-2008 School Survey on Crime and Safety (SSOCS) provided by the National Center for Education Statistics (NCES) on behalf of the U.S. Department of Education (Nolle, Guerino, & Dinkes, 2007). The SSOCS collects data on school crime and safety from principals and school administrators in public schools across the United States. This data source provides detailed information regarding the relationship between crime and school characteristics (e.g. security, organization, urbanicity, etc.) in primary schools, middle schools, high schools, and combined schools across the country. That being said, it allows for empirical study concerning the effectiveness of school policies, procedures, security measures, and other types of crime prevention strategies in various types of academic settings (Nolle, Guerino, & Dinkes, 2007).

The 2007-2008 SSOCS data collection process began in February of 2008 and lasted
until June of the same year. Questionnaire packets were mailed to a total of 3,565 public schools; however, only 2,724 schools completed the survey in its entirety: 726 primary schools, 956 middle schools, 954 high schools, and 88 combined schools. The 2007-08 SSOCS sample was generated from the 2003-04 NCES Common Core of Data (CCD) Public Elementary/Secondary School Universe data file (Nolle, Guerino, & Dinkes, 2007, p. B-3). The CCD is a yearly survey of all K-12 public schools; however, it important to clarify that it does exclude various schools based on certain characteristics, such as home schools, special education schools, etc.

As reported by Nolle, Guerino, and Dinkes (2007), there were two primary objectives associated with the 2007-2008 SSOCS sampling design: (1) “to obtain overall cross-sectional and subgroup estimates of important indicators of school crime and safety and” (2) “to yield precise estimates of change in these indicators” between survey trials (p. B-3). These objectives were achieved by drawing a *stratified sample* of 3,565 public schools, “using the same general sampling design as in the previous survey administrations for stratification variables, number of strata, method of sample allocation, and sorting of variables before selection” (Nolle, Guerino, & Dinkes, 2007, p. B-3). Stratified sampling is a probability sampling technique that divides the total population into different subgroups or strata. Once the subgroups are identified, the final sample is randomly selected in proportion to each stratum. Strata within 2007-2008 SSOCS were identified as instructional levels, locale settings (urbanicity), and enrollment size categories (Miller, 2004). Ultimately, using the same design for the 2007-2008 SSOCS administration increased the precision in the estimates of change over time.

**Data Collection**

The 2007-2008 SSOCS was initially released as a mail survey. However, several months before questionnaires were mailed out, NCES began working with school districts that required
prior approval for sample schools to participate in the survey. Approaching the survey’s release date, letters were mailed to school administrators providing all relevant information regarding the survey and contact information for any questions. Approximately one week later, questionnaires were distributed and sent to principals of schools identified in the sample (Nolle, Guerino, & Dinkes, 2007).

Throughout the two weeks following the release of the questionnaire, a telephone operation was conducted to confirm that sample schools had received the survey. Approximately one week after this operation ended, an alternate two-phase telephone operation was conducted to remind school principals and administrators to complete the SSOCS and to monitor their progress. During the second phase of this operation, the questionnaire could be completed through phone conversation if requested (Nolle, Guerino, & Dinkes, 2007). Data collection lasted a total of ten days, at which time returned questionnaires were examined for quality and the extent to which they were completed. If questionnaires did not meet certain criteria, they were excluded from the overall data pool.

Regardless, the 2007-2008 SSOCS was still able to retain a rather large, useable sample size. Recognizing this fact identifies why it is so crucial to over sample target populations when conducting research, especially when employing mail surveys. The 2007-2008 SSOCS response status based on relevant school characteristics can be seen in Table 1 on the following page. As depicted, respondents were categorized based upon urbanicity, enrollment size, and percent minority students. Within the current study, however, urbanicity is most essential. Thus, completed surveys were returned by an approximately equal number of schools based on this factor. Raw data and weighted response rates based on urbanicity were reported as follows: 697 city (75.4%); 1,046 urban fringe (80.3%); 281 town (86.7%); and 700 rural (85.5%).
Table 1: Response Status Based on School Characteristics

<table>
<thead>
<tr>
<th>School characteristic</th>
<th>Initial sample</th>
<th>Completed survey</th>
<th>Non-respondents</th>
<th>Ineligible</th>
<th>Unweighted response rate (percent)</th>
<th>Weighted response rate (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>3,565</td>
<td>2,724</td>
<td>789</td>
<td>52</td>
<td>77.5</td>
<td>81.3</td>
</tr>
<tr>
<td>Enrollment size</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;300</td>
<td>469</td>
<td>372</td>
<td>76</td>
<td>21</td>
<td>83.0</td>
<td>83.2</td>
</tr>
<tr>
<td>300-499</td>
<td>631</td>
<td>516</td>
<td>103</td>
<td>12</td>
<td>83.4</td>
<td>84.7</td>
</tr>
<tr>
<td>500-999</td>
<td>1,324</td>
<td>1,030</td>
<td>280</td>
<td>14</td>
<td>78.6</td>
<td>79.9</td>
</tr>
<tr>
<td>1,000+</td>
<td>1,141</td>
<td>806</td>
<td>330</td>
<td>5</td>
<td>71.0</td>
<td>72.5</td>
</tr>
<tr>
<td>Urbanicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>City</td>
<td>1,014</td>
<td>697</td>
<td>295</td>
<td>22</td>
<td>70.3</td>
<td>75.4</td>
</tr>
<tr>
<td>Urban fringe</td>
<td>1,369</td>
<td>1,046</td>
<td>310</td>
<td>13</td>
<td>77.1</td>
<td>80.3</td>
</tr>
<tr>
<td>Town</td>
<td>332</td>
<td>281</td>
<td>48</td>
<td>3</td>
<td>85.4</td>
<td>86.7</td>
</tr>
<tr>
<td>Rural</td>
<td>850</td>
<td>700</td>
<td>136</td>
<td>14</td>
<td>83.7</td>
<td>85.5</td>
</tr>
<tr>
<td>Percent minority</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 5 percent</td>
<td>551</td>
<td>470</td>
<td>75</td>
<td>6</td>
<td>86.2</td>
<td>89.5</td>
</tr>
<tr>
<td>5-20 percent</td>
<td>949</td>
<td>766</td>
<td>175</td>
<td>10</td>
<td>81.6</td>
<td>82.8</td>
</tr>
<tr>
<td>20-50 percent</td>
<td>898</td>
<td>678</td>
<td>210</td>
<td>10</td>
<td>76.4</td>
<td>79.3</td>
</tr>
<tr>
<td>50 percent +</td>
<td>1,167</td>
<td>810</td>
<td>331</td>
<td>26</td>
<td>71.0</td>
<td>76.7</td>
</tr>
</tbody>
</table>

Poor response rate and the tendency to return incomplete questionnaires is a common problem when using mail surveys (Allen, Liptak, Guo, & Worasinchai, 2015). Though these issues can be partially avoided by remaining cognizant of who is receiving the survey and what day of the week they should receive it on. For example, if a survey is examining workplace violence, it should arrive at individual businesses on a weekday when workers are present. On the contrary, if a survey is examining individual drug use and being sent to individuals’ homes, it should arrive on a Friday or Saturday when people are more likely to be home. An additional point is that researchers should avoid mailing surveys immediately before important dates, such as national holidays or segments of time typically associated with increased travel. As described by Rogelberg and Luong (1998), these examples result in a type of nonresponse commonly referred to as inaccessibility, which is when the prospective respondent does not receive the survey as a result of them not being home.

The advantages of mail surveys are that they are generally cheaper to use and require less staff to handle the workload, which means fewer individuals have to be paid for their assistance throughout the entire survey process (Alan, 1998). Although, with advancements in technology throughout the 21st century, Internet surveys currently offer a more cost effective means of gathering data (Yun, & Trumbo, 2000). In light of the fact that mail surveys are less expensive, this allows them to be sent to a larger number of possible respondents, which increases the likelihood of obtaining a useable sample size. Ultimately, there are several pros and cons associated with using mail surveys; yet, if implemented properly, they tend to provide satisfactory response rates (Alan, 1998).
Variables

Classification Variable

**Urbanicity.** *Urbanicity* was included as the primary classification variable within the current study due to the fact that this research sought to determine the differential effects of environmental characteristics on levels of school misconduct based upon urban and rural classifications. The 2007-2008 SSOCS distinguished four separate measures of urbanicity, including: 1=city, 2=urban fringe (suburbs), 3=town, and 4=rural. According to the National Center for Education Statistics (NCES), these measures are derived from a classification system originally developed by the NCES to describe a school’s location, which ranged from “large city” to “rural”. However, in 2007-2008, the survey period from which data for the current study was obtained, a new technique was implemented. This technique determined a school’s “locale code” based on its address’ proximity to an urbanized area, which is an area characterized by “a densely-settled core with densely settled surrounding areas” (National Center for Education Statistics, n.d.).

This methodology was constructed around the urban-rural classification system used by the United States Census Bureau. In short, to qualify as an urban location, a given territory must encompass at least 2,500 people. In addition, 1,500 of those residents must reside outside of “institutional group quarters” (United States Census Bureau, 2015). The Census Bureau further divides urban locations into urban areas (UAs) and urban clusters (UCs). Urban areas are composed of 50,000 or more people, while urban clusters are composed of 2,500 to 50,000 people. All populations and territories not included in one of these urban locations are considered “rural” areas.

Although it does not cause any fundamental problem in examining the effects of
urbanicity, for the purposes of the current study the attributes used by NCES were combined into strictly urban and rural categories and measured on the nominal level. City and urban fringe were combined to represent “urban” locations. Town and rural were combined to represent “rural” locations (1=urban, 2=rural). Upon splitting the data based on urbanicity, the urban sample contained approximately 1,500 respondents (n=1,493), and the rural sample contained approximately 1,100 respondents (n=1,067). Having provided an overview of the primary classification variable, the independent measures within the current study will be discussed in the following section.

**Dependent Variable**

**School misconduct.** The dependent variable within the current study was constructed as a composite measure of the amount of crime and/or delinquency within schools that participated in the 2007-2008 SSOCS. Due to the fact that there are several different classifications of such behavior, the term *school misconduct* was created to represent a wide range of unsolicited behaviors that have been known to occur in academic settings, including: use/possession of weapons, distribution/possession/use of alcohol and drugs, physical attacks and fights, insubordination, and gang-related hate crimes. These types of “disorder” are believed to provide a more accurate and comprehensive measure of the target variable. This variable was measured on a continuous level as the actual number of reported incidents (aggregated across all categories), which means that higher overall scores on the scale indicate elevated levels of school misconduct. Refer to Table 2 on the following page for a full summary of attributes and the minimum/maximum frequencies for each.
Table 2: *School Misconduct Measure*

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use/possession of a firearm or explosive device</td>
<td>0.00</td>
<td>120.00</td>
</tr>
<tr>
<td>Use/possession of other weapon type</td>
<td>0.00</td>
<td>144.00</td>
</tr>
<tr>
<td>Distribution/possession/use of illegal drugs</td>
<td>0.00</td>
<td>168.00</td>
</tr>
<tr>
<td>Distribution/possession/use of alcohol</td>
<td>0.00</td>
<td>47.00</td>
</tr>
<tr>
<td>Physical attacks or fights</td>
<td>0.00</td>
<td>672.00</td>
</tr>
<tr>
<td>Acts of insubordination</td>
<td>0.00</td>
<td>8,687.00</td>
</tr>
<tr>
<td>Gang-related hate crimes</td>
<td>0.00</td>
<td>150.00</td>
</tr>
</tbody>
</table>

**Independent Variables**

School security. School security variables were chosen based on a routine activity approach. In other words, it is theorized that increased security limits the opportunity for students to commit criminal and delinquent acts. To provide a comprehensive measure of security, ten separate security measures were included in the current study, including: *metal detectors, staff radios, security cameras, school resource officers/security guards, student identification badges, lockers provided to students, strict dress code, closed lunches, locked doors, and visitor check-in.* These were measured on the nominal level (1=yes, 2=no); participants responded “no” if their school did not implement a given security measure, and “yes” if their school did. Due to the nature of the original coding technique, these variables had to be recoded (0=no, 1=yes). Thus, higher scores for a particular type of security are indicative of an increase in that security measure within either urban or rural schools.
Although an index would typically provide a more comprehensive measure of the target variable—*school security*, the included security measures were examined separately to test the differential effect each had on rates of disorder throughout urban and rural schools. This allowed for a better understanding of how various types of security could differentially impact levels of school misconduct. As a result, statistical analyses will not be limited based on relevant portions of the sample. Refer to Table 3 below for a complete summary of the independent security measures.

Table 3: *School Security Measures*

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Coding Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students pass through metal detectors</td>
<td>1=YES, 0=NO</td>
</tr>
<tr>
<td>Require student identification badges</td>
<td>1=YES, 0=NO</td>
</tr>
<tr>
<td>Enforce strict dress code</td>
<td>1=YES, 0=NO</td>
</tr>
<tr>
<td>Provide lockers to students</td>
<td>1=YES, 0=NO</td>
</tr>
<tr>
<td>Sworn law enforcement officer or security guard</td>
<td>1=YES, 0=NO</td>
</tr>
<tr>
<td>Provide two-way radios to any staff</td>
<td>1=YES, 0=NO</td>
</tr>
<tr>
<td>Security cameras monitor the school</td>
<td>1=YES, 0=NO</td>
</tr>
<tr>
<td>Closed campus for lunch</td>
<td>1=YES, 0=NO</td>
</tr>
<tr>
<td>Locked/monitored doors</td>
<td>1=YES, 0=NO</td>
</tr>
<tr>
<td>Require visitor check-in</td>
<td>1=YES, 0=NO</td>
</tr>
</tbody>
</table>
School disorganization. There were six separate measures of disorganization in the current study: crime where school is located, efforts limited by inadequate funds, percent minority students enrolled at school, percent limited English proficient students, school size, and percent daily attendance. Due to the fact that these variables were selected based on their relation to social disorganization theory, there is a distinct association with Shaw and McKay’s (1942) elements of social disorganization: population mobility, economic deprivation, and ethnic heterogeneity. There has been a great deal of support for utilizing similar measures in previous research (Benbenishty & Astor, 2005; Bradshaw, Sawyer, & O’Brennan, 2009; Hoffman & Dufur, 2008; Hoffman & Xu, 2002; Payne, 2008; Stewart, 2003; Wilcox & Clayton, 2001). Thus, it is believed that school disorganization could lead to increases in crime and delinquency within student populations, similar to the manner in which community disorganization leads to crime within the surrounding area.

Although this study is not exclusively concerned with testing the relationship between crime within the surrounding community and levels of school misconduct, the possibility that it could have a significant impact on rates of school misconduct was accounted for. This phenomenon was discussed earlier in Chapter 2 in relation to the spillover effect. Crime where school is located was measured on the ordinal level and asked respondents to identify the amount of crime that occurred within the community surrounding their school. Response choices included: 1=high level of crime, 2=moderate level of crime, 3=low level of crime. As such, this variable had to be recoded in reverse order with higher scores being indicative of elevated rates of crime within the surrounding community. The next element of school disorganization, efforts limited by inadequate funds, was similarly measured on the ordinal level. Principals were asked to report the extent to which financial resources limited their ability to control student crime in
their schools. Response choices included: 1=limit in a major way, 2=limit in a minor way, or 3= does not limit. This variable was recoded in such a way that higher scores represented a greater extent of economic deprivation (0=does not limit, 1=limit in a minor way, 2=limit in a major way).

The next independent variable, percent minority students, was measured on the interval level by asking principals what percentage of students at their respective institutions belonged to a minority subgroup. Response choice included: 1=less than five percent, 2=five to twenty percent, 3=twenty to fifty percent, 4=fifty percent of more, -8=do not know. The latter of these response choices was recoded as system missing. Based on the manner in which this variable was coded, as representative scores increase, the extent of ethnic heterogeneity within schools also increases. Percent limited-English proficient students was measured on the ratio level by asking respondents to identify the actual percentage of students at their schools that were limited-English proficient. Thus, higher scores on this measure suggest a greater amount of ethnic heterogeneity as well. In addition, this offers a gauge of collective efficacy and the hampered potential for bonds to be established.

Percentage daily attendance was the final measure of disorganization within schools. This variable was measured on the ratio level by determining the actual percentage of students that attended school on a daily basis. Ultimately, percent daily attendance was included as proximal measure of population mobility within schools. Although this measure does not necessarily reflect increased transience in schools, it does indicate the extent to which students have the ability to move throughout schools, which could have a significant effect on rates of disorder due to a lack of control. A description of the aforementioned variables can be seen in Table 4 on the following page.
Table 4: School Disorganization Measures

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coding Method</th>
</tr>
</thead>
</table>
| Crime where school is located            | 1=Low level of crime  
                                              | 2=Moderate level of crime  
                                              | 3=High level of crime |
| Efforts limited by inadequate funding    | 1= Does not limit  
                                              | 2=Limits in minor way  
                                              | 3= Limits in major way |
| Percent minority student enrollment     | 1=Less than 5 percent  
                                              | 2=5 to 20 percent  
                                              | 3=20 to 50 percent  
                                              | 4=50 percent or more  
                                              | -8=Do not know |
| Percent limited English proficient       | Actual reported percentage                        |
| School size                              | 1=Less than 300  
                                              | 2=300 to 499  
                                              | 3=500 to 999  
                                              | 4=1,000 or more |
| Percent daily attendance                | Actual reported percentage                        |

**Control Variables**

**School size.** By including this variable in the current study, it allows for a comprehensive test of how well various environmental and organizational characteristics predict school misconduct. Rural schools are inherently associated with smaller student enrollment sizes. Therefore, if enrollment size is held constant, differences in the true effect size of said characteristics on school misconduct can be determined between urban and rural settings. This variable is measured on the interval level by asking each principal to identify the total number of students at their institution. The four possible response categories included: 1=less than 300
students, 2=between 300 and 499 students, 3=between 500 and 999 students, 4=more than 1,000
students. Based on the manner in which this variable is coded, as representative scores increase,
total student enrollment size increases as well.

Analysis

Research Design

The current study is a secondary data analysis utilizing a non-experimental comparative
research design. In other words, it compares rates of crime and delinquency in rural and urban
schools by way of the 2007-08 SSOCS dataset. The primary advantage of non-experimental
design is that it is relatively easy to implement, allowing research to be conducted quickly and
efficiently. This is because there are no variables or conditions within a given study being
manipulated. If the relationship between variables is unknown, this type of design is ideal
because it allows variables to interact freely. Thus, non-experimental design helps in discovering
relationships between two variables that were previously unknown.

The advantages of non-experimental design, however, also serve as disadvantages. Because this type of research is easy to conduct, researchers tend to analysis the same
relationships without thoroughly reviewing the literature on a given a topic. In other words,
researchers often study relationships that have been examined several times previously.
Additionally, it is characteristic for non-experimental design to suffer from single-source bias
because independent and dependent variables can be conveniently gathered from the same data
source. However, these concerns are not entirely relevant within the current study due to the
amount of data that was collected through the 2007-08 SSOCS.
Hypotheses

There are eight research hypotheses within the current study. Each seeks to determine the extent of relationship between school misconduct and some measure of the school environment within urban and rural schools. The exceptions to this are hypotheses one and two, which simply suggest that there is a relationship between the two primary categories of independent variables—school disorganization and school security—regardless of urbanicity. Testing this relationship is necessary because it provides insight as to whether the independent variables are significantly related. This is important because it is also hypothesized that school disorganization and increased security measures are significantly and individually associated with the dependent variable—school misconduct.

Hypothesis 1: School disorganization is significantly related to security measures in urban schools.

Hypothesis 2: School disorganization is significantly related to security measures in rural schools.

Hypothesis three examines the relationship between school security and school misconduct in urban schools. This is based on the idea that urbanized students are more familiar with increased security measures, and therefore desensitized. As a result, it is theorized that increased security has more of an effect on rural students’ predisposition to commit criminal and delinquent acts. That being said, hypothesis four examines the relationship between security measures and disorder in rural schools.

Hypothesis 3: School security is not significantly related to misconduct in urban schools.

Hypothesis 4: School security is significantly related to misconduct in rural schools.
Hypothesis five examines the relationship between school disorganization and school misconduct in urban schools. In particular, it is believed that school disorganization has more of an impact on urban students’ behavior. This rationale is based on the idea that students in rural locations are exposed to elements of disorganization more frequently—mainly poverty. As a result, it is theorized that rural students become accustomed to school disorganization, which lessens its impact on their behavior. On the contrary, hypothesis six examines the relationship between school disorganization and school misconduct in rural schools.

Hypothesis 5: School disorganization is significantly related to misconduct in urban schools.

Hypothesis 6: School disorganization is not significantly related to misconduct in rural schools.

Hypothesis seven examines the relationship between crime in the surrounding community and disorder in urban schools. This is based on the idea that crime is more prevalent in urban communities; therefore, it is believed that there is an increased probability of it infiltrating schools within said communities. On the contrary, the opposite is true for schools in rural areas. As such, hypothesis eight tests the relationship between crime in the community and disorder in rural schools.

Hypothesis 7: High levels of crime in the surrounding location are significantly related to increased school misconduct in urban schools.

Hypothesis 8: High levels of crime in the surrounding location are not significantly related to increased school misconduct in rural schools.
Stages of Analysis

**Univariate statistics.** Frequencies and descriptive statistics were calculated to identify basic demographic information about the urban and rural samples. Measures of central tendency and dispersion were also computed for the independent variables in relation to each sample, as well as the individual dependent variable. Results from measures of central tendency indicate urban and rural schools’ average levels of disorder, levels of security, and levels of disorganization. Measures of dispersion illustrate how dispersed a specific portion of the data is, which in essence, is how far away averages for a given measure fall from the mean. As will be discussed in the multivariate section, issues regarding over-dispersion of the dependent variable determine the types of analyses that should be conducted (Cameron & Trivedi, 2013; Hilbe, 2011). This is because over-dispersion of the dependent measures has the ability to skew Pearson correlation coefficients (Chen & Popovich, 2002; de Vaus, 2002).

**Bivariate statistics.** Bivariate correlations were computed to examine the significance of the relationships that exist between each of the independent variables—sixteen (16) different measures of disorganization and security. This helps to ensure that various measures are not indicating a relationship opposite of what would otherwise be expected. However, as will be discussed in the following chapter, there are some fundamental problems associated with this due to preexisting conditions within schools.

Bivariate correlations were also used as a precautionary measure to confirm that there were no complications regarding multicollinearity between independent variables. Multicollinearity between independent measures is problematic because it suggests that two variables are measuring the same item to such an extent that it allows for biased Pearson correlation coefficients within the multivariate analysis (Berry & Feldman, 1985). As a result,
this could indicate a false association or misrepresent the actual strength and/or direction of the relationship between the dependent measure and either of the independent measures (Berry & Feldman, 1985).

It is important to note that due to the fact the dependent measure was composed of over-dispersed count data, it was not included in the calculation of bivariate correlations. This serves two purposes: (1) Pearson correlation coefficients could be biased as a result of over-dispersion in the dependent measure; and (2) the type of multivariate analysis being used better controls for over-dispersion in the dependent measure. Thus, it would be more appropriate to include school misconduct in the multivariate analysis, which is discussed more thoroughly in the following section.

**Multivariate statistics.** Regression functions on the basis that it allows researchers to simultaneously regress multiple independent measures against a dependent measure. Negative binomial regression was employed in the current study due to preexisting characteristics within the data being utilized. Because the dependent measure, school misconduct, was composed of over-dispersed count data, ordinary least squares regression (OLS) was inappropriate for the analysis. This is because OLS regression assumes that the dependent measure is continuous and normally distributed (Gardner, Mulvey, & Shaw, 1995; Hardin & Hilbe, 2012). However, numerous schools featured extremely low or high rates of school misconduct, which meant it was unlikely that the dependent measure was normally distributed.

That being said, there are two types of regression suitable for analyzing the over-dispersed count data: Poisson regression and negative binomial regression. As described by Hilbe (2011), the latter is more appropriate when the dependent measure is over-dispersed, featuring a variance that is larger than the mean. Descriptive statistics indicated that school
misconduct was indeed composed of over-dispersed data, making negative binomial regression
the ideal method of multivariate analysis within the current study.

Summary

Having provided an overview of the data, its origin, independent and dependent
measures, along with the analytic strategy employed in the current study, the following chapter
will discuss results from the analysis. As will be seen, these results are explained in sequential
order, starting with univariate statistics, transitioning to bivariate, and ending with multivariate.
In addition, results are further divided along lines of urbanicity. In other words, urban and rural
schools are examined as two separate groups, then a third group contains both urban and rural
schools rather than distinguishing between them. Analyses are conducted for each of these
groups in order to determine the true differential impact of various environmental and
organizational factors on school misconduct incidence.
CHAPTER 4
RESULTS

Introduction

This chapter will highlight results from the univariate, bivariate, and multivariate analyses conducted as part of the current study. Initially, descriptive statistics were calculated for each of the relevant measures, including the dependent and independent variables. Specifically, descriptive statistics were calculated in three distinct series based on the primary classification variable—urbanicity. Data for urban and rural schools were combined and included in the first wave of descriptive calculations. Subsequently, descriptive statistics were calculated for rural and urban schools in two separate waves. A complete summary of these figures can be found in Tables 5 (combined schools), 6 (urban schools), and 7 (rural schools) throughout the following section.

Bivariate correlations were also calculated to test for issues related to multicollinearity and to determine the extent of the relationships between each of the independent measures. Lastly, multivariate analyses were conducted to examine the relationships between school misconduct in urban and rural schools and the various independent measures associated with each theoretical framework. Summaries of the findings can be found in Tables 10 (combined schools), 11 (urban schools), and 12 (rural schools).

Descriptive Statistics

The first step within this analysis was to calculate descriptive statistics. In relation to the dependent measure in the combined analysis, the average school reported approximately 105 incidents of disciplinary actions for various types of school misconduct \( (n=2,560; \bar{x} = 105.28) \). When calculated separately, urban schools reported approximately 129 cases of disciplinary
actions for student disorder (n=1,493; $\bar{x} = 129.24$), while rural schools reported approximately 71 cases (n=1,067; $\bar{x} = 71.75$). These findings indicate that urban schools are generally characterized by higher counts of disciplinary actions for various types of school misconduct. However, there is a significant amount of variation in the frequency counts for this measure, which range from zero (0) to 8,848. As such, it is necessary to examine the normality of the distribution. Measures of dispersion for the combined analysis indicate that the variance ($\sigma^2=117,868.62$) is larger than the mean, which suggests that the data is over-dispersed. As described in the previous chapter, negative binomial regression is ideal when conducting analyses of over-dispersed count data (Hilbe, 2011). Thus, this form of regression will be utilized in examining the relationship between school misconduct and the various measures associated with routine activity and social disorganization theory.

Combined Schools-Disorganization Measures

In relation to the social disorganization measures, the average school reported a mean of ($\bar{x} = 2.78$) for percentage minority students, which indicates that the actual percentage of minority students was approaching 20 percent. This is determined by examining how the variable was originally coded: 1=less than 5 percent; 2=5 to 20 percent; 3=20 to 50 percent; 4=more than 50 percent. In addition, the average percentage of limited English proficient students was determined to be approximately nine percent ($\bar{x} = 8.73$). Thus, these substitutive measures of ethnic heterogeneity indicate that the average school is neither completely heterogeneous nor homogeneous in relation to ethnic composition.

Another measure of disorganization, efforts limited by inadequate funds, was used as a substitute measure of poverty for each school. In the combined analysis, results indicated that inadequate funding was at least partially responsible for limiting efforts to reduce or prevent
crime within schools ($\bar{x} = 2.10$). This finding should be interpreted as follows: 1=does not limit; 2=limits in a minor way; 3=limits in a major way. Thus, the average respondent felt that their school’s efforts to reduce and prevent crime were at least somewhat limited due to funding.

The amount of crime in the areas surrounding schools, school size, and percentage of daily attendance were also included as measures of disorganization. The amount of crime in areas surrounding schools was included in the analysis due to the possibility that it could have a direct impact on the level of crime within schools themselves. As discussed in Chapter two, this phenomenon is referred to as spillover. Results indicated that most respondents believed the level of crime surrounding their schools fell somewhere between low and moderate ($\bar{x} = 1.31$) based on the following coding technique: (1=low; 2=moderate; 3=high). School size and percentage daily attendance were included within the analysis as alternative measures of population mobility. Although these are not ideal measures, they serve the intended purpose by indicating the number of students moving throughout a given school. With that being said, results illustrated that slightly more than 93 percent of students came to school on a daily basis ($\bar{x} = 93.33$), and that the average school contained approximately 500 students ($\bar{x} = 2.90$). This was determined by examining the following method of coding: 1=less than 300 students; 2=between 300 and 499 students; 3=between 500 and 999 students; 4=more than 1,000 students.

### Combined Schools-Security Measures

As described in the previous chapter, respondents were asked whether or not various security measures were implemented at their respective institutions (0=no; 1=yes). These forms of security were utilized as alternative measures of routine activity. Results indicated that student identification badges ($\bar{x} = 0.14$) and metal detectors ($\bar{x} = 0.03$) were among the least commonly implemented security measures. On the contrary, visitor check-in ($\bar{x} = 0.99$), locked doors ($\bar{x} = $
0.88), and staff radios ($\bar{x} = 0.75$) were among the most commonly implemented. The five remaining security measures—school resource officers/security guards, security cameras, lockers provided to students, strict dress codes, and being closed for lunch—had averages that fell between 0.61 and 0.70, which indicates that approximately two-thirds of schools implemented said measures. Table 5 provides a full summary of these findings on the following page.
<table>
<thead>
<tr>
<th>Measure</th>
<th>Mean</th>
<th>SD</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent Measure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School Misconduct</td>
<td>105.28</td>
<td>343.32</td>
<td>0.00</td>
<td>8848.00</td>
<td>14.14</td>
<td>275.31</td>
</tr>
<tr>
<td><strong>Disorganization Measures</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crime-School</td>
<td>1.31</td>
<td>0.57</td>
<td>1.00</td>
<td>3.00</td>
<td>1.71</td>
<td>1.90</td>
</tr>
<tr>
<td>School Size</td>
<td>2.90</td>
<td>0.97</td>
<td>1.00</td>
<td>4.00</td>
<td>-0.54</td>
<td>-0.68</td>
</tr>
<tr>
<td>Minority Student</td>
<td>2.78</td>
<td>1.05</td>
<td>1.00</td>
<td>4.00</td>
<td>-0.26</td>
<td>-1.20</td>
</tr>
<tr>
<td>Inadequate Funds</td>
<td>2.10</td>
<td>0.78</td>
<td>1.00</td>
<td>3.00</td>
<td>-0.18</td>
<td>-1.34</td>
</tr>
<tr>
<td>Eng. Proficient</td>
<td>8.73</td>
<td>14.74</td>
<td>0.00</td>
<td>100.00</td>
<td>2.81</td>
<td>8.95</td>
</tr>
<tr>
<td>Daily Attendance</td>
<td>93.33</td>
<td>6.84</td>
<td>2.00</td>
<td>100.00</td>
<td>-7.37</td>
<td>79.07</td>
</tr>
<tr>
<td><strong>Security Measures</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRO/Guard</td>
<td>0.66</td>
<td>0.47</td>
<td>0.00</td>
<td>1.00</td>
<td>-0.69</td>
<td>-1.52</td>
</tr>
<tr>
<td>Staff Radios</td>
<td>0.75</td>
<td>0.43</td>
<td>0.00</td>
<td>1.00</td>
<td>-1.17</td>
<td>-0.64</td>
</tr>
<tr>
<td>Security Cameras</td>
<td>0.67</td>
<td>0.47</td>
<td>0.00</td>
<td>1.00</td>
<td>-0.71</td>
<td>-1.50</td>
</tr>
<tr>
<td>Student Badges</td>
<td>0.14</td>
<td>0.35</td>
<td>0.00</td>
<td>1.00</td>
<td>2.08</td>
<td>2.32</td>
</tr>
<tr>
<td>Lockers Provided</td>
<td>0.69</td>
<td>0.46</td>
<td>0.00</td>
<td>1.00</td>
<td>-0.83</td>
<td>-1.32</td>
</tr>
<tr>
<td>Strict Dress Code</td>
<td>0.61</td>
<td>0.49</td>
<td>0.00</td>
<td>1.00</td>
<td>-0.46</td>
<td>-1.79</td>
</tr>
<tr>
<td>Closed for Lunch</td>
<td>0.70</td>
<td>0.46</td>
<td>0.00</td>
<td>1.00</td>
<td>-0.88</td>
<td>-1.22</td>
</tr>
<tr>
<td>Metal Detectors</td>
<td>0.03</td>
<td>0.16</td>
<td>0.00</td>
<td>1.00</td>
<td>6.04</td>
<td>34.48</td>
</tr>
<tr>
<td>Locked Doors</td>
<td>0.88</td>
<td>0.32</td>
<td>0.00</td>
<td>1.00</td>
<td>-2.39</td>
<td>3.73</td>
</tr>
<tr>
<td>Visitor Check-in</td>
<td>0.99</td>
<td>0.09</td>
<td>0.00</td>
<td>1.00</td>
<td>-11.19</td>
<td>123.25</td>
</tr>
</tbody>
</table>

Table 5: Combined Schools-Descriptive Statistics
Urban Schools-Disorganization Measures

In relation to the social disorganization measures used in the current study, the average urban school reported a mean of $\bar{x} = 3.10$ for *percentage minority students*, which indicates that the actual percentage of minority students was well over 20 percent when analyzed separately. This can be determined in the same manner discussed previously, by examining how the variable was originally coded: 1=less than 5 percent; 2=5 to 20 percent; 3=20 to 50 percent; 4=more than 50 percent. In addition, the average *percentage of limited English proficient students* in urban schools was calculated at approximately 11.5 percent ($\bar{x} = 11.39$). Overall, these findings suggest similar conclusions to those found when examining combined urban and rural schools; however, they do suggest that *ethnic heterogeneity* is more prevalent in urban schools.

*Efforts limited by inadequate funds* was also used as an alternative measure of *poverty* in urban schools. Results mimicked those found in the combined calculation ($\bar{x} = 2.09$), indicating that efforts to reduce and prevent crime in urban schools was at least partially limited due to inadequate funding. This conclusion can also be understood by examining how the variable was coded within the initial survey: 1=does not limit; 2=limits in a minor way; 3=limits in a major way. Ultimately, findings indicated that respondents from urban schools believed funding had a direct and meaningful impact on the ability to control crime and disorder within their institutions.

To allow for comparison, the *amount of crime in areas surrounding schools, school size, and percentage of daily attendance* were included again as measures of social disorganization in urban schools. Results showed that the amount of crime in areas surrounding urban schools was only perceived to be slightly higher that that reported in the combined analysis ($\bar{x} = 1.42$), still falling somewhere between low and moderate. It is important to note, however, that crime is more prevalent in urban communities based on these findings.
Again, school size and percentage daily attendance in urban schools were included as alternative measures of population mobility. Similar to the combined analysis, approximately 93 percent of urban students came to school on a daily basis ($\bar{x} = 93.01$). School size increased slightly in comparison to the combined schools analysis ($\bar{x} = 3.14$), indicating that urban schools contain somewhere between 500 and 999 students on average. Once again, school size was reported as follows: 1=less than 300 students; 2=between 300 and 499 students; 3=between 500 and 999 students; 4=more than 1,000 students. This finding is important when considering the impact that larger student populations have on levels of school misconduct as a measure of disorganization.

**Urban Schools-Security Measures**

An analysis of security measures in urban schools indicated that the most prevalent forms of security were *visitor check-in* ($\bar{x} = 0.99$), *locked doors* ($\bar{x} = 0.90$), *staff radios* ($\bar{x} = 0.79$), and *school resource officers/security guards* ($\bar{x} = 0.72$). Each of these security measures were slightly more prevalent in urban schools as compared to the combined schools analysis. The least common security measures remained the same: *metal detectors* ($\bar{x} = 0.04$) and *student identification badges* ($\bar{x} = 0.18$); however, these were still slightly more prevalent in urban schools. Fluctuations in the remaining forms of security were relatively small and insignificant: *security cameras* ($\bar{x} = 0.66$), *lockers provided* ($\bar{x} = 0.64$), *strict dress code* ($\bar{x} = 0.63$), and *closed for lunch* ($\bar{x} = 0.70$). Thus, it remained that approximately two-thirds of urban schools implemented said measures. Table 6 provides a full summary of these findings on the following page.
Table 6: *Urban Schools-Descriptive Statistics*

<table>
<thead>
<tr>
<th>Measure</th>
<th>Mean</th>
<th>SD</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent Measure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School Misconduct</td>
<td>129.24</td>
<td>401.48</td>
<td>0.00</td>
<td>8848.00</td>
<td>12.58</td>
<td>215.97</td>
</tr>
<tr>
<td>Crime-School</td>
<td>1.42</td>
<td>0.65</td>
<td>1.00</td>
<td>3.00</td>
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</tr>
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<td>-1.37</td>
</tr>
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<td>100.00</td>
<td>2.34</td>
<td>6.03</td>
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<td>2.00</td>
<td>100.00</td>
<td>-6.76</td>
<td>65.11</td>
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<td></td>
</tr>
<tr>
<td>SRO/Guard</td>
<td>0.72</td>
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<td>1.00</td>
<td>-0.97</td>
<td>-1.05</td>
</tr>
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<td>Staff Radios</td>
<td>0.79</td>
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<td>1.00</td>
<td>-1.40</td>
<td>-0.03</td>
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<tr>
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<td>0.00</td>
<td>1.00</td>
<td>-0.66</td>
<td>-1.57</td>
</tr>
<tr>
<td>Student Badges</td>
<td>0.18</td>
<td>0.38</td>
<td>0.00</td>
<td>1.00</td>
<td>1.67</td>
<td>0.77</td>
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<tr>
<td>Lockers Provided</td>
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<td>0.48</td>
<td>0.00</td>
<td>1.00</td>
<td>-0.59</td>
<td>-1.65</td>
</tr>
<tr>
<td>Strict Dress Code</td>
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<td>0.00</td>
<td>1.00</td>
<td>-0.52</td>
<td>-1.73</td>
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<td>0.00</td>
<td>1.00</td>
<td>-0.88</td>
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<td>1.00</td>
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<td>Visitor Check-in</td>
<td>0.99</td>
<td>0.07</td>
<td>0.00</td>
<td>1.00</td>
<td>-13.57</td>
<td>182.24</td>
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</table>
Rural Schools—Disorganization Measures

Social disorganization measures were also examined separately in relation to rural schools. The average percentage of minority students was calculated at ($\bar{x} = 2.32$), which indicates that minority students are less common on average in rural schools. With a mean of approximately 2.3, the percentage of minority students in rural schools falls slightly below the 10 percent mark based on the method of coding: 1=less than 5 percent; 2=5 to 20 percent; 3=20 to 50 percent; 4=more than 50 percent. The percentage of limited English proficient students in rural schools was calculated at 5 percent on average, which is also indicative of fewer minority students. Thus, it appears that ethnic heterogeneity is less prevalent in rural schools, which suggests that it could be less impactful in regard to school misconduct.

Efforts limited by inadequate funds was used to measure the effects of poverty on levels of school misconduct in rural areas. Findings revealed that limited efforts to reduce and prevent crime did not differ greatly compared to urban schools; although they were marginally higher at ($\bar{x} = 2.12$), which indicates a moderate effect based on the method of coding: 1=does not limit; 2=limits in a minor way; 3=limits in a major way. Ultimately, these findings suggest that administrators in rural schools are slightly more limited in their ability to combat crime due to issues associated with funding.

The amount of crime in areas surrounding schools was calculated at ($\bar{x} = 1.14$), which is less than that observed in urban areas. This indicates that on average there are lower amounts of crime within the communities surrounding rural schools, which suggests that less crime has the ability to spill over into rural schools as a result. In addition, school size and percentage daily attendance were included as substitute measures of population mobility. Approximately 94 percent of students were reported to attend school on a regular basis in rural areas ($\bar{x} = 93.79$),
which is only slightly higher than that observed in urban schools. School size decreased on average in rural schools, which is to be expected ($\bar{x} = 2.55$). This finding indicates that rural schools are composed of approximately 400 students on average based on the method of coding: 1=less than 300 students; 2=between 300 and 499 students; 3=between 500 and 999 students; 4=more than 1,000 students. Thus, with fewer students and less mobility in rural schools, it is possible that less crime could be expected.

**Rural Schools-Security Measures**

The most prevalent security measures in rural schools changed slightly, specifically with the inclusion of *lockers provided* to students ($\bar{x} = 0.76$). This finding was unique to rural schools only. Similar to that observed in the combined schools and urban schools analyses, *visitor check-in* ($\bar{x} = 0.99$) and *locked doors* ($\bar{x} = 0.86$) were also highly prevalent in rural schools. The least common forms of security included *metal detectors* ($\bar{x} = 0.01$) and *student badges* ($\bar{x} = 0.08$), which were still less prevalent than that observed in urban schools. The remaining five security measures included: *school resource officers/security guards* ($\bar{x} = 0.59$), *staff radios* ($\bar{x} = 0.70$), *security cameras* ($\bar{x} = 0.68$), *strict dress codes* ($\bar{x} = 0.59$), and *closed for lunch* ($\bar{x} = 0.70$). These results indicate that approximately 60 to 70 percent of rural schools implemented these measures of security. Table 7 provides a full summary of these findings on the following page. With a general overview of the data being provided through the use of descriptive statistics, bivariate correlations will be discussed in the following section.
<table>
<thead>
<tr>
<th>Measure</th>
<th>Mean</th>
<th>SD</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Skewness</th>
<th>Kurtosis</th>
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<td>6071.00</td>
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<td>Crime-School</td>
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<td>3.00</td>
<td>2.79</td>
<td>7.50</td>
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<tr>
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<td>1.00</td>
<td>4.00</td>
<td>-0.18</td>
<td>-1.00</td>
</tr>
<tr>
<td>Minority Student</td>
<td>2.32</td>
<td>1.05</td>
<td>1.00</td>
<td>4.00</td>
<td>0.24</td>
<td>-1.13</td>
</tr>
<tr>
<td>Inadequate Funds</td>
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<td>0.77</td>
<td>1.00</td>
<td>3.00</td>
<td>-0.21</td>
<td>-1.29</td>
</tr>
<tr>
<td>Eng. Proficient</td>
<td>5.00</td>
<td>10.96</td>
<td>0.00</td>
<td>96.00</td>
<td>4.13</td>
<td>20.39</td>
</tr>
<tr>
<td>Daily Attendance</td>
<td>93.79</td>
<td>5.59</td>
<td>7.00</td>
<td>100.00</td>
<td>-8.51</td>
<td>112.13</td>
</tr>
<tr>
<td>SRO/Guard</td>
<td>0.59</td>
<td>0.49</td>
<td>0.00</td>
<td>1.00</td>
<td>-0.35</td>
<td>-1.88</td>
</tr>
<tr>
<td>Staff Radios</td>
<td>0.70</td>
<td>0.46</td>
<td>0.00</td>
<td>1.00</td>
<td>-0.88</td>
<td>-1.22</td>
</tr>
<tr>
<td>Security Cameras</td>
<td>0.68</td>
<td>0.47</td>
<td>0.00</td>
<td>1.00</td>
<td>-0.79</td>
<td>-1.38</td>
</tr>
<tr>
<td>Student Badges</td>
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<td>0.00</td>
<td>1.00</td>
<td>3.02</td>
<td>7.12</td>
</tr>
<tr>
<td>Lockers Provided</td>
<td>0.76</td>
<td>0.43</td>
<td>0.00</td>
<td>1.00</td>
<td>-1.21</td>
<td>-0.54</td>
</tr>
<tr>
<td>Strict Dress Code</td>
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<td>0.49</td>
<td>0.00</td>
<td>1.00</td>
<td>-0.38</td>
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<tr>
<td>Closed for Lunch</td>
<td>0.70</td>
<td>0.46</td>
<td>0.00</td>
<td>1.00</td>
<td>-0.88</td>
<td>-1.23</td>
</tr>
<tr>
<td>Metal Detectors</td>
<td>0.01</td>
<td>0.09</td>
<td>0.00</td>
<td>1.00</td>
<td>10.77</td>
<td>114.10</td>
</tr>
<tr>
<td>Locked Doors</td>
<td>0.86</td>
<td>0.35</td>
<td>0.00</td>
<td>1.00</td>
<td>-2.07</td>
<td>2.29</td>
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<tr>
<td>Visitor Check-in</td>
<td>0.99</td>
<td>0.11</td>
<td>0.00</td>
<td>1.00</td>
<td>-9.28</td>
<td>84.33</td>
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</table>
The second step in this series of analyses involves presenting the bivariate correlations that exist between variables to be included in the multivariate analyses. At this stage in the data analysis, correlations between the dependent and independent measures are typically examined. However, examining the relationships that exist between the dependent measure and various independent measures offers little in relation to the current study. This is because the dependent measure is composed of over-dispersed count data; as such, it is likely that the resulting Pearson correlation coefficients would be biased. This is primarily because Pearson correlations assume that each of the two variables being equated is normally distributed (de Vaus, 2002; Havlicek, & Peterson, 1977). The current measure for school misconduct does not meet this assumption because the calculated variance ($\sigma^2=117,868.62$) is considerably larger than the mean ($\bar{x} = 105.28$). Examining the relationships that exist between each of the independent measures, however, does provide some useful insight in two meaningful ways.

First, bivariate correlations explain the direction, strength, and significance of the relationships that exist between two measures. It is also useful when determining whether measures associated with separate theoretical frameworks are predictive of similar relationships. In other words, it ensures that given measures of disorganization and security are not indicating an opposite relationship in regard to another variable. In the current study, it appears that measures of social disorganization and routine activity may be able to work in unison. For example, efforts limited by inadequate funding, percent minority, percent daily attendance, crime surrounding the school and school size are significantly related to the use of school resource officers/security guards. Furthermore, each of these relationships exists in the direction that the relevant criminological theories appear to suggest. In addition, percent minority, school size, and
crime surrounding the school were significantly related to the use of student identification badges, lockers being provided, and strict dress codes. Thus, it appears that schools, which implement various security measures, are characterized by elements of disorganization as well. In light of this apparent relationship, it is possible that social disorganization theory and routine activity theory may work together to predict increased levels of school misconduct. Accordingly, combining the predictors associated with each theory in the multivariate analysis should allow for a better understanding of how they impact crime and disorder within schools.

The second benefit of calculating bivariate correlations rests on the ability to test for multicollinearity prior to the multivariate analysis (Marsh, Dowson, Pietsch, & Walker, 2004). Multicollinearity is a statistical phenomenon that exists when two variables are too closely related. In other words, two separate variables are measuring the same concept to such an extent that it allows for the possibility of biased Pearson correlation coefficients in the multivariate analysis via inflated standard errors (Marsh, Dowson, Pietsch, & Walker, 2004). As can be seen in Table 8 on the following page, this does not appear to be a problem within the current study. This is because there is no relationship with a coefficient greater than 0.80, which is commonly considered to be the threshold for variables that are too closely related (Marsh, Dowson, Pietsch, & Walker, 2004). The strongest relationships exist between school size and school resource officers (r=0.44; p<0.01); percent limited English proficient students and percent minority students (r=0.45; p<0.01); as well as crime where school is located and percent minority students (r=0.43; p<0.01). Table 8 provides a full summary of these results on the following page.
### Table 8: Bivariate Correlations

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<tr>
<th>Measure</th>
<th>1</th>
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<th>4</th>
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<th>6</th>
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<th>12</th>
<th>13</th>
<th>14</th>
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<tbody>
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<td>1. SRO/Guard</td>
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<td></td>
<td></td>
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<tr>
<td>2. Staff Radios</td>
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<td>3. Security Cam.</td>
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<td>.06**</td>
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<td>.09**</td>
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<td>.06**</td>
<td>.13**</td>
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<td>.12**</td>
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<td>.05**</td>
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<td>.06**</td>
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<td>.14**</td>
<td>.12**</td>
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<td>.03</td>
<td>--</td>
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<td>.20**</td>
<td>.18**</td>
<td>.15**</td>
<td>.08**</td>
<td>.04*</td>
<td>.04</td>
<td>-.03</td>
<td>.08**</td>
<td>.05**</td>
<td>--</td>
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<tr>
<td>13. Per. Minority</td>
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<td>-.05*</td>
<td>-.15**</td>
<td>-.03</td>
<td>.03</td>
<td>.02</td>
<td>-.16**</td>
<td>-.01</td>
<td>.03</td>
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<td>-.08**</td>
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<td>.05**</td>
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<td>.07**</td>
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<td>-.02</td>
<td>.08**</td>
<td>-.05*</td>
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<td></td>
</tr>
</tbody>
</table>

Note: **p<0.01; *p<0.05
Multivariate Analysis

Step three of the analysis included nine separate negative binomial regression models that were developed to test the differential effect that the theory-based independent measures had on levels of school misconduct in urban and rural schools. Models one, two, and three are combined models that included both urban and rural schools. Models four, five, and six included only urban schools. Lastly, models seven, eight, and nine included only rural schools. Within each series of regression models the effect of the independent measures associated with routine activity theory were examined separately. This same process was repeated using only the independent measures associated with social disorganization theory. Finally, the independent measures associated with each theory were combined to examine their simultaneous impact on levels of school misconduct. These models are discussed in more detail throughout the following sections. Table 9 on the following page provides a full summary of the models used in the current study.
### Table 9: Model Summary

<table>
<thead>
<tr>
<th>Schools Included</th>
<th>Disorganization Measures</th>
<th>Security Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Urban and Rural Schools</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 1</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Model 2</td>
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</tr>
<tr>
<td>Model 3</td>
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<td>*</td>
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<td><strong>Urban Schools Only</strong></td>
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<td>Model 4</td>
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<td>Model 5</td>
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<tr>
<td>Model 6</td>
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<td>*</td>
</tr>
<tr>
<td><strong>Rural Schools Only</strong></td>
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</tr>
<tr>
<td>Model 7</td>
<td></td>
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<tr>
<td>Model 8</td>
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<td>*</td>
</tr>
<tr>
<td>Model 9</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

*measures included in analysis

### Combined Schools Models (1, 2, and 3)

Models one, two, and three serve as a baseline for comparison between the remaining six models. In other words, results from these combined models allow for a better understanding of how the effects of the independent measures associated with each theory differ between urban and rural schools in later analyses. As such, each of the 16 predictor variables were simultaneously regressed upon the dependent measure—*school misconduct*. A summary of these analyses can be found in Table 10. Diagnostics for each of these models reveal that negative
binomial regression is the preferred method of analysis in regard to the over-dispersed count data being utilized in the current study. Diagnostics for each model were calculated as follows:

- Model 1: \( \alpha = 1.95; \chi^2 = 5.1 \times 10^5; p < 0.01 \)
- Model 2: \( \alpha = 2.11; \chi^2 = 5.7 \times 10^5; p < 0.01 \)
- Model 3: \( \alpha = 1.80; \chi^2 = 4.8 \times 10^5; p < 0.01 \)

The likelihood ratios associated with each model are also significant, which suggests a statistically significant relationship between at least one of the independent measures and school misconduct in each model. The likelihood ratios and levels of significance associated with each model were calculated as follows:

- Model 1: LR \( \chi^2 = 789.95; p < 0.01 \)
- Model 2: LR \( \chi^2 = 553.76; p < 0.01 \)
- Model 3: LR \( \chi^2 = 1,045.33; p < 0.01 \)

**Model 1.** The first model in the combined schools analysis focused solely on measures of disorganization within schools, eliminating measures of security. Paralleling model three, which will be discussed subsequently, five of the six measures of disorganization were significantly related to increases in school misconduct. *Crime where schools are located* \( (\beta = 0.36; p < 0.01) \), *school size* \( (\beta = 0.66; p < 0.01) \), and *percentage of minority students* \( (\beta = 0.23; p < 0.01) \) were positively associated with increases in disorder. This suggests that as schools become subjected to increased levels of disorganization, they are likely to experience higher levels of crime and disorder. Likewise, the *percentage of daily attendance* \( (\beta = -0.04; p < 0.01) \) exhibited a negative relationship. Although this association was somewhat weak, it still suggests that disorder increases as the percentage of attendance decreases.

Interestingly, the direction of the association between efforts limited by inadequate
funding and school misconduct was inverted in this model as compared to model three ($\beta = -0.17$; $p<0.01$). This suggests that as inadequate funding decreases or becomes less problematic, school misconduct increases. Such an advancement appears to contradict what would otherwise be supported by social disorganization theory. Thus, the association between this measure of disorganization and the dependent measure will be examined more thoroughly in subsequent models.

**Model 2.** The second model in this analysis focused specifically on the ten independent measures of security, removing disorganization measures. Results indicated that nine of the ten measures were significantly related to increases in levels of school misconduct; however, there were two relationships unique to this model. First, the association between metal detectors and school misconduct completely dissipated, as opposed to model three. Although results indicated the relationship was still negative ($\beta = -0.09$), it diminished considerably and was not significant. Second, unlike model three, requiring visitor check-in was significantly and positively related to increases in disorder ($\beta = 0.71$; $p<0.01$). However, it is quite possible that schools experiencing higher levels of disorder are likely to have already implemented this form of security. This relationship will be examined more thoroughly in later models that are specific to either urban or rural schools.

As for the remaining variables in this model, the nature of their association with levels of school misconduct—whether positive or negative—paralleled model three (results from model three are discussed in the following section). However, certain coefficients were considerably different. Specifically, the association between school resource officers/security guards and school misconduct more than doubled ($\beta = 1.28$; $p<0.01$). This finding also provides support to the notion that schools with previously existing high crime rates were likely to have already
implemented this type of security.

**Model 3.** Results from model three indicated that five of the six disorganization measures were significantly related to increased levels of school misconduct. First, *crime where schools are located* boasted a significant and positive association, indicating that schools in high-crime areas experience higher levels of disorder ($\beta=0.33; p<0.01$). Second, *school size* was strongly and positively related to school misconduct ($\beta=0.49; p<0.01$). This finding could indicate that as school size increases, so does the overall level of disorder within schools, which provides some support to the notion that *population mobility* leads to increased levels of crime. With more students moving throughout a given school, there is inherently more mobility in and out of certain areas. Third, the *percentage of daily attendance* was found to be significantly and negatively related to school misconduct ($\beta=-0.03; p<0.01$); however, the association between these two measures was somewhat weak. Regardless, this finding appears to indicate that as daily attendance decreases the amount of disorder within schools increases slightly.

Fourth, the *percentage of minority students* was found to be moderately and positively related to incidence of school misconduct ($\beta=0.26; p<0.01$). This suggests that as *ethnic heterogeneity* increases so do levels of disorder, as proposed by social disorganization theory. Lastly, *efforts limited by inadequate funding* was moderately and positively associated with increases in school misconduct incidents ($\beta=0.23; p<0.01$). This finding provides support to the idea that *poverty* leads to increases in crime, which is also suggested by social disorganization theory. However, this finding should be viewed with caution due to the fact that “inadequate funding” does not necessarily reflect poverty within the relevant student population.

Results from model three also indicated that nine of the ten independent security measures included in the current study were significantly related to increases in school
misconduct. These findings appear to suggest that as security increases, so does the overall level of crime within a given school. However, that is quite possibly not the case; it is more likely that schools with higher rates of disorder had already implemented various forms of security to compensate for high levels of crime. Due to the fact that a pre-test could not be conducted, a true experimental design was not possible. As such, the actual nature of the relationship between security and school misconduct cannot be fully understood. However, it is still possible to determine the differential effects of security measures between urban and rural schools, allowing for further analysis at a later time.

Interestingly, two of the nine related security measures exhibited a significant and opposite relationship in comparison to model two. These two variables were visitor check-in ($\beta = 0.71; p < 0.05$) and the use of metal detectors ($\beta = -0.52; p < 0.01$). These findings suggest that as the use of metal detectors decreases and visitor check-in increases, the amount of disorder in each school increases. That being said, this appears to contradict earlier findings regarding these security measures. As such, it raises the question as to why these specific measures depict an opposite relationship, which will be discussed in more detail as subsequent models are examined. A full summary of results regarding the previous three models can be found in Table 10 on the following page.
<table>
<thead>
<tr>
<th>Measure</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\beta$</td>
<td>SE</td>
<td>$p &gt;</td>
</tr>
<tr>
<td>Crime-School</td>
<td>0.36**</td>
<td>0.06</td>
<td>0.000</td>
</tr>
<tr>
<td>School Size</td>
<td>0.66**</td>
<td>0.03</td>
<td>0.000</td>
</tr>
<tr>
<td>Daily Att.</td>
<td>-0.04**</td>
<td>0.01</td>
<td>0.000</td>
</tr>
<tr>
<td>Per. Minority</td>
<td>0.23**</td>
<td>0.03</td>
<td>0.000</td>
</tr>
<tr>
<td>Inad. Funding</td>
<td>-0.17**</td>
<td>0.04</td>
<td>0.000</td>
</tr>
<tr>
<td>Limited Eng.</td>
<td>0.00</td>
<td>0.00</td>
<td>0.709</td>
</tr>
<tr>
<td>SRO/Guard</td>
<td>- --</td>
<td>- --</td>
<td>-</td>
</tr>
<tr>
<td>Staff Radios</td>
<td>- --</td>
<td>- --</td>
<td>-</td>
</tr>
<tr>
<td>Security Cam.</td>
<td>- --</td>
<td>- --</td>
<td>-</td>
</tr>
<tr>
<td>Student Badge</td>
<td>- --</td>
<td>- --</td>
<td>-</td>
</tr>
<tr>
<td>Lockers Prov.</td>
<td>- --</td>
<td>- --</td>
<td>-</td>
</tr>
<tr>
<td>Strict Dress</td>
<td>- --</td>
<td>- --</td>
<td>-</td>
</tr>
<tr>
<td>Closed Lunch</td>
<td>- --</td>
<td>- --</td>
<td>-</td>
</tr>
<tr>
<td>Metal Detect.</td>
<td>- --</td>
<td>- --</td>
<td>-</td>
</tr>
<tr>
<td>Locked Doors</td>
<td>- --</td>
<td>- --</td>
<td>-</td>
</tr>
<tr>
<td>Visitor Check</td>
<td>- --</td>
<td>- --</td>
<td>-</td>
</tr>
<tr>
<td>-2 Log Like</td>
<td>13,218.87</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>ln $\alpha$</td>
<td>0.67</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>$\alpha$</td>
<td>1.95**</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>LR $\chi^2$</td>
<td>789.95 (p&lt;0.01)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Note: **$p<0.01$; *$p<0.05$
Urban Schools Models (4, 5, and 6)

Table 11 contains a full summary of results for the urban school models within this section of the analysis. These models (four, five, and six) were designed to test the following research hypotheses:

- Hypothesis 1: School disorganization is significantly related to security measures in urban schools.
- Hypothesis 3: School security is not significantly related to disorder in urban schools.
- Hypothesis 5: School disorganization is significantly related to disorder in urban schools.
- Hypothesis 7: High levels of crime in the surrounding location are significantly related to increased school misconduct in urban schools.

Similar to the first three models, the following three urban school models regress each of the 16 independent predictor variables upon the dependent measure—school misconduct. Again, diagnostics for each of these models indicate that negative binomial regression is the ideal method of analysis in light of the over-dispersed count data within the dependent measure. The calculated diagnostics for each model are as follows:

- Model 4: $\alpha=2.00; \chi^2=3.8e+05; p<0.01$
- Model 5: $\alpha=2.12; \chi^2=4.0e+05; p<0.01$
- Model 6: $\alpha=1.83; \chi^2=3.5e+05; p<0.01$

Also significant, the likelihood ratios associated with each model suggest there is a relationship between at least one of the independent measures and school misconduct. The first bulleted list on the following page contains the likelihood ratios and levels of significance associated with each model:
Model 4. The first urban schools model (model 4) focused on examining the impact that various types of disorganization have on the dependent measure—school misconduct. This model was constructed to test hypotheses five and seven, and to allow for comparison upon completing an analysis of the rural schools models in the following section. In addition, it allows for a better understanding of how security affects the direction and significance of the relationship between disorganization and delinquent behavior in urban schools. Paralleling previous models, results indicate that five of the six disorganization measures were significantly related to school misconduct. Crime where schools are located ($\beta=0.34; p<0.01$), school size ($\beta=0.78; p<0.01$), and percentage of minority students ($\beta=0.34; p<0.01$) remained positively associated with increased school misconduct. These results provide support to each of the research hypotheses within the analysis, indicating that disorganization in general, as well as crime within the surrounding community, are conducive to school misconduct. In addition, percentage of daily attendance ($\beta=-0.05; p<0.01$) and efforts limited by inadequate funding ($\beta=-0.17; p<0.01$) remained negatively associated with increases in the dependent measure. Although results from this model were significant and provided support to the relevant hypotheses, they did not vary from previous models. Thus, model four did not offer any unique findings in comparison.

Model 5. The fifth model focused specifically on security measures in urban schools, eliminating disorganization measures from the analysis. This model was designed to directly
respond to hypothesis three. Results indicated that only four of the ten measures of security maintain a statistically significant relationship when disorganization is eliminated from the analysis. These four measures include: school resource officers/security guards \((\beta=1.41; p<0.01)\), security cameras \((\beta=0.26; p<0.01)\), student identification badges \((\beta=0.44; p<0.05)\), and lockers provided \((\beta=0.31; p<0.01)\). Thus, certain security measures were no longer significantly related to disorder within the current model. These measures included metal detectors and closed lunch. With that being said, it appears that disorganization has a significant impact on security within urban schools, which provides support to the first research hypothesis. These results also dismiss hypothesis two, indicating that security is significantly related to school misconduct overall. Although, the direction of this relationships is opposite of what was expected. The reason for this unexpected finding will be discussed more thoroughly in the following chapter.

**Model 6.** This model was designed to respond to hypothesis one. Upon examining urban schools separately, results indicated that significant relationships existed between several of the related independent measures and school misconduct. Specifically, five of the six measures of disorganization and six of the ten measures of security boasted statistically significant relationships; however, these findings were somewhat different from those in the combined schools model (model 3). This section will begin by discussing the associations between disorganization measures and disorder, then follow up with separate discussions of security measures.

*Crime where schools are located* \((\beta=0.29; p<0.01)\), *school size* \((\beta=0.58; p<0.01)\), and *percentage of minority students* \((\beta=0.35; p<0.01)\) maintained significant and positive associations with increased levels of school misconduct. As before, these findings continue to provide support to the idea that as disorganization within urban schools increases so does the
overall level of disorder among students. In other words, *ethnic heterogeneity*, *population mobility*, and high-crime areas appear to be conducive to misconduct in urban student populations. Although, it should be noted that larger school sizes do not inherently reflect elevated rates of mobility.

Percentage of daily attendance ($\beta=-0.03$; $p<0.01$) and *efforts limited by inadequate funding* ($\beta=-0.26$; $p<0.01$) maintained negative relationships with increased levels of school misconduct. These findings indicate that as attendance and problems associated with funding decrease, school misconduct increases. These relationships appear to contradict what would be expected based on social disorganization theory. In other words, the results suggest that decreased “mobility” and lesser amounts of “poverty” lead to increased rates of misconduct in urban schools. It should be noted again, however, that these results should be viewed with caution, as they may not directly reflect the targeted variables within the analysis.

As for security measures in urban schools, several of the previously existing relationships from the model three dissipated. *Staff radios, strict dress codes, and locked doors* were no longer significantly related to levels of school misconduct. This indicates that including rural schools in the third model had a significant and inflating effect on these independent measures. On the contrary, *school resource officers/security guards* ($\beta=0.66$; $p<0.01$), *security cameras* ($\beta=0.26$; $p<0.01$), *student identification badges* ($\beta=0.20$; $p<0.05$), *lockers provided* ($\beta=0.55$; $p<0.01$), and *closed lunch* ($\beta=0.20$; $p<0.01$) maintained significant and positive relationships with rates of school misconduct.

Likewise, *metal detectors* ($\beta=-0.20$; $p<0.01$) maintained a significant and negative association with school misconduct. In light of these findings, it is likely that the nature of these relationships exists in the manner discussed previously. Rather than causing disorder, it is more
likely that these security measures were implemented as a response to disorder that already existed within urban schools. See Table 11 on the following page.
<table>
<thead>
<tr>
<th>Measure</th>
<th>Model 4</th>
<th></th>
<th></th>
<th>Model 5</th>
<th></th>
<th></th>
<th>Model 6</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\beta$</td>
<td>SE</td>
<td>$p &gt;</td>
<td>z</td>
<td>$</td>
<td>$\beta$</td>
<td>SE</td>
<td>$p &gt;</td>
<td>z</td>
</tr>
<tr>
<td>Crime-School</td>
<td>0.34**</td>
<td>0.07</td>
<td>0.000</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0.29**</td>
<td>0.06</td>
<td>0.000</td>
</tr>
<tr>
<td>School Size</td>
<td>0.78**</td>
<td>0.04</td>
<td>0.000</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0.58**</td>
<td>0.05</td>
<td>0.000</td>
</tr>
<tr>
<td>Daily Att.</td>
<td>-0.05**</td>
<td>0.01</td>
<td>0.000</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>-0.03**</td>
<td>0.01</td>
<td>0.000</td>
</tr>
<tr>
<td>Per. Minority</td>
<td>0.34**</td>
<td>0.05</td>
<td>0.000</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0.35**</td>
<td>0.05</td>
<td>0.000</td>
</tr>
<tr>
<td>Inad. Funding</td>
<td>-0.17**</td>
<td>0.05</td>
<td>0.000</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>-0.26**</td>
<td>0.05</td>
<td>0.000</td>
</tr>
<tr>
<td>Limited Eng.</td>
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<td>0.00</td>
<td>0.603</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0.00</td>
<td>0.00</td>
<td>0.521</td>
</tr>
<tr>
<td>SRO/Guard</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>1.41**</td>
<td>0.09</td>
<td>0.000</td>
<td>0.66**</td>
<td>0.10</td>
<td>0.000</td>
</tr>
<tr>
<td>Staff Radios</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0.07</td>
<td>0.09</td>
<td>0.444</td>
<td>0.02</td>
<td>0.09</td>
<td>0.791</td>
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<tr>
<td>Security Cam.</td>
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<td>--</td>
<td>--</td>
<td>0.26**</td>
<td>0.09</td>
<td>0.003</td>
<td>0.26**</td>
<td>0.08</td>
<td>0.001</td>
</tr>
<tr>
<td>Student Badge</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0.44**</td>
<td>0.10</td>
<td>0.000</td>
<td>0.20*</td>
<td>0.10</td>
<td>0.048</td>
</tr>
<tr>
<td>Lockers Prov.</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0.31**</td>
<td>0.09</td>
<td>0.000</td>
<td>0.55**</td>
<td>0.08</td>
<td>0.000</td>
</tr>
<tr>
<td>Strict Dress</td>
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<td>--</td>
<td>--</td>
<td>0.14</td>
<td>0.08</td>
<td>0.071</td>
<td>0.06</td>
<td>0.08</td>
<td>0.437</td>
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<td>Closed Lunch</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0.13</td>
<td>0.09</td>
<td>0.124</td>
<td>0.20*</td>
<td>0.08</td>
<td>0.013</td>
</tr>
<tr>
<td>Metal Detect.</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>-0.15</td>
<td>0.20</td>
<td>0.471</td>
<td>-0.57**</td>
<td>0.19</td>
<td>0.003</td>
</tr>
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<td>Locked Doors</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>-0.09</td>
<td>0.13</td>
<td>0.467</td>
<td>-0.02</td>
<td>0.12</td>
<td>0.842</td>
</tr>
<tr>
<td>Visitor Check</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0.60</td>
<td>0.52</td>
<td>0.251</td>
<td>0.44</td>
<td>0.49</td>
<td>0.367</td>
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<tr>
<td>-2 Log Like</td>
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<td></td>
<td>-8,076.52</td>
<td></td>
<td></td>
<td>-7,941.67</td>
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<td>ln $\alpha$</td>
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<td></td>
<td>0.75</td>
<td></td>
<td>0.60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\alpha$</td>
<td>2.00**</td>
<td></td>
<td></td>
<td></td>
<td>2.12**</td>
<td></td>
<td>1.83**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LR $\chi^2$</td>
<td>424.84 (p&lt;0.01)</td>
<td></td>
<td></td>
<td>320.37 (p&lt;0.01)</td>
<td></td>
<td></td>
<td>590.08 (p&lt;0.01)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: **$p<0.01$; *$p<0.05$
Rural Schools Models (7, 8, and 9)

A full summary of results for the rural school models within this section of the analysis can be found in Table 12. Models seven, eight, and nine were designed to test the following research hypotheses:

- Hypothesis 2: School disorganization is significantly related to security in rural schools.
- Hypothesis 4: School security is significantly related to disorder in rural schools.
- Hypothesis 6: School disorganization is not significantly related to misconduct in rural schools.
- Hypothesis 8: High levels of crime in the surrounding location are not significantly related to increased school misconduct in rural schools.

Once again, paralleling the previous negative binomial regression models, the following rural school models regress each of the 16 independent predictor variables upon the dependent measure. Diagnostics for each of these models indicate that this type of regression is the ideal method of analysis for the over-dispersed count data being used. The calculated diagnostics for each model are as follows:

- Model 7: $\alpha=1.84$; $\chi^2=1.3e+05$; $p<0.01$
- Model 8: $\alpha=1.98$; $\chi^2=1.5e+05$; $p<0.01$
- Model 9: $\alpha=1.69$; $\chi^2=1.2e+05$; $p<0.01$

The likelihood ratios associated with each rural school model also suggest a statistically significant relationship between independent measures and school misconduct. The bulleted list at the top of the following page contains the likelihood ratios and levels of significance associated with each of these models:
• Model 7: LR $\chi^2=309.89; \ p<0.01$
• Model 8: LR $\chi^2=217.73; \ p<0.01$
• Model 9: LR $\chi^2=417.86; \ p<0.01$

Model 7. This model was designed to respond to hypotheses six and eight. It examined how measures of disorganization were related to rates of school misconduct in rural schools when analyzed separately. Similar to each of the previous models, the same five measures of disorganization were found to be significantly related to increases in disorder: Crime where schools are located ($\beta=0.51; \ p<0.01$), school size ($\beta=0.61; \ p<0.01$), and percentage of minority students ($\beta=0.22; \ p<0.01$) maintained significant and positive relationships with school misconduct. At the same time, percentage of daily attendance ($\beta=-0.03; \ p<0.05$) and efforts limited by inadequate funding ($\beta=-0.17; \ p<0.01$) remained negatively associated with increases in the dependent measure. Thus, there appear to be no considerable differences between urban and rural schools in relation to disorganization.

Although results from this model did not fluctuate regarding the type of associations between various independent measures and school misconduct, they do indicate that the final two hypotheses should be reconsidered. It appears that increased crime in rural communities has a contributing effect on the amount of crime in schools. In addition, these findings dismiss the hypothesis that disorganization within schools themselves leads to higher rates of misconduct among students overall.

Model 8. This model focused solely on examining the differential effects of security measures in rural schools. That being said, this model was constructed to respond to hypotheses four. Results indicated that when measures of disorganization were eliminated from the analysis,
there were changes in the types of security that were significantly related to disorder, which provides support to hypothesis five. *Security cameras* ($\beta=0.26; \ p<0.01$) and *student identification badges* ($\beta=0.51; \ p<0.01$) became significantly related to disorder, unlike the previous model.

The remaining security measures that were significantly related to school misconduct included: *school resource officers/security guards* ($\beta=0.96; \ p<0.01$), *staff radios* ($\beta=0.47; \ p<0.01$), *lockers provided* ($\beta=0.35; \ p<0.01$), *strict dress code* ($\beta=0.21; \ p<0.05$), *closed lunch* ($\beta=0.36; \ p<0.01$), and *locked doors* ($\beta= -0.46; \ p<0.01$). These findings provide support to hypothesis six, indicating that security measures are significantly related to disorder among students in rural schools.

**Model 9.** This model was designed to respond to hypothesis two. Examining rural schools separately in this model provided significant results, indicating that several independent measures were associated with increases in school misconduct. Mirroring previous models, five of six disorganization measures and six of ten security measures boasted statistically significant relationships with the dependent variable. That being said, this section will begin with a discussion concerning the effects of disorganization on school misconduct followed by a separate discussion regarding security measures.

As with each of the previous models, *crime where schools are located* ($\beta=0.42; \ p<0.01$), *school size* ($\beta=0.47; \ p<0.01$), and *percentage of minority students* ($\beta=0.26; \ p<0.01$) were significantly related to increases in the prevalence of disorder. These findings provide support for the use of social disorganization theory as a means of explaining crime in rural areas and the schools within them, which as described in Chapter two, has been brought into question by various researchers in the past. Findings regarding the *percentage of daily attendance* ($\beta= -0.02$;
p<0.05) and efforts limited by inadequate funding ($\beta = -0.22; p<0.01$) appear to support this skepticism. This is because their relation to school misconduct in rural communities contradicts what would otherwise be supported by social disorganization. As such, these measures will be examined more critically in model nine at which point they are tested separately.

In relation to security, this model offered some unique findings in comparison to the equivalent urban schools model (model 6). Although six of the ten security measures were significantly related to school misconduct, the specific types of security differed slightly. For example, unlike the urban schools model, *staff radios* ($\beta = 0.26; p<0.01$), *strict dress code* ($\beta = 0.22; p<0.05$), and *locked doors* ($\beta = -0.41; p<0.01$) became significantly related to disorder. In addition, *security cameras*, *student identification badges*, and *metal detectors* were not significantly related to disorder as they were in urban schools. Other significant associations included: *school resource officers/security guards* ($\beta = 0.45; p<0.01$), *lockers provided* ($\beta = 0.44; p<0.01$), and *closed lunch* ($\beta = 0.52; p<0.01$). Table 12 on the following page contains a full summary of findings for the previous three models.
Table 12: *Rural Schools Models*

| Measure            | β     | SE  | p > | | Measure            | β     | SE  | p > | | Measure            | β     | SE  | p > |
|--------------------|-------|-----|-----| |                |       |     |     | |                |       |     |     |
| Crime-School       | 0.51**| 0.11| 0.000| | School Size      | 0.61**| 0.04| 0.000| | School Size      | 0.42**| 0.11| 0.000|
| Daily Att.         | -0.03*| 0.01| 0.015| | -               | --    | --  | --  | | Daily Att.       | -0.02*| 0.01| 0.027|
| Per. Minority      | 0.22**| 0.05| 0.000| | -               | --    | --  | --  | | Per. Minority    | 0.26**| 0.05| 0.000|
| Inad. Funding      | -0.17**| 0.06| 0.003| | -               | --    | --  | --  | | Inad. Funding    | -0.22**| 0.06| 0.000|
| Limited Eng.       | -0.01  | 0.00| 0.180| | -               | --    | --  | --  | | Limited Eng.     | -0.01  | 0.00| 0.260|
| SRO/Guard          | --    | --  | --  | | 0.96**          | 0.09  | 0.000| | SRO/Guard        | 0.45**| 0.10| 0.000|
| Staff Radios       | --    | --  | --  | | 0.47**          | 0.10  | 0.000| | Staff Radios     | 0.26**| 0.09| 0.004|
| Security Cam.      | --    | --  | --  | | 0.26**          | 0.10  | 0.008| | Security Cam.    | 0.06   | 0.10| 0.529|
| Student Badge      | --    | --  | --  | | 0.51**          | 0.16  | 0.002| | Student Badge    | 0.13   | 0.15| 0.382|
| Lockers Prov.      | --    | --  | --  | | 0.35**          | 0.11  | 0.001| | Lockers Prov.    | 0.44**| 0.10| 0.000|
| Strict Dress       | --    | --  | --  | | 0.21*           | 0.09  | 0.022| | Strict Dress     | 0.22*  | 0.09| 0.011|
| Closed Lunch       | --    | --  | --  | | 0.36**          | 0.10  | 0.000| | Closed Lunch     | 0.52**| 0.09| 0.000|
| Metal Detect.      | --    | --  | --  | | -0.67           | 0.48  | 0.166| | Metal Detect.    | -0.64 | 0.45| 0.156|
| Locked Doors       | --    | --  | --  | | -0.46**         | 0.13  | 0.000| | Locked Doors     | -0.41**| 0.12| 0.001|
| Visitor Check      | --    | --  | --  | | 0.60            | 0.45  | 0.181| | Visitor Check    | 0.76   | 0.42| 0.071|
| -2 Log Like        | -5,179.56| | | | -2 Log Like     | -5,225.64| | | | -2 Log Like     | -5,125.57| |
| ln α               | 0.61  | | | | ln α           | 0.68  | | | | ln α           | 0.53  | |
| α                  | 1.84**| | | | α              | 1.98**| | | | α              | 1.69**| |
| LR χ²              | 309.89 (p<0.01) | | | | LR χ²          | 217.73 (p<0.01) | | | | LR χ²          | 417.86 (p<0.01) |

Note: **p<0.01; *p<0.05
Summary

This thesis was designed to test whether or not routine activity theory and social disorganization theory could simultaneously explain the differential impact that various organizational and environmental security measures have on school misconduct across urban and rural communities in the United States. This was achieved through conducting a series of analyses using secondary data from the 2008 School Survey on Crime and Safety. These analyses included: measures of central tendency and dispersion, bivariate correlations, and nine separate negative binomial regression models. Although these calculations did provide significant results throughout, further analysis is needed to provide a better understanding of the true nature of the existing relationships. As stated previously, this is partially because a true experimental design was not possible.

Regarding the multivariate analysis, the combined schools models (models 1, 2, and 3) served as a baseline for comparison between later models. These models also allowed for a general understanding of how disorder affects schools across the nation regardless of urban classification. In relation to the urban schools models (models 4, 5, and 6), these responded to several hypotheses within the current study and provided support to each of them, indicating that the relevant theoretical perspectives appear to at least partially explain changes in rates of disorder. However, it is important to note that in order to determine which of the independent measures are more or less effective based on urbanicity, further analysis is needed. The rural schools models (models 7, 8, and 9) also provided support to several research hypotheses, and allowed for a final urban-rural comparison upon calculation. Ultimately, these models appear to support the use of social disorganization and routine activity theory to explain crime in rural communities and schools within them, as well.
Having provided an overview of results from the analyses within this section, a more
thorough discussion of these findings will be provided in the following chapter. Additionally,
ideas for future research, policy guidelines, and implications regarding the use of the relevant
criminological theories are discussed, as well as limitations concerning methodology and
conclusions.
CHAPTER 5
DISCUSSION

Introduction

The purpose of this study was to determine the differential effect of environmental and organizational influences on levels of school misconduct throughout urban and rural schools. In addition, it sought to determine whether the theoretical frameworks associated with this study could be used to explain crime in these locations in general. Said frameworks were represented using several independent measures that were believed to align with the fundamental components of each theory. A series of hypotheses were then constructed based on the available data being used: 2007-2008 School Survey on Crime and Safety. These hypotheses were analyzed using a series of negative binomial regression models due to the fact that the dependent measure—school misconduct—was composed of over-dispersed count data. Results indicated that social disorganization theory and routine activity theory appear to be significantly related to the incidence of disorder in both urban and rural schools. As such, this chapter will discuss findings within the current study and attempt to provide explanations for said findings. Additionally, it will provide an overview of theoretical and policy implications, methodological limitations, directions for future research, and concluding remarks.

Findings

School Disorganization

Overall, descriptive statistics indicated that urban schools were characterized by higher levels of disorganization in comparison to their rural counterparts. The mean for crime where school is located was $\bar{x} = 1.42$ for urban schools, whereas the mean for rural schools was calculated at $\bar{x} = 1.14$. In addition, the mean for school size in urban locations was calculated at
$\bar{x} = 3.14$ as compared to $\bar{x} = 2.55$ in rural areas, which indicates that schools are generally larger in metropolitan areas. However, results did indicate that rural schools ($\bar{x} = 93.79$) have a slightly higher percentage of daily attendance than urban schools ($\bar{x} = 93.00$). Regardless, the proposal that urban schools experience more population mobility can be partially supported due to the fact that they typically contain more students on average.

The average percentage of minority students was larger in urban schools ($\bar{x} = 3.10$) than that observed in rural schools ($\bar{x} = 2.32$). Additionally, the average percentage of limited-English proficient students was considerably higher in urban schools ($\bar{x} = 11.39$) in comparison to rural schools ($\bar{x} = 5.00$). Thus, it appears that urban schools are characterized by greater levels of ethnic heterogeneity. Lastly, the extent to which efforts to combat crime were limited by inadequate funding was nearly identical between urban ($\bar{x} = 2.09$) and rural schools ($\bar{x} = 2.12$).

Based on these results, the rationales behind hypotheses three and seven can be better understood. Due to the fact that disorganization is more prevalent in urban schools, it was believed that disorganization measures would have a greater effect on students in those schools and a lesser effect on students in rural schools. These results also provide support for testing hypotheses four and eight, which examined the impact that crime within the community had on levels of school misconduct across both urban and rural schools.

Results from the multivariate analysis indicated that school disorganization is significantly related to levels of school misconduct in urban and rural schools, regardless of whether each type of school is examined separately. In other words, although less disorganization occurs in rural schools, it still has a significant impact on levels of school misconduct. Likewise, although there is less crime surrounding schools in rural communities, crime rates still have a significant and positive influence on levels of school misconduct overall.
In light of these findings, the current study rejects research hypotheses seven and eight and fails to reject hypotheses three and four.

**School Security**

In relation to the various security measures examined in the current study, descriptive statistics revealed that urban schools generally have higher levels of security compared to rural schools; however, there were two types of security measures found to be more prevalent in rural schools: *security cameras* and *lockers for students*. Findings revealed that 68 percent of rural schools used cameras to monitor students’ behavior as compared to 66 percent of urban schools. Likewise, 76 percent of rural schools reported providing lockers to their students while only 64 percent of urban schools reported doing so.

Six security measures were found to be more prevalent in urban schools, including: *school resource officers/security guards, staff radios, student badges, strict dress codes, metal detectors, and locked doors during school hours*. Seventy-two percent of urban schools reported utilizing SROs or security guards, while only fifty-nine percent of rural schools reported doing the same. As for staff radios, 79 percent of urban schools reported providing radios to staff members whereas only 70 percent of rural schools reported implementing this form of security. The largest difference in security (ten percent) was related to the use of student identification badges. Eighteen percent of urban schools and eight percent of rural schools required students to do so during school hours.

In addition, there was a four percent difference in the rate at which strict dress codes and locked doors were implemented. Sixty-three percent of urban schools enforced strict dress codes while only fifty-nine percent of rural schools did so. Likewise, 90 percent of urban schools practiced locking doors during school hours as compared to 86 percent of rural schools. Lastly,
there was a three percent difference in the use of metal detectors; although, the rate at which they were used was relatively small regardless of urbanicity. One percent of rural schools and four percent of urban schools reported using metal detectors on a regular basis. However, this security measure was still included in the multivariate analysis due to the fact that it could have a differential effect on levels of school misconduct.

The rate at which the remaining two security measures were implemented in urban and rural schools was identical. The practice of closing for lunch was present in 70 percent of schools, and the practice of requiring visitor check-in was present in 99 percent of schools. However, these findings do not necessarily indicate that these types of security will not have a differential impact on levels of disorder based on urbanicity. As with metal detectors, they were still included in the multivariate analysis.

In relation to security, results from the multivariate analysis were somewhat unexpected; however, as described in the previous chapter there is a simple explanation for the related findings. Results indicated that as levels of security increase in urban and rural schools, so do overall levels of disorder. This appears to suggest that security is conducive to criminal and/or delinquent activity in student populations. Based on the manner in which data was collected, the true nature of this relationship cannot be fully understood because levels of disorder were not measured prior to the implementation of each of the various types of security. That being said, this is a major limitation within the current study that will be discussed more thoroughly in the following section.

It is important to note that four security measures were significantly related to levels of disorder in urban schools. Although the relationships appear to exist in the opposite direction of what would otherwise be expected, they do suggest that hypothesis two should be rejected
because there is a significant relationship present in the data. On the contrary, eight of ten security measures in rural schools were significantly related to disorder, which suggests that results from the current study fail to reject hypothesis six, which stated that security was significantly related to disorder in rural schools.

As for research hypotheses one and five, results appear to suggest that each of these should not be rejected because there were changes in the types of security that were significantly related to school misconduct when measures of school disorganization were eliminated from certain models in the multivariate analysis. However, these changes do not necessarily indicate that disorganization is significantly related to security, as suggested by each hypothesis. In order to accurately test each of these hypotheses, interaction terms must be calculated. As such, this is another key limitation within the current study discussed in the following section.

**Limitations**

This study has several important limitations that must be addressed. The primary limitation is that the actual differential effect of various disorganization and security measures between urban and rural schools cannot be fully determined. This is partially because the current study did not utilize a true experimental design. In other words, because this research relied on secondary data, no pre-test was conducted to determine levels of school misconduct prior to the implementation of security measures. As such, it is impossible to determine the actual direction of the relationship they hold with school misconduct. Additionally, this leads to difficulty when examining the research hypotheses associated with security. Thus, results concerning each of these hypotheses should be viewed with caution, which leads to another crucial limitation.

Research hypotheses one and two suggest that there is a significant relationship between security and disorganization; however, the nature of this relationship cannot actually be
determined without calculating interaction terms between each of the relevant variables. That being said, it would be inappropriate to offer conclusions based on either hypothesis. This limitation will be reexamined in the following section that explains directions for future research.

A final limitation involves internal validity and the initial process of gathering data. Specifically, it is possible that respondents provided false information on the original survey. If that were the case, it is likely that the dependent measure does not accurately reflect the label being placed upon it. In other words, principals and school administrators—the individuals who completed the 2007-08 SSOCS—may have provided false information regarding crime and delinquent acts within their schools in order to protect their school’s reputations in the public eye. However, there is not a reliable technique that exists to overcome this type of limitation when conducting survey research. Having provided an overview of limitations within the current study, it is necessary to discuss theoretical and policy implications based on findings.

Implications

Theoretical Implications

Due to the fact that results from the separate multivariate analyses concerning urban and rural schools closely resembled each other, it could be suggested that each of the relevant theoretical frameworks may be used to explain crime in both settings. In other words, social disorganization theory and routine activity theory appear to explain crime and victimization in both urban and rural locations, which has been called into question by previous researchers as described in Chapter two (Donnermeyer, 2007; Kaylen & Pridemore, 2011, 2012, 2013a). In particular, the results that were obtained from using each of these frameworks to study crime in smaller populations, such as schools, suggest that they may also be used to study crime on a micro-level in other small group settings. As stated previously, however, these implications
should be viewed with caution due to the fact that several limitations are present in this study.

Policy Implications

As for policy implications, findings suggest that urban and rural schools are not exceedingly different in relation to the effects that disorganization and security have on levels of school misconduct within each. However, there is a considerable difference in overall levels of disorder based on urbanicity. As described in Chapter three, the average number of reported incidences of school misconduct was calculated at ($\bar{x} = 129.24$) in urban schools and ($\bar{x} = 71.75$) in rural schools. Based on these rates of disorder, along with the fact that security cameras and lockers are more prevalent in rural schools, perhaps implementing them in more urban schools would assist in deterring crime and delinquency within those schools in metropolitan areas.

Additionally, descriptive statistics concerning measures of disorganization indicated that nearly all of them were more prevalent in urban schools. Taking that into account, it appears that population mobility and ethnic heterogeneity have a greater impact on disorder in urban schools. If that is in fact the case, perhaps better controls and precautions could be implemented to help prevent crime from spilling-over into schools from the surrounding community. In addition, findings suggest that as minority subgroups become more prevalent within the student body, rates of disorder increase.

The nature of this apparent relationship could exist in a few different ways. (1) It could simply be that urban schools are already predisposed to have higher levels disorder and higher percentages of minority subgroups due to the fact that these schools are generally larger. Therefore, the relationship could be spurious. (2) It could also be that opportunities for minorities in metropolitan areas are limited. In other words, a cultural transmission of deviance could be occurring due to the possibility that opportunities to engage in positive behaviors are limited. (3)
It could also be that minorities are simply being targeted within urban schools.

As described in Chapter one, the school-to-prison pipeline primarily describes how young African-American males are affected to a greater extent by being introduced to the juvenile justice system at an early age and receive a criminal label. As described by Walden (2003), inequalities within the country’s educational system are primarily defined along the lines of race, which have a direct impact on minority students’ rates of high school graduation, academic achievement, and attainment of post-secondary education (Christle, Jolivette, & Nelson, 2005).

That being said, perhaps educational and/or extracurricular programs could be implemented within schools to promote positive behaviors and increase students’ abilities to attain academic success in urban communities. This would inherently limit their ability to become involved in criminal activity and decrease the likelihood that they become exposed to the criminal justice system at an early age. Ultimately, it is possible that such advancements would create an overall safer and more efficient school environment.

**Future Research**

In the current study, secondary data was used to examine the extent to which various environmental characteristics influenced levels of disorder. As stated previously, due to the fact that secondary data was used, experimental design was not a possibility. Ideally, future research should control for this by measuring levels of school misconduct prior to the implementation of various security measures; however, due to the fact that security has become a rapidly growing concern in most schools throughout the modern era, this may not be possible. In other words, most schools have already implemented many different forms of security, regardless of urbanicity, because extreme acts of violence in schools are becoming more common.

Thus, rather than determining whether various types of security are actually effective, a
more efficient approach would be to determine which types of security are more or less effective based on urbanicity. This could be achieved by calculating interaction terms, which was one of the primary limitations within the current study. Interaction terms would indicate the true nature and strength of the relationships that exist between various independent measures and school misconduct. Based on these suggestions, it is hopeful that this study will serve as a guide for future research and inspire others to take a more in-depth approach when studying how the environment differentially affects crime and delinquency within urban and rural schools.
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