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Crime Reduction Strategies of Florida Sheriff's Offices Related to Residential Burglaries

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Abstract

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Jack Armstrong

MA, Troy State University, 1995

BS, St. Leo University, 1993

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

In Florida, the law enforcement response to burglaries is estimated to cost $1.3 billion, yet little is understood about whether specific types of enforcement and investigation strategies have an impact on reducing the incidence of burglary. Using Cohen and Felson's concept of guardianship as part of routine activities theory as the foundation, the purpose of this quantitative cross-sectional study was to examine whether any or all crime reduction strategies (community policing, intelligence led policing, Compare Statistics policing, traditional policing, hot spot policing, and evidence based policing) when combined with urbanity, household income, the sworn officers per 1000 population are statistically associated with reductions in burglary rates. Data were collected from 64 of the 67 sheriff's offices in Florida through a researcher developed survey. Data were analyzed using multiple linear regression. Findings indicate that there is no statistical significance between type of crime reduction strategy and burglary rates. Median household income was the only covariate associated with residential burglaries with areas of higher incomes associated with lower burglary rates ($p = .023$). The positive social change implications stemming from this study include recommendations for law enforcement officials to examine how they are engaging in guardianship in less affluent communities and developing a measurement on how to evaluate crime reduction strategies that are more mutually exclusive with clearly defined outcomes. Implementation of these recommendations may reduce burglaries thereby promoting safer communities and mediating financial and emotional losses experienced by community members.

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Dedication

This dissertation is dedicated to the memory of my father, Jack Armstrong and my mother, Phyllis Armstrong. Over the years, their words of encouragement have inspired me to do my best. They have always supported me throughout this journey and have been my strongest advocates. I will be forever in their debt.

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Chapter 1: Introduction to the Study

Over the past 2 decades, the media have convinced the America public that there is a major issue with crime and that law enforcement and political officials need to be responsive to crime (Walsh & Conway, 2011). In 2013, there were 1.9 million burglaries reported in the Uniform Crime Report, costing victims around 5 billion dollars (Federal Bureau of Investigations UCR, 2013). Burglary is the second most serious reported crime in the United States (Weisel, 2002). Residential burglaries are one of the most highly reported crimes and research suggests these types of crimes are spatially and temporally correlated (Pitcher, 2010). Even though the Uniform Crime Report shows that crime is at its lowest level in the 40 years, including for burglaries (FBI UCR, 2013), this narrative has created an atmosphere where the public demands policies and strategies that reduce crime, including for burglary (Oppel, 2011).

Increased costs of preventing crimes, such as burglary, are high and continue to rise, causing law enforcement officials to be creative in their prevention strategies (Lee & Wilson, 2013). Burglary not only deprives a person, but also instills a fear of crime that lingers well past the crime itself (Jacobs & Addington, 2016). Investigating burglary-related crimes can be time consuming and use resources that could be spent elsewhere. Implementing policies that minimize risks could save millions of dollars at a time when the perceived risk of victimization of any kind are magnified, especially by the media (Johns, 2011). Chapter 1 identifies the background for this study, problem statement,

purpose of the study, research questions, theoretical framework, nature of the study, definitions, assumptions, scope and delimitations, limitations, and significance.

Background

Prior academic work has focused on how urban police departments, especially in major cities, engage in crime fighting strategies. Additionally, metropolitan police departments are more likely to be in the media spotlight when there are crime issues, highlighting their tactics and strategies for crime prevention (Brewer & Grabosky, 2014). The media attention, in conjunction with urban crime issues has led academics to focus on police departments (Kent & Carmichael, 2014). Urban residential burglaries cluster close to each other in space (Bennett, 1995; Johnson et al. 2007) and time and when a home burglary occurs, another will happen shortly thereafter (Johnson et al., 2007). Bennett (1995) found over one-third of residential burglaries reported were identified in one condensed area. The faster response to a residential burglary scene allows more time for police to search for and apprehend suspects before they escape and improve the chances of making an arrest (Coupe & Blake, 2011). Quicker responses to crimes such as residential burglary can be associated with a higher number of personnel being deployed in higher crime areas (Abdullah, 2014). Cihan, Zhang & Hoover (2012) found that a rapid response by police in a concentrated area increased the apprehension of burglary suspects.

However, this focus on urban areas ignores a large part of the United States that is comprised of smaller towns and rural areas, where there may only be small police departments or large areas dependent on the county's sheriff's office as their sole access

to law enforcement (Donnermeyer, 2015). Sheriff's offices are different from city police departments in a number of ways. In many parts of the country, sheriffs are the only law enforcement for large geographic areas, unlike police chiefs who protect a population in a condensed area and work with sheriff's offices (Mawby, 2015). Large areas of Florida are rural and rely heavily on the sheriff's office as their sole source of policing (Donnermeyer, 2015). There is some research that points to this changing dynamic between urban and rural policing, including sheriffs (Myers, et al. 2013). First, there is strong evidence that there are changes in how socioeconomic variables, such as income differentiate in urban and rural crime (Deller & Deller, 2011). Rural populations differ in their views of crime threats to their community (Norris & Reeves, 2013). Rural police organizations are often more respected by the public than their urban counterparts (Deller & Deller, 2011). Sheriff's offices, especially in Florida, are the dominant law enforcement organization in many counties to respond and investigate crimes (Pynes & Corley, 2006). Some urban areas in California are contracting with sheriff's departments because of the cheaper costs for the same protective services (Nellingan & Bourns, 2011). Yet, the majority of research continues to focus on the policing strategies of metropolitan police departments, and not on sheriff's offices. One question this research asks is whether there is a difference between burglaries in rural and urban areas and how policing strategies might be similar.

One important difference between police chiefs and sheriffs is who influences their choices of policies and strategies for policing their districts (LaFrance & Placide, 2010). A sheriff is elected every 4 years and derives his/her legal authority from the

constitution of their state (Pynes & Corley, 2006). Police chiefs, on the other hand, derive authority from the charter government in which they serve and are appointed (LaFrance & Placide, 2010). Police chiefs tend to have more autonomy, since they are not elected every 4 years like sheriffs, yet sheriffs are under more scrutiny, since they serve at the will of the voters (Lewis, Provine, & Varsanyi, 2013). Also, because of the nature of rural communities, it is expected that rural police agencies will have closer social ties and have policing styles that should be more responsive to citizens (Weisheit, Wells, & Falcone, 1994). Sheriffs are often tasked with either running the local correctional facility, court services security, or both (Kopel, 2015). Often, deputy sheriffs share the same power as the sheriff when carrying out law enforcement duties (Pines & Corley, 2006). Because they are elected officials, they need to ensure their policies and practices are not only effective, but also satisfy their constituents.

One commonality between the two types of policing agencies is the mandate for protecting their jurisdiction from crime. Property crime is one of the few areas in policing where policing strategies can have an impact directly on crime rates (Telep & Weisburd, 2012). As Cohen and Felson (1979) pointed out, crime occurs when there is a motivated offender, suitable target, and a lack of guardianship. Police and sheriffs may find it beneficial to change their crime fighting response and deployment strategies for residential burglaries that occur disproportionately in some neighborhoods (Abdullah, 2014). Policing can help harden the target and the types of policing strategies can increase the potential or perception of increased guardianship. Law enforcement personnel, if properly deployed, can reduce the total number of crimes such as burglaries

(Jones, Brantingham, & Chayes, 2010). Their relative effectiveness depends on the number of agents deployed, the deployment strategy used, and the location of criminal activity (Jones, et al, 2010).

There are several strategies used by policing agencies for crime prevention to be effective. Six common strategies have been well researched, especially as they apply to property crimes in urban policing in large cities. These strategies are traditional policing, community/problem oriented policing, intelligence led policing, Compare Statistics (COMPSTAT), hot spot policing, and evidence based policing (Santos, 2014). Polite (2010) found that although traditional policing methods did not include much interaction with the public, it did focus on reducing crimes reported under the Uniform Crime Report Part I crimes. Traditional policing is a strategy involving regular patrolling, including foot patrol by police, and reacting to crime after it occurs (Shane, 2010. Also known as reactive approach to policing, traditional efforts towards drugs and property crimes often instill negative attitudes by the citizenry (Mazerolle, Soole, & Rombouts, 2007).

Community/problem oriented policing is a strategy using citizen participation in the solving of criminal as well as quality of life issues (Polite, 2010). This strategy can vary depending on the community and their particular issue that needs to be addressed. Strategies addressing property crimes may differ from strategies addressing quality of life issues. Arslan (2010) found in a study in Texas that community policing does reduce violent crime and property crime rates. Community policing involves cooperation with a variety of stakeholders to include police, community and business leaders.

Intelligence-led policing is a business model for law enforcement administrators in how to collect and utilize data and intelligence to set specific outcomes in reducing crimes such as burglary (Ratcliffe, 2013). This strategy is an information based system, which requires that law enforcement develop and use analytic products to coordinate the allocation of police and partner agency resources (Bullock, 2013). Nguyen (2010) identified that intelligence-led policing strategies did reduce crime. Information sharing is a key element for the successful implementation of this strategy (Ratcliffe, 2013).

COMPSTAT is a strategy where police departments use timely information to discuss how to reallocate resources to focus on crime reduction goals through identified crime areas (Willis, Mastrofski, & Weisburd, 2007). Giving police managers the tools and resources they need to reduce crime, while also holding them accountable is the main focus of this strategy (Willis, Mastrofski, & Weisburd, 2007). Freeman (2011) recognized that COMPSTAT is highly effective in reducing crime and disorder in communities. One study in Fort Worth, Texas showed the COMPSTAT strategy had significantly decreased property related crimes such as burglary (Jang, Hoover, & Joo, 2010). Compstat focuses on reducing crime by holding middle managers accountable for their actions. Add summary to fully conclude the paragraph.

Evidence-based policing is a strategy that uses statistical analysis and empirical research to identify crime area locations (Saunders, Lundberg, Braga, et al., 2015). This strategy determines what outcomes work best on identified crimes when implemented under controlled conditions and implementing these strategies in the field (Sherman, 1998). Lum, Koper, and Telep (2010) created an evidence-based policing matrix for law

enforcement that was proactive, geographically based, and specific in its crime reduction strategy. Santos (2013) found that using stratified model policing helped reduce thefts from vehicles. New York City saw their burglary, robbery, and homicide crime rate drop 80% when other urban areas saw increases in crime (Jones, 2012). Law enforcement organizations usually engage in a combination of crime fighting strategies, but knowing which combination works best for rural areas is still not determined.

Hot-spot based policing is a strategy that identifies a select number of locations that are responsible for a substantial amount of crime and that to reduce the overall amount of crime, police should focus interventions and resources on these crime *hot spots* (Scheider, Chapman, & Schapiro, 2009). Hot spot based policing is a strategy where the majority of crime is condensed in a specific area and police should reallocate resources to these areas (Asmild, Paradi, & Pastor, 2012). The boundaries of these crime areas must be identified properly so that police can gather intelligence and reallocate resources to these areas. Johnson et al (2007) found that more burglaries occurred close to each other in space and time than would be expected on the basis of chance, validating that burglaries cluster in space. Paternoster (2010) found that the policing of hot spots show an initial overall reduction in crime to an enhanced presence of police and police activity, and that criminals willingly weigh their consequences and reduce their offending.

There are additional factors policing agencies must take into account to effectively police their jurisdiction and implement the right crime prevention strategies. First, is there a right balance between population and the number of sworn personnel necessary to effectively reduce crime? Farrell, Tilley, Tseloni, and Mailley (2010)

suggested that hiring more law enforcement personnel may reduce future crime rates within the United States. The amount of officers will influence the types of strategies that can be employed. New York City saw a dramatic drop in crime due to changing strategies of adding more police and identifying crime hot spots (Paterline, 2012). Additionally, employing some strategies, like foot patrolling, might not be reasonable in rural counties.

Policing agencies need to understand the demographics of their jurisdictions and how that relates to criminality in order to select an effective strategy. Each community is unique based on differing cultures and need various forms of governance and accountability (Terpstra, 2011). Urban and rural areas have differing demographics that require differing crime reduction strategies. In greater western society, most crime is consolidated within urban areas; however, the specific crimes can vary considerably between rural and urban settings (Deller & Deller, 2011). Baciu and Parpucea (2011) discovered higher crime rates in urban communities with lower education and income levels. Middleton (2013) found that certain crime reduction policies, such as getting suspects drug treatment, reduced burglaries by 30%. Research suggests there are differences between urban and rural areas and strategies from urban studies cannot be blindly transferred to rural areas (Deller & Deller, 2011).

Sheriff's offices are under researched in their strategies in preventing common crimes like burglary, taking into account these additional factors (Deller & Deller, 2011). For example, employing some strategies like foot patrolling might not be reasonable in rural counties even though it is highly effective in urban areas. A significant gap in the

literature is the lack of research on the crime fighting strategies used by sheriff's offices. These strategies need to be studied to see if there are differences, in both the type used and their level of effectiveness, between urban and rural offices as well as how other factors, such as economic issues and personnel size and deployment, impact crime.

This project is intended to close the gap in the literature. This cross-sectional study focused on 67 sheriff's offices in Florida to examine their crime fighting strategies to reduce residential burglaries in 2014. There is little research on the association of residential burglaries and crime fighting strategies used most often by sheriffs in the United States and even less on the strategies used by sheriff's offices in Florida. An elected sheriff answers directly to the voters and his or her crime fighting strategy can directly affect his/her chances for re-election. The mostly commonly used and most effective strategies will be identified, which will hopefully help other sheriff's offices in combatting residential burglaries.

Problem Statement

Residential burglary is a common crime throughout the United States, especially in urban areas. In 2013, residential burglary cost victims around 5 billion dollars (FBI UCR, 2013) and is the second most serious reported crime to authorities (Weisel, 2002). Research suggests these types of crimes are spatially and temporally correlated (Pitcher, 2010). Burglaries are one that policing can impact directly (Telep & Weisburd, 2012), which means that policing strategies must differ across locations in order to be effective. The high number of burglaries in disadvantaged urban neighborhoods are driven by issues of poverty (Kikuchi & Desmond, 2010). Urban police departments can deploy a

variety of strategies simultaneously to combat this crime. Research has focused on the major urban centers, with a focus on urban police departments, including issues between local governments and disenfranchised urban communities (Brown, 2010).

Burglaries in suburban and rural areas can be challenging for law enforcement. They are more likely to be driven by opportunity rather than poverty, suggesting a lack of guardianship (Cohen and Felson, 1979, Bennet, 1991). Zhang and Song (2014) reemphasized Johnson et al.'s (2007) study that burglaries in suburban areas are more likely to be driven by opportunity rather than poverty. The strategies used in urban areas may not work in suburban and rural areas because of the motivation behind the crime as well as population density.

County sheriff's offices are the only law enforcement agencies in many rural areas (Weisheit, Wells, & Falcone, 1994). Understanding their strategies are just as important as their urban counterparts, including urban sheriff's offices. Yet, few studies have examined the types of strategies sheriff offices commonly employ to prevent residential burglary in their jurisdiction and how strategies vary by demographics in the county. Other influences that can impact burglary directly are social, spatial, and economic factors (Chang, 2011), which should be accounted for in research strategy effectiveness.

This cross-sectional quantitative study on Florida sheriff's offices explored which crime reduction strategies were associated with lower residential burglaries. Florida is an ideal state to conduct this research because it has a balance between rural, suburban, and large urban areas that allows differences between sheriff's office strategies to be

investigated. Other important factors to account for are personnel resources within the department as the ratio of sworn officers in a county compared to the population and demographic characteristics of the county (median household income and population density), when examining the relationship between the rate of reported residential burglaries and strategies.

Purpose of the Study

The purpose of this cross-sectional study was to examine how policing strategies are associated with levels of residential burglary rates, controlling for median household income, urban/rural demographics, residential burglary arrest rates, and police-population ratio. This cross-sectional study examined the crime residential burglary rate in sheriff's offices in the state of Florida for 2014. This study explored which crime reduction strategies were associated with lower residential burglaries while identifying the proper number of formal guardians for urban and rural jurisdictions. All 67 Florida sheriff's offices were contacted to participate in this project. The goal was to determine what strategies were used most often and were most effective for sheriff's offices to reduce the rate of residential burglaries. Additional data came from two sources. The first was reported Part I crimes from the Uniform Crime Report (UCR), specifically the rate of residential burglaries and arrest rates reported from year 2014. Each year, Florida law enforcement organizations, including county sheriffs, report this data to the Florida Department of Law Enforcement. County sheriff's offices report residential burglaries and arrests that occur within the county, which include cities that contract with county sheriff's offices, (Florida Department of Law Enforcement [FDLE], 2014). Florida

Department of Law Enforcement's UCR statistics provide standardized data on annual crime statistics from across the state. A request was made to FDLE for this data for each sheriff's office. The number of sworn personnel was determined using data from the Criminal Justice Agency Profile Report for 2014 from the FDLE, which shows the number of sworn personnel per thousand for 2014 for each Florida sheriff's office (FDLE, 2014).

The second source was from census information from the United States Census Bureau. This data included 2014 median household income from each Florida County. For the purposes of this study, urban and rural areas were determined using data of Florida counties from the 2010 United States Census Bureau (U.S. Census Bureau, 2010). The data is an official designator which uses census data to determine rural and urban counties (U.S. Census Bureau, 2010). A data set was constructed by combining information from county level demographic information and crime rate statistics. It is hoped that the results helped various sheriffs' offices increase their knowledge about what strategies might be most effective in their jurisdiction.

Research Questions and Hypothesis

Quantitative Research Questions

This study examined the relationship between crime reduction strategy, urban/rural counties, number of sworn personnel, median household income of the population, residential burglary arrest rates, and the rate of reported residential burglaries. This study extended Cohen and Felson's (1979) routine activities theory. The overall research question for this study is: To what extent are residential burglaries associated

with community policing, intelligence led policing, COMPSTAT policing, traditional policing, hot spot policing and evidence based policing strategies, while identifying the proper number of formal guardians for urban and rural jurisdictions? To ascertain the strategies that affect the rate of residential burglaries while controlling for the covariates, the following questions were addressed:

Research Question 1: Are some crime fighting strategies employed by sheriff offices more effective than others in controlling burglary rate?

$H_0$1 There is no relationship between whether a crime fighting strategy of Florida sheriff's offices and residential burglary rates after controlling for median household income, sworn personnel per thousand, residential burglary arrest rates, and rural/urban community types.

H_a1 There is a relationship between whether a crime fighting strategy of Florida sheriff's offices was used and residential burglary rates, after controlling for median household income, sworn personnel per thousand, residential burglary arrest rates, and rural/urban community types.

Research Question 2: Are there different crime fighting strategies that will be associated with different residential burglary rates, after controlling for county and department characteristics?

$H_0$2: Each crime fighting strategy will not impact residential burglary rates differently, after controlling for median household income, sworn personnel per thousand, residential burglary arrest rates, and community type (urban/rural).

H_a2: Each crime fighting strategy will impact residential burglary rates differently, after controlling for median household income, sworn personnel per thousand, residential burglary arrest rates, and community type (urban/rural).

Theoretical Framework for the Study

Cohen and Felson's (1979) routine activities theory addressed the three major correlations of crime: motivated offenders, suitable targets, and a lack of guardianship. Their research, and the researchers that expanded on guardianship in crime prevention (Cohen and Felson,), is the theoretical base that grounded this study. Cohen and Felson discovered that there was a correlation between guardianship and a reduction in crime in urban areas, specifically that when a target is harder to access, there is a reduction in the opportunities for crime (Hollis-Peel, et al., 2011). Bennett (1991) reemphasized Cohen and Felson's study that guardianship is more related to property crimes than violence. Offenders are motivated by the suitable number of *target rich* households in a community. Median household income not only affects the number of suitable targets, it can also affect the number of police (formal guardians) available (Hollis-Peel and Welsh (2014), and Manasevich, Phan, et. al., (2013). Kuo, Cuvelier, Sheu, & Zhao (2012) found that routine activities theory had applications on a large scale level depending on the size of the community and the density of the population. Motivated criminals are unlikely to travel far from their homes, making rural areas, less attractive (Malleson, See, Evans, & Heppenstall, 2012).

The guardianship effect is predominant, especially when it comes to property crimes (Cantor & Lamb, 1985). Mawby (2015) discovered that different levels of

guardianship (formal policing, alarm systems, and guard dogs) are needed in rural areas because they are more isolated than urban areas. Reviewing policies from law enforcement organizations reveal that policing of hot spots shows an initial overall reduction in crime to an enhanced presence of police and police activity, and that criminals willingly weigh their consequences and reduce their offending (Paternoster, 2010). Stahura and Sloan (1988) found that guardianship had a significant impact on crime through the hiring of police and police expenditures. Conducting comparative research regarding factors related to strategy and its implementation allows researchers and practitioners to foresee problems and guide strategies to successful implementation (Bennett, 2009).

Law enforcement officers can serve as guardians, which can influence criminal activities (Arnold, Keane, & Baron, 2005). My study examined this theory using sworn personnel as proxies for guardians. Police officers are considered formal guardians who have the knowledge and understanding to identify potential burglary hotspots (Reynald, 2010). The number of sworn personnel assigned to a law enforcement organization can assist in reducing crimes such as residential burglary (Hollis-Peel and Welsh (2014) and Manasevich, Phan, et. al., (2013). Coupe & Blake (2011) found that when professional guardians, such as the police respond, faster to a residential burglary scene, it increased the chance of an arrest. Policing can help harden the target and the types of policing strategies can increase the potential or perception of increased guardianship (Hollis-Peel, et al., 2011). Using crime reduction strategies with certain guardianship variables such as sworn personnel can affect the crime rate (Hollis-Peel, Reynald, et al., 2011). Law

enforcement officers can serve as professional guardians and displace criminal activity such as burglary (Hollis-Peel, Reynald, et al., 2011). The theoretical framework for this study was framed by Cohen and Felson's (1979) routine activities theory as it relates to guardianship strategies.

Nature of the Study

This empirical study used a cross-sectional design to determine the relationship between the independent variable of crime fighting strategies and the dependent variable of residential burglary rates. A survey was sent to all 67 sheriff's offices in Florida to identify what residential burglary reduction strategies are used in their jurisdiction. The survey asked about the types of crime prevention strategies used in 2014 to determine whether a relationship existed between the crime fighting strategy and the rate of residential burglaries.

The United States Census Bureau provided population data, which includes median household income, and urban/rural counties. County level data sent to the FDLE was used to determine the ratio of sworn officers to the population. The dependent variable is the rate of residential burglary in a county for 2014. Crime data was collected from the FDLE official statistics, specifically rate of residential burglaries and residential burglary arrests as reported in the UCR. Hierarchal regression was used to determine the combination of strategies most significantly associated to the reported residential burglary rate, while controlling for potentially related covariates such as urban/rural counties, median household income of the population and sworn personnel per thousand populations.

Definition of Terms

The following section describes the definition of terms. In Chapter 3, a definitions of terms is shown as Table 1. This quantitative variable table lists each variable and the type (independent, dependent, and covariate). In addition, the nature of the variable was listed (dichotomous or continuous), where the data came from (measures), and what units were used.

Community Policing/Problem-Oriented Policing: A crime fighting strategy evolved from traditional policing methods that involve citizen participation in the solving of criminal as well as quality of life issues (Office of Community Oriented Policing Services, 2013). Community policing attempts to increase participation between police and citizens for the purpose of improving public safety and the quality of life in the community (Maguire & Katz, 2002). It also involves decentralizing power and making the line officer more instrumental in the decision making process of where resources should be allocated (Office of Community Oriented Policing Services, 2013).

COMPSTAT: A crime fighting strategy evolved from police agencies to tightly focus on crime reduction goals through specific policies and procedures supported by timely information and improved technology (Weisburd, 2003).

Evidence-Based Policing: A crime reduction strategy that uses statistical analysis and scientific research evidence to direct program evolvement and effectiveness (Sherman, 2013).

Hot Spot Policing: A crime fighting strategy that is derived from the fact that a minute number of locations are responsible for a substantial amount of crime and to

reduce the overall amount of crime, police should focus interventions and resources on these crime hot spots (Scheider, Chapman, & Schapiro, 2009).

Intelligence-Led Policing: A crime fighting strategy that evolved as a management tool for law enforcement using data collection and intelligence analysis to set specific priorities for all manner of crimes, including those associated with terrorism (Scheider, Chapman, & Schapiro, 2009). It is a conceptual framework that allows law enforcement organizations to comprehend their crime problems and reallocate resources available to be able to decide on an enforcement tactic or prevention strategy best designed to control crime (Ratcliffe & Guidetti, 2008).

Median Household Income: Median household income is the income that is median per capita income in the county, in thousands of dollars (Thornton & Arbogast, 2014).

Residential Burglary Arrest Rate: Determined as the number of offenses per 100,000 population, derived by first dividing a jurisdiction's population by 100,000 and then dividing the number of arrests.

Reported Residential Burglary: The unlawful entry of a structure to commit a felony or theft (FBI statistics, 2010). Residential burglaries are a subcategory of burglary and pertain to the home in which a person lives or resides temporarily or permanently (FBI statistics, 2010).

Sworn Personnel: The number of certified law enforcement officers working at a Florida sheriff's office per one thousand residents in the county (FDLE, 2014).

Traditional Policing: A crime fighting strategy derived from a concept of routine patrolling and reacting to crime after it occurs (Shane, 2010). Deputy sheriffs respond to calls for service and those that need latent investigation receive follow up from a detective (Shane, 2010).

Assumptions

While conducting a study, it is important that certain assumptions are made. First, it was assumed that participants were a representative sample of the population and that they responded honestly, devoid of any personal bias to the survey questions. Second, I assumed that participants were members from the Florida sheriff's offices who were knowledgeable about the crime reduction strategy used in the county. Third, the assumption was made that the survey instrument for this research was valid and reliable. Fourth, I assumed that the theoretical foundation of the study was a scientific reflection of the explored phenomena and that the variables within the study have been clearly defined and measureable. The first assumption was that quantitative methodology was the appropriate choice for the study and the results would be significant for those in law enforcement and governmental communities. Sixth, I assumed that the data of Florida counties from the 2010 United States Census Bureau was the most updated information available at the time I completed my research. I also assumed that the data collected by the FDLE and the Office of Economic and Demographic Research was accurate. Finally, it was assumed that the information accumulated provided data identifying which crime reduction strategies influence residential burglary rates.

Scope and Delimitations

This cross-sectional study concentrates on Florida county sheriff's offices, each with their own county government and sheriff's office. The study was limited to the 67 counties which make up the unincorporated jurisdictions throughout Florida. It excludes all other types of local policing agencies and is limited to only one state in the southern United States. As state and federal agencies do not impact or focus on residential burglaries, they were excluded from the study. This project also focused on residential burglaries, which excludes other types of burglaries, including commercial.

Limitations

One limitation to this study was the potential response rate from the sheriff's offices and a lack of clarity about the strategies they are using. Another limitation was the sample size was restricted to 67 sheriff's offices. A third limitation was parsing out the impact of other local policing agencies and their crime reduction strategies in the county level data. In urban areas and towns where there are multiple policing agencies, these agencies may also be implementing crime reduction strategies, either in tandem with the sheriff offices, or on their own (Ellen and O'Regan, 2010). A final limitation was the ability to isolate these other agencies effects on burglaries in their jurisdictions in order to test whether sheriff department's strategies are effective.

Significance of the Study

There are very few studies that examine the strategies used by sheriff offices regarding burglaries. Most of the research focused on major metropolitan police departments. Further, the literature is limited on the relationship between crime fighting

strategies of Florida sheriff's offices, the number of sworn personnel per thousand people, median household income, and the rate of residential burglaries. This cross-sectional study addressed the gap in research about urban/rural counties, median household income, and the number of sworn personnel per thousand population and how it influences the organization's identified crime reduction policy relating to burglaries.

This cross-sectional study contributed data on which factors should be given consideration in selecting a crime reduction policy for sheriff's offices. This inquiry is important because elected officials look for police administrators who can be effective crime fighters with limited resources. Law enforcement administrators need to continue to motivate their employees, reduce the public's fear of crime, and implement a crime reduction policy that is effective. The goal is to help the reader recognize the benefits of selecting a crime reduction policy that works given the demographics for the area. A second goal of this study was to provide a strategy that elected officials will be comfortable in funding. Studying crime reduction policies and the population will help determine which strategy is the most effective in reducing burglaries.

A law enforcement leader's crime reduction policies are a reliable predictor of the overall effectiveness of an agency (Boba, Santos & Taylor, 2014). Strong leadership not only strengthens, but inspires, and influences organizational change for crime reduction (Santos, 2013). If it can be ascertained what reducing crime strategies are connected to a reduction in burglaries, public confidence in elected sheriffs will increase, enhancing the longevity of the county's top law enforcement official. These social change indicators

may verify in future studies that the public's fear of crime can diminish if there is a correlation found between these variables.

Summary

Chapter 1 identified an introduction and statement of the problem pertaining to research on Florida sheriff's offices crime reduction strategies as it relates to residential burglaries. In addition, it addressed the critical gap in the literature regarding sheriff's offices strategies on crime reduction, urban/rural counties, the number of sworn personnel needed to carry out that strategy, the median household income of each county, and the success on reducing burglaries. Defining the type of crime reduction strategy each organization uses and research questions must be identified in order for this study to be relevant. This research is significant to the criminal justice field because it addresses the lack of standards in identifying a successful crime reduction strategy that leaders in law enforcement can use across the United States. Chapter 2 presents a coalescence of the current literature to validate the contingent framework that guides this study.

Chapter 2: Literature Review

Introduction

In 2013, there were 1.9 million burglaries reported in the UCR, costing victims around 5 billion dollars (UCR, 2013). Across the United States, residential burglaries account for 73.9% of all burglary offenses (FBI statistics, 2010). In Florida, one burglary is committed every 4 minutes (FDLE, 2014). With proper manpower allocation and adequate resources, these crimes are often thought of as suppressible crimes by law enforcement leaders (Kane, 2006). The majority of spending by state governments goes to three areas: crime, health and welfare, and education (Smith, 2002). By implementing a strategic plan that is tied to successful crime fighting strategies, the reallocation of resources can be tied to the program's success. Budget increases can be used an incentives for programs that work. Budget decreases can be linked to programs that fail.

There have been many crime fighting strategies that law enforcement administrators have implemented over the years to reduce residential burglaries in urban cities, including the following:(a) traditional policing, (b) community/problem oriented policing, (c) COMPSTAT, (d) intelligence-led policing, (e) hot spot based policing, and (f) evidence-based policing (Santos, 2014). Being proactive in solving certain crimes is more efficient than being reactive (Srinivasan, et al., 2013). Lockwood (2014) found that crime reduction strategies of law enforcement are generally more adaptable than changes to the sociodemographic conditions of neighborhoods. Reducing residential burglaries in a community can lead to a variety of benefits for both the public and the police to include reducing the fear of crime.

Although research has shown there is a relationship between the rates of residential burglaries with the population, there is little research between covariates such as median household income, number of sworn personnel per thousand population, residential burglary arrests rates, and urban/rural counties and crime reduction strategies of Florida Sheriff's Offices. Some Florida counties have both urban, suburban, and rural areas, making them a microcosm of the United States (Johnson, 2010, Shelley, 2010). Pynes and Corley (2006) concluded that Florida sheriffs are unique from other sheriffs and police chiefs in that they are constitutional officers elected every 4 years (except one) and derive their authority from the Constitution of the State of Florida. Other states have elected sheriffs who are not constitutional officers and whose duties include judicial services and security for the courthouse and jails, but may or may not include law enforcement duties (Kopel, 2015). Officials running for political office often use crime statistics in their campaign speeches to prove their point (Marion & Oliver, 2012). Voters elect a sheriff to be the guardian of the county to preserve the peace, maintain order, and defend freedoms and liberties (Kopel, 2015). While elected sheriffs, like other elected officials, find difficulty in new policy recommendations unless constituents agree, those up for re-election require active participation with the citizens they are elected to serve in order to reduce crime (Fabelo & Thompson, 2015).

While good leadership is important to the health of the organization and the community, a successful strategy on reducing residential burglaries along with proper personnel is also paramount. Lombardo, Olson, and Staton (2010) discovered there was empirical support for the argument that crime fighting strategies that decreased crime also

increased citizen satisfaction with the police. The relationship between residential burglaries and the public's fear of these crimes can be attributed to a variety of factors. These strategies, along with certain economic indicators, can help sheriffs not only reduce crime, but the fear of crime.

Economic indicators, such as property values and median household income, are intertwined with the crime rate in a community (Uludag, Colvin, Hussey, & Eng 2009). For instance, the commission of residential burglaries are noticeably lower during recessions (Phillips & Land, 2012) because unemployed citizens are staying at home and providing more guardianship. Additionally, the tax base of a geographic area can affect the crime rate (Li, Haining et al., 2014). The higher the income, the more resources residents and governments have to spend on guardianship like burglar alarms, private security, and police (Chastain, Qui, and Piquero, 2016). This can also vary by the amount of urbanization and the perception of safety depending on the type of area one lives in (Chastain, Qui, and Piquero, 2016). Economic indicators, along with other county demographics, may influence crime rates such as residential burglary.

Strong evidence suggests that there are differences in how socioeconomic variables, such as income differentiate urban, suburban and rural crime (Deller & Deller, 2011). Urban, suburban, and rural crime have similarities and differences in the way they are carried out by criminals (Norris & Reeves, 2013). Determining which combination of strategies work best in an urban/suburban/rural setting can be challenging for law enforcement administrators. Providing a template on which combination of strategies work in reducing residential burglaries and which ones do not can help law enforcement

leaders in the reallocation of resources. Responding to and investigating these crimes by police and sheriffs can be universal if one type of strategy or combination of strategies can be determined. Residential burglaries can have a tendency to increase in urban, suburban and rural areas that are considered hot spots if left unchecked by police (Rey, Mack, & Koschinsky, 2012). When residential burglar suspects discover an area where there is a low risk of getting caught, they repeat their behavior to maximize efficiency (Rey, et. al., 2012). These designated hot spots must be documented properly so that police can gather intelligence and develop a crime reduction strategy. In urban areas where police are more concentrated, but suspects more numerous, law enforcement decision makers need to develop a strategy where manpower is reallocated effectively (Brown, 2010). In suburban areas, criminals have to travel longer distances to commit their crimes, but the reward is greater due to residents with a higher than average household income (Rey et al.2012). In rural areas, police cover a larger geographic area and have to identify hot spots to maximize guardianship strategies (Deller & Deller, 2011). Burglary suspects often live within a short distance of where they commit their crimes (Ackerman and Rossmo, 2015). County demographics, such as rural and urban designators may influence crime reduction strategies as they relate to residential burglaries.

This study is based on the conceptual framework of Cohen and Felson's (1979) routine activities theory. A goal of the study was to determine what crime fighting strategies work in reducing residential burglary rates in Florida counties. This research is intended to develop a framework for future practitioners that may be considered for other

law enforcement agencies with similar demographics. There has been research conducted on crime reduction strategies of residential burglaries for urban cities. It was the intent of this study to determine which combination of the six types of crime reduction strategies are the most effective in reducing residential burglary rates in jurisdictions of Florida sheriff's offices. The literature review provides the scholarly foundation for this quantitative study in understanding (a) how residential burglary rates are calculated, (b) what is guardianship, (c) how crime reduction strategies are identified, (d) what is considered urban/suburban/rural areas, and (e) how median household, rate of burglary arrests, and the number of sworn personnel affects the crime rate. Literature related to differing methodologies was discussed at the end of the chapter.

Literature Research Strategy

Using Walden University's library database, articles were reviewed by topic. The topic of criminal justice was selected with criminal justice databases being used as search engines. The four criminal justice databases used were ProQuest Criminal Justice, Oxford Criminological Bibliographies, SAGE Premier, and Political Science Complete. Literature review of peer reviewed articles dating back 5 years were identified and studied for relevancy to this study. Some literature review went back further to help identify the theoretical framework for this study. Key search terms used were *residential burglaries, crime reduction strategies, crime rates, median household income related to crime rates, sworn police personnel, burglary arrests rates,* and *urban/rural burglary*.

Residential Burglaries

Crime Rates and Arrest Rates

In the United States, crime rates are reported each year to the FBI UCR section. The UCR is the standard by which all governmental entities in the United States measure crime (FBI UCR, 2013). Crime rates are based on the number of reported crimes divided by the population, which is usually broken down per 1,000 or 100,000 persons (FBI UCR, 2013). Population data is based on the United States census. Jurisdictional boundaries are determined by the government and the way they are defined has a noticeable impact on the crime rate (Leipnik, Ye, et al., 2013).

Each state is responsible for collecting certain crime data including residential burglary and forwarding the information to the federal agency (FBI UCR, 2013). Included in this data is the number of sworn personnel working for the law enforcement organization (FBI statistics, 2010). Any discrepancies or anomalies are audited by federal personnel and compared to previous year's reporting's of other law enforcement agencies with similar demographics (U.S. Department of Justice, 2014). In Florida, the agency responsible for collecting and reporting crime data to include residential burglary to the FBI is the FDLE.

A variety of socioeconomic factors such as income level can influence the crime rate in a community (Hedayati Marzbali, Abdullah, Razak, & Maghsoodi Tilaki 2012). These rates can be influenced by the number of law enforcement officers employed by an agency (Farrell et al., 2010). Community dynamics, deployment of manpower, and allocation of police resources can influence police response to crimes (Abdullah, 2014). Having the right number of police officers patrolling the streets can have an impact on

the crime rate over time (Rey et al., 2012). Additionally, crime rates can fluctuate depending on the education and income levels of a jurisdiction (Baciu & Parpucea 2011).

Crime and disorder can reduce the public's sense of attachment to their neighborhood and their overall community care and vigilance (Pitner, Yoo & Brown, 2013). An increased crime rate in a jurisdiction can negatively affect government services and leave them with a shortfall if left unchecked (Knepper, 2012). In order to have a sustainable economy and keep residents with an average median household income from leaving, the rate of crime in the community will play an important role (Kooti, Valentine, & Valentine, 2011). A declining crime rate gives the government the option of not needing to justify spending on hospitals, schools, and houses as a crime reduction strategy (Knepper, 2012). Residential burglary is one crime that law enforcement and the community can influence.

Arrest rates can influence crimes such as burglaries. Paternoster (2010) found that burglaries greatly decreased when there was an increase in arrests for such crimes. Sampson and Loeffler (2010) discovered a correlation between an increase in arrest rates and a decrease in the crime rate.

Residential Burglary

According to UCR statistics, there were 1.9 million reported burglaries, costing victims around 5 billion dollars (FBI UCR, 2013). The FBI's UCR division defines burglary as the unlawful entry of a structure to commit a felony or theft (FBI statistics, 2010). Residential burglaries are a subcategory of burglary and pertain to the home in which a person lives or resides temporarily or permanently (FBI UCR, 2013).

Residential burglaries are one of the most highly reported crimes and literature shows that certain factors affect it (Pitcher, 2010). Despite the high number of reported burglaries, on average only 10% of burglars are actually detected (Bernasco & Ruiter, 2014). Zhang, Zhao Ren, and Hoover (2010) found that residential burglaries exhibit the longest clustering of time and space related to other crimes. In addition, burglary suspects usually commit more crimes than they are caught for, sometimes twice as many as they have been convicted of (Snook, Dhami, & Kavanagh, 2011). Hirschfield, Newton, & Rogerson, (2010) found that homes in identified burglary crime areas were at the greatest risk of being targeted. Residential burglary is one of the few crimes in policing where crime fighting strategies can have an impact directly on crime rates (Weisburd, Hinkle, et al. (2011). If these strategies can be identified, law enforcement administrators can have a starting point in which to work with in reducing residential burglaries.

Clearance rates are calculated by comparing the number of reported crimes to the number of arrests or clearance in some other manner (Doerner & Doerner, 2012). Clearance rates for burglaries are poor, allowing burglary suspects to remain at large to commit more crimes (Nee, 2015). Clearance rates for crimes such as burglary are higher in small rural communities compared to urban communities (Paré, Felson, & Ouimet, 2007). One reason for this is that rural neighbors tend to know each other and know when someone or something is out of place.

Residential burglary has an adverse impact on property values (Wilhelmsson & Ceccato, 2015). Residential burglaries are influenced by certain community conditions

such as demographic and socioeconomic (Lee & Wilson, 2013). Those who live in affluent neighborhoods are just as susceptible to become burglary victims because of the items they possess (Zhang & Song, 2014). Economically disadvantaged areas have a direct impact on residential burglary rates (Ward, Nobles, & Youstin, 2014). Disadvantaged communities tend to have a higher rate of concentrated residential burglaries, however, neighborhoods are dynamic entities that change over time (Kikuchi & Desmond, 2010). In addition to economic factors, burglary can be directly impacted by social and spatial influences (Chang, 2011). The number of homes and how close they are to each other increase the likelihood of being a target for burglary (Bernasco, 2010). Burglary suspects are unlikely to travel far from their homes, making areas farther away, less attractive (Malleson et al., 2012). Being the victim of a residential burglary increases the chances of being a victim again and for homes that are nearby (Bernasco, Johnson, & Ruiter, 2015). Grohe, Devalve, & Quinn (2012) found that citizens list burglary as an important crime concern in their neighborhood because of the frequency of occurrence.

Theoretical Foundation

Cohen and Felson (1979) proposed that crimes are brought about by three conditions: a suspect, a suitable target, and the absence of an able guardian. Their proposal developed into the routine activity theory (Cohen & Felson, 1979). The routine activities theory to explain differences in crime victimization, maintaining that crime victims are more susceptible to motivated criminals who are attracted to targets with little or no guardianship (Uludag, 2009). Studies have shown that the routine activities theory

has applications on a large scale level such as the size of the community and the density of the population (Kuo, Cuvelier, et al., 2012). Guardianship is anything which acts to deter a potential criminal from committing a crime against a particular target (Hollis, Felson & Welsh, 2013). But the prime guardians in society are people whose presence, proximity and absence make it harder or easier to carry out criminal acts (Hollis et al., 2013). Identifying guardianship strategies in both urban and rural designations can assist law enforcement administrators in determining the proper number of formal guardians.

Although both motivation and guardianship matter for criminal opportunity, they operate differently, based on the time frame of analysis and the type of crime being studied (Andresen, 2015). Cohen, Felson, and Land (1980) showed that crime was adversely associated to population density in residential areas, which reduces available guardianship and the appeal as potential victims of property crime (McNeeley, 2014). Criminals may go into nearby neighborhoods to commit residential burglaries because of increased crime opportunities, lower levels of guardianship, poor natural surveillance, or a combination of these (Hirschfield, Birkin, & Rogerson, 2013). Hollis-Peel and Welsh (2014) discovered property crimes decreased where there was increased guardianship, allowing for the expansion of guardianship potential. Manasevich, Phan, & Souplet, (2013) found that burglary suspects will stop committing burglaries in an area that has enhanced guardianship. Guardianship intensity as it relates to property crimes can be measured through direct observation, and can be enhanced by physical and social factors that can help or hinder guardianship activities (Hollis-Peel & Welsh, 2014).

Guardianship of residential property combines physical potential as well as acts of monitoring and intervention (Hollis-Peel & Welsh, 2014).

Deciding which guardianship strategies work and measuring its effectiveness in reducing residential burglaries helps in determining which combination of crime fighting strategies to use. Security cameras that are monitored and active neighborhood watch groups are the most well successful guardianship strategies in use today (Hollis-Peel, et al., 2011). The implementation of routines (routines activity theory) in one location might help nearby locations that are having problems with residential burglaries (Rey, 2012). Key changes in routine activities and in a potential suspect's perception of success versus getting caught can help in developing crime reduction strategies. Residential homes and surrounding yards that are well maintained are expected to also have high levels of guardianship (Hollis-Peel, Reynald, & Welsh, 2012).

Police must work with residents in a community to encourage guardianship activities. Having a cohesive community that allows for resident participation in their community can increase the potential of a successful guardianship strategy (Ward, Nobles, and Youstin 2014)). The social makeup of a community can influence a residential burglar's decision on targeting locations where social cohesion is found (Johnson & Summers, 2015). Active guardianship is a proven strategy for deterring property crimes in residential areas (Reynald, 2011). Reynald (2009) found that guardians were more active in their community and more apt to call police when there was more social interaction between neighbors. Areas that are easily accessible and well-traveled have less of a chance of becoming the victim of a burglary (Chang, 2011).

Ward, Nobles, and Youstin (2014) found that residential burglaries will increase if a burglar perceives a lack guardianship in neighborhoods that are not socially cohesive. Homeowners can recognize intruders who are invading their property or their neighbors, but have difficulty identifying criminals in a public space (Johnson & Summers, 2015). This is where the police come in as formal guardians.

Police officers are considered formal guardians who have expertise and training that allow them to spot potential burglary suspects who appear out of place in a particular area (Reynald, 2010). Visible guardians such as police can significantly affect a criminal's perception of the risks and effort to commit a crime in a particular area (Reynald, 2015). Police are using guardianship strategies to enhance their crime reduction policies, but they also need to take into account demographic characteristics of the communities they work in. This suggests that established guardianship of a designated crime area can be enhanced by the police as a crime deterrence (Crank, Koski, et al. (2010). Determining how many police personnel to assign an area in order to be effective guardians is a budgetary concern for law enforcement leaders. Introducing police into identified residential burglary crime areas can drastically reduce the movements of criminal offenders and provide formal guardianship. Police can serve as capable guardians and disrupt, either directly or indirectly, the interaction between a motivated offender and residential burglaries (Hollis-Peel, Reynald, et al., 2011). Determining an effective crime reduction strategy for residential burglaries with the proper number of formal guardians (sworn personnel) is a template for success. This study explored which crime reduction strategies are associated with lower residential

burglaries while identifying the proper number of formal guardians for urban and rural jurisdictions.

Crime Reduction Strategies

Developing a crime reduction policy for residential burglaries that is effective for law enforcement organizations can include one or a combination of strategies. No crime reduction strategy works all the time in every location and must be tailored to fit specific problems. Law enforcement leaders can use evidence on whether criminals are local to design appropriate crime reduction strategies (Mawby, 2015). The integration of effective crime reduction strategies with instituted goals and objectives can help the public and police understand how the strategies will work. Formulation of a strategy is not enough. Implementation of the strategy is just as important to the overall success. One of the first steps is to determine which crime reduction strategy or strategies best suits the community's problems (Santos, 2014). McGarrell, Corsaro, et al. (2010) found that a multi-prong, focused deterrence crime reduction strategy can help reduce violent crime. Crank, Koski, et al. (2010) discovered that combining "hot spot" policing with Compstat can reduce certain burglaries. Vargas (2015) found that combining community policing, intelligence led policing, and problem oriented policing strategies did reduce burglaries in the city of Pembrook Pines, Florida. Each strategy has certain strengths in reducing crime. Determining which combination of strategies work best in an urban/suburban/rural setting can be challenging for law enforcement administrators.

Providing a template on which combination of strategies work in reducing residential burglaries and which ones do not can help law enforcement leaders in the

reallocation of resources. Lum, Koper and Telep (2010) created an evidence based policing matrix for law enforcement that was proactive, geographically based, and specific in its crime reduction strategy. This template is more effective in reducing crime than individual based, reactive, general ones and has three common factors: identifying the nature of the target, whether the strategy is reactive or proactive, and whether the strategy targets specific crimes or all crimes in a particular area (Lum, Koper and Telep, 2010). A template on strategies that sheriffs are using can be beneficial to law enforcement who work in an urban, suburban, or rural setting. Knowing when to change strategies when they are not working is another challenge that faces law enforcement administrators. Being able to adapt and combine strategies that may be more effective in reducing residential burglaries will benefit all stakeholders. Santos (2013) addressed in a case study how a law enforcement organization can change from a Compstat crime fighting strategy to one that is evidence based, and be successful in reducing residential burglaries. What strategy a department chooses has an impact on both the organization and the community.

Traditional Policing

Traditional policing strategies concentrate on responding to calls for service and handling crimes in a reactive manner. Performance is based on the number of arrests an officer makes and how quickly he responds and handles an investigation. Traditional policing was developed out of concern that police had no guidelines in which to follow and were seen as being more corrupt and less accountable to police administrators. Those who sought to reform the police (Vollmer and O. W. Wilson), wanted limited

involvement with the community and line officers. Reformers introduced a traditional policing strategy that was reactive and relied on the police to solve crime without outside influence. Police organizations became more professional, with educational and technological advances assisting them. Police departments in essence became a paramilitary organization which did lead to less corruption, but alienated them from the community.

Traditional policing is a crime reduction strategy that has been around since Sir Robert Peele. Often thought of as authoritarian in nature, traditional policing methods fostered an "us versus them" mentality. Typical responses to crimes are reactive in nature with police randomly patrolling areas. Police administrators do not solely rely on citizen input because of fear of corruption or undue influence by stakeholders with ulterior motives. Polite (2010) discovered that although traditional policing methods did not include much interaction with the public, it did focus on reducing crimes such as burglary that are reported under the Uniform Crime Report Part I crimes. Traditional policing consists of centralized decision making that affords little input from line officers and places priority on output over outcome in a "top down" approach to management (Shane, 2010). Police react to crime as it occurs, providing additional resources after a crime such as residential burglary. This type of crime reduction strategy has had little impact on the crime rate over the years (Telep & Weisburd, 2012). However, when combined with additional strategies which are evidence based, traditional policing can not only be effective, but encouraged by the citizenry (Rinehart, 2011). It's tough on crime stance although popular with conservatives, can be viewed as counterproductive to

community relations. New and more innovative approaches have been implemented as it relates to reducing residential burglaries.

Community Oriented/Problem Oriented Policing

Community policing strategies developed out of the 1960's Civil Rights movement in an attempt to improve police-community relations (Lee, 2010). Community policing was the most widely used policing method during the 1980's and is still used by many police departments (Telep & Weisburd, 2012). Community Oriented Policing Services (COPS Office, 2013) is a strategy that encourages partnerships and problem-solving techniques to solve crime, fear of crime and select social disorder issues. Community oriented policing (COP) derives from the concept of allowing community participation in the crime fighting strategy of the law enforcement organization. Decision making is decentralized with line officers working with citizens to come up with solutions to their crime problem.

Community partners identify particular crimes or quality of life issues that they feel are the most concerning and strategize with law enforcement partners in the problem solving process. Involving strategic partners is a win/win for both parties involved. Altering the way police interact with residents in the traditional since to one that is community oriented may have a positive effect on citizens' willingness to help the police control crime (Wehrman & DeAngelis, 2011). The community policing concept also relies on the community and police working together and getting to know one another. Dedicating law enforcement officers to quality of life issues that may not be criminal in nature can be time consuming. However, these quality of life issues are important to the

community and can help reduce crime and the fear of crime. Community policing balances reactive responses to citizen generated calls with proactive problem solving concentrated on the causes of crime and disorder. With inadequate manpower to handle criminal calls for service and routine patrol, citizen satisfaction with the police could suffer. Halsted, Bromley, Cochran, (2000) concluded that sheriff's deputies who practice community policing as their crime fighting strategy have better job satisfaction. Law enforcement administrators encourage creative and independent decision making of line personnel. Prior work has found that COP impacts burglary rates by working with community partnerships to determine what strategies can be used to deter residential burglaries. For example, forming a neighborhood watch and implementing crime prevention through environmental design (CPTED) principles help in enhancing guardianship strategies. Community policing strategies build trust within the community and assists in solving residential burglaries (Baskins & Sommers, 2011). Community oriented policing has become politically useful to law enforcement organizations because of the community input and "buy in" from stakeholders. Community policing is most effective when combined with other crime reduction strategies. Braga & Weisburd (2010) discovered a community policing approach to policing "hot spots" involved community input on strategies to make sure it did not damage police-community relations. Arslan (2010) discovered in a study in Texas that community policing does affect residential burglary rates. Building on police-community partnerships helps establish trust and improve communication.

The second step in community policing is the problem solving process. The main component of problem oriented policing is the problem solving component which compliments community policing strategies (Santos, 2014). Problem oriented policing involves using the SARA process (Scanning, Analysis, Response, and Assessment) in solving crimes (Weisburd et al., 2010). Taylor, Koper and Woods (2010) provided research on crime reduction strategies with an in depth analysis on Problem Oriented Policing (POP) and how reassigning additional resources such as manpower can reduce burglaries by one third. Problem oriented approaches to crimes such as burglary are effective and can be applied to a variety of crime issues (Weisburd, Telep, Hinkle & Eck, 2010). Telep and Weisburd (2012) found that although problem oriented policing approaches take longer to develop and produce results, the success in reducing crime is more long lasting. Allowing police and the community to come up with creative ways to solve chronic crime/disorder issues allows the public interest to be the driving concern of the organization. Braga and Weisburd (2010) discovered that problem oriented policing is an effective long term crime reduction strategy for chronic hot spots.

Combining community policing/problem oriented policing strategies with other crime reduction strategies are advantageous to law enforcement and the community. Both small and large police agencies consider community policing and problem oriented policing strategies to be effective in reducing property crime rates (Sozer & Merlo, 2013). By employing community/problem oriented policing crime fighting strategies, law enforcement leaders empower citizens instead of dictating to them. Community oriented/problem oriented poling presents a new organizational crime fighting policy that

allows law enforcement leaders to decentralize police authority and empower deputy sheriffs to make decisions.

Intelligence Led Policing

Intelligence led policing started in the United Kingdom as a result of police officers being more reactive to crime than proactive. This concept is offender based and concentrates on which offenders are committing crimes in a defined area. Intelligence led policing is different than other strategies like community oriented policing because it promotes decision making from the top down. Input from the community is encouraged for intelligence gathering, but not the main factor in deciding strategies and reallocating resources. Actionable intelligence is gathered and disseminated to decision makers who determine strategies and priorities.

Intelligence led policing is a top down approach to solving crime with decision makers using analyst's predictions to determine where to reallocate resources. Historically, most police organizations had no intelligence capacity or training on gathering intelligence. Only after the terror attacks of September 11th, 2001 did American law enforcement begin to work together to gather intelligence in a way that benefitted both local, state, and federal law enforcement. Although new to the United States, many law enforcement organizations are beginning to implement intelligence led policing strategies (Santos, 2014) and have been effective (Nguyen, 2010). Intelligence led policing started in the 1990's as a business model approach to solving suppressible crimes like burglary. Ratcliffe (2013) defined intelligence led policing as the application of criminal intelligence analysis as an objective decision making tool to help with crime

reduction and prevention through effective crime reduction strategies and community partnership projects from an evidential base.

Intelligence led policing strategies need input from police officers on the street, the public, and police administrators in order to be successful. Everyone must have buy in and be enthusiastic in its success. If the mechanism used to capture information at the street level is inefficient or difficult to use or manage, the entire success of the strategy will fail (Bell, Dean, Gottschalk, 2010). Gathering and disseminating actionable intelligence is paramount in intelligence policing. Police, citizens, and other stakeholders need to know the intelligence they are providing is being put to good use.

Knowing the possible suspects in an area can help police concentrate on prolific offenders. In property crimes cases such as residential burglary where DNA evidence is present, police are twice as likely to make an arrest (Roman, Reid, et. al., 2009). Human behavior in space is habitual and calculable, and applies to burglars and the areas they commit burglaries (Bernasco, Johnson, et al., 2015). Crime analysis is an important tool that can be used to identify potential suspects in identified areas of concern. Crime analysts study crime patterns and potential suspects by monitoring when criminals get out of prison, where they are located, and their prior history. Fox & Farrington (2015) found law enforcement organizations solvability rate increased 260% more for burglaries when using burglary offender profiles. Prior work has found that burglars often offend and re-offend near areas of past residence (Bernasco, 2010). Markson, Woodhams, et. al., (2010) and Tonkin, Santtila et. al., (2012) found that serial residential burglars commit

their crimes in geographically shorter distances between locations and in shorter time frame.

Although the effectiveness of intelligence led policing is still being debated, the use of crime analysts is paramount for this crime strategy to work in combination with other problem solving strategies (Santos, 2014). Although new, this crime reduction strategy by itself is effective in reducing residential burglaries. By using crime analysts to review intelligence to see which is actionable, they can identify prolific and repeat offenders in crime "hot spots" and pass that information on to line officers for investigation. Combining traditional enforcement strategies with intelligence led policing strategies can be effective and viewed as tough on crime (Rinehart, 2011).

CompStat

Many law enforcement organizations today have attributed crime analysis and crime mapping successes to the implementation of Compstat (Santos, 2014). The New York City Police Department under Chief Bratten implemented the Compstat strategy as a way of reducing spiraling crime in the city and holding police administrators accountable for their areas of responsibilities. Compstat was developed as a way to gather actionable intelligence on a particular crime problem, develop a plan to address that problem, respond quickly to the problem, and follow up/assess whether the response solved the problem. It was also developed as a template in which law enforcement leaders could use to address crime problems in their assigned area (Sugarman, 2010). With the implementation of Compstat and additional manpower, Chief Bratten's tenure as police chief saw an eighty percent reduction in crimes such as burglary.

The word Compstat is an acronym for the term computer statistics (Tiwana, Bass, et al., 2015). Compstat is a law enforcement management strategy that focuses on reducing crimes such as residential burglary by holding middle managers who work out of precincts/districts accountable. Each middle manager is required to attend weekly meetings and report on the crime in their assigned areas to see the progress of each district in reducing crime and if any additional resources are needed. Being innovative and open to new strategies is encouraged at these meetings to see if they work. Compstat is very effective for property crime (Jang, Hoover & Woo, 2010) and reducing crime and disorder in communities (Freeman, 2011) because it holds police managers responsible, maps high crime areas, and allows agencies to reallocate resources and focus on suppressible crimes such as residential burglary. One study in Fort Worth Texas showed the Compstat strategy had significantly decreased property related crimes such as burglary (Jang, Hoover, & Joo, 2010). Similar to problem oriented policing, Compstat uses the SARA model to analyze crime problems to determine who is committing the crime as well as when and where it is occurring (Santos, 2014). Meetings are held between middle managers and other stakeholders to analyze crime trends to determine what resources are needed to reduce crime in that area.

Evidence Based Policing

Evidence based policing is a strategy that uses scientific research evidence to direct program evolvement and effectiveness (Saunders, Lundberg, Braga, et al., 2015). Evidence based policing relies on a combination of the best research evidence with professional expertise (Weisburd & Telep, 2014). Using statistical analysis to determine

what crimes are being committed in what areas, evidence based policing needs administrative input to determine what crime reduction strategies should be implemented. As it relates to residential burglary, evidence based policing refers to the rate of residential burglaries and nearby additional burglaries that are higher than the average rate of a larger area (Cantrell, Cosner, et. al., 2012). Evidence based policing was established as an analytically based approach to reducing crime during a time of increasing crime rates when the public was distrustful of the police (Rinehart, 2011). Where Intelligence Led Policing concentrates on identifying prolific offenders in "hot spots", "Evidence based" policing uses a crime matrix to determine specific areas and times where crime is occurring and shows where resources should be allocated to help reduce crime or quality of life issues. Weisburd, Hinkle, et al. (2011) found in a single study experimental field test that intense evidence based policing crackdowns in targeted areas did not decrease citizen satisfaction with the police. When implementing an evidence based policing strategy, law enforcement leaders need to determine what the line officer's duties and responsibilities are in the particular area (Wells & Wu, 2011). Evidence based policing can be more effective long term when combined with other crime reduction strategies that understand why a particular crime is happening (Braga & Weisburd, 2012). Just spending time in a particular area because it was designated is not an effective way to reduce crime.

Hot Spot Policing

Reviewing policies from law enforcement organizations reveal that policing of "hot spots" show an initial overall reduction in crime to an enhanced presence of police

and police activity, and that criminals willingly weigh their consequences and reduce their offending (Paternoster, 2010). If identified "hot spots" of criminal activity can be identified, geographically targeted crime reduction strategies can implemented to maximize effectiveness. In their study, Johnson, Bernasco, et al. (2007) found in their research, that more burglaries occurred close to each other in space and time than would be expected on the basis of chance, validating that burglaries cluster in space. Santos, R.G. (2013) found that responding to identifiable "hot spots" did reduce residential burglaries in the short term. Being proactive in these strategies also means having adequate personnel to deter and investigate residential burglaries. Hot Spot based policing is effective in urban areas with more burglaries being reported, but less effective in rural areas where "hot spots" are more difficult to define (Hinkle, Weisburd, et. al., 2013). Rural areas tend to have geographic jurisdictions that are spread out, making it more difficult to define "hot spots". Hinkle, Weisburd, et. al., (2013) also found it difficult to find successes in "hot spots" in rural areas with low crime unless researchers consider these low base rates as a factor in future studies.

Multi-strategy Policing

Sometimes combining strategies can be more effective, however, goals need to be determined. Police administrators need to determine what their crime reduction goals are as they relate to residential burglaries and weigh them against staffing levels and what the community expects out of their police. Carter & Carter, (2009) compared Compstat and Intelligence led policing strategies and found that while each strategy has similarities and differences, Compstat is predominantly concerned with holding middle managers

accountable for street crimes such as burglary. Intelligence led policing strategies are a "top down" approach where all stakeholders have input accountability on the success of the overall strategy. Willis (2011) found that integrating strategies like Compstat and community policing helps law enforcement leaders earn the public's trust by involving them in the problem solving process while holding middle managers accountable. Combining Compstat strategy with community policing may work, but only if goals are predetermined to satisfy law enforcement management and the public (Willis, Mastrofski, & Kochel, 2010). Willis (2010) found combining these strategies help law enforcement leaders develop the public's trust by: continually reporting community problems at Compstat meetings; involving the community in problem solving strategies; and the use of Compstat maps and statistics to show fairness. By combining the Compstat strategy with problem oriented policing, a formal structure of accountability and community input can be beneficial to all stakeholders (Santos, 2014).

While one crime reduction strategy can be effective in reducing residential burglaries, combining these strategies may be more beneficial. Santos (2013) found that using Stratified model policing (Evidence based policing) helped reduce burglaries from vehicles. The Stratified Model builds upon Compstat strategies and outlines a template for institutionalizing crime reduction strategies into day to day operations by providing actionable intelligence while holding decision makers accountable through structured meetings (Boba and Santos, 2011). Lum, Koper & Telep (2011) developed an evidence based policing matrix that suggest proactive, place-based, and specific policing approaches are better at reducing crime than reactive strategies. Bond & Hajjar (2013)

found that combining evidence based strategies with problem oriented policing strategies drastically reduced burglaries by one third.

Urban/Suburban/Rural

Urban, suburban, and rural areas have diverse cultural and socio-economic characteristics that make them unique as a community. Crime reduction strategies that are successful in urban areas cannot be blindly transferred to suburban and rural areas (Deller & Deller, 2011). Criminals often need three things when committing crimes: a suitable target, opportunity and the absence of guardians (Cohen & Felson, 1979). Urban, suburban, and rural areas each present their own unique challenges for law enforcement personnel. Urban, rural, and suburban settings afford criminals different opportunities to commit crimes. Grubb and Nobles (2016) suggested that there may be a benefit to studying residential burglary risk on a micro-level of homogeneity in land use in suburbs and urban areas.

Population density is measured as the number of people per square mile. Urban areas tend to have more police per population and are able to respond to residential burglaries quicker. Suburban and rural areas surrounding urban cities, have less police personnel but a lower crime rate than their urban counterparts (Leipnik, Ye, et al. (2013). In rural areas, police response times may be longer because of the geographical area covered (Giblin, Burruss, et al., 2012). Some strategies are more successful depending on the density of the population. In urban areas, foot and bike patrol are an effective crime reduction tool that police officers use. Groff, Johnson, et al. (2013) provided quantitative research that the proper number of sworn personnel for foot patrol in

designated crime areas reduces crime.

Urban

Urban crimes are often committed in cities where populations are condensed. Urban crime has been studied in great length by scholars because the majority of the population lives in these areas (Giblin, Burruss, et al. 2012). One explanation is that criminals in urban areas are able to blend in with the public and have more places to hide. Another is that burglars are opportunity based and attracted to those neighborhoods that have several houses that can be accessed quickly (Townsley, Birks, et. al., 2014). Density of the population can be a help or hindrance to police when developing strategies. Prior work has found that housing density (ZhangZhao, et al., 2015), layout and types of streets can affect residential burglary rates in urban communities. Urban areas have more people frequent streets which increase guardianship and can directly or indirectly have an impact on residential burglaries (Malleson, See, et al., 2012). Johnson & Bowers (2010) discovered the risk of residential burglary is greater where there are major roads that are used more frequently. Police services are more numerous in urban areas often with police departments and sheriff's offices working closely together. The tax base in urban areas is more expansive allowing incorporated cities to levy additional taxes than their suburban and rural counterparts.

Suburban

In America, one of the most important developments to occur after World War II was the massive demographic shift of people who moved from urban areas to the suburbs (Marino, 2014). Foster, Knuiman, et. al., (2013) found that suburban homeowners

wanted to live in an area that encouraged people to be visible in the public realm ensuring the presence of territorial guardians. Over the years, high crime rates in urban areas have been viewed as one of the main reasons people leave cities and move to the suburbs (Ellen & O'Regan, 2010). People move out of the city and in to the suburbs to get away from urban issues such as crime and poverty (Marino, 2014). Suburban areas have unique residential burglary issues that make them attractable targets. Yet, suburban areas afford criminals an opportunity to commit crimes where the more affluent live with less guardianship than urban areas (Breetzke, 2012). English (2011) discovered a vast difference in the socioeconomic lifestyle of suburban homeowners to urban homeowners and the repetitive number of residential burglaries and motor vehicle thefts. Suburban areas are more at risk of burglary when they are close to impoverished communities (Malleson, See, et al., 2012). Those who can afford to, favor living in suburban or rural areas because they are seen as safer than living in urban cities (Kuo, Cuvelier, et al., 2012). Suburbs that directly border urban areas often begin to experience many of the same problems to include crime (Marino, 2014). Police services are spread out geographically and tend to have limited tax revenue options.

Rural

Limited research has been conducted on rural crime, making it difficult to make any correlation to which strategies work for both urban, suburban and rural settings. The United States census defines "Rural" as all people, and housing that are not included within an urban area (US Census, 2010). Property crimes to include residential burglary are higher in urban areas compared to their suburban and rural counterparts (Bureau of

Justice Statistics, 2013). This can be associated to the density in population of a defined area where socio-economic factors can more closely effect the crime rate. However, Mawby (2015) discovered rural areas may have an increased risk of residential burglaries than urban areas because of the remoteness to other homes and reduced guardianship. Because of their remoteness, rural areas have unique circumstances that police must address when developing crime reduction strategies.

Developing a predictive model for rural residential burglary can be difficult. Like urban residents who may distrust the police, rural residents may not report crime and handle things internally rather than getting law enforcement involved. Rural residents tend to take a more multipurpose approach of guardianship such as purchasing a burglar alarm, firearm, or dog when being the victim or there is a perceived risk of being a victim (Giblin, Burruss, et al. 2012).

Additional research in determining what makes a person commit a rural crime as compared to an urban crime is needed (Deller & Deller, 2011). Police services are often spread out across a larger geographic area and the ability of government to raise tax revenue is limited. Because of the limited law enforcement personnel in these rural areas, latent investigations are often followed up by the responding officer. Providing additional resources to help reduce residential burglaries can come in the form of formal and informal guardians. A socially cohesive community with guardians can assist in deterring residential burglaries.

Economic Indicators and Median Household Income

The correlation between crime and certain economic conditions cannot be overlooked. Certain economic indicators including unemployment (Alwee, Shamsuddin, et al., 2013; Baciu & Parpucea, 2011; Detotto & Ortanto, 2010), lower household income (Baciu & Parpucea, 2011; Detotto & Ortanto, 2010), consumer price index (Alwee, Shamsuddin, et al., 2013) and gross domestic product (which includes household income) (Alwee, Shamsuddin, et al., 2013) can be affected by the crime rate in a community. Out of all the environmental factors, a reduced crime rate is the most important comparison of economic health (Reese & Ye, 2011). Andresen (2015) found a positive relationship between unemployment and a criminal's motivation with property crimes such as burglary. However, he also found that those who are unemployed or have someone stay at home can reduce opportunity to residential burglaries and increase guardianship over personal property (Andreson, 2015). Both the empirical analysis and a graphical analysis show that a reduction in crime leads to an increase in property values (Pope & Pope, 2012). Wilhelmsson & Ceccato (2015) discovered that residential burglary has a negative impact on property values and these decreases varies across price categories.

In rural communities, economic growth/development and rural crime are intertwined (Deller & Deller, 2010). Median income in rural areas is seventy eight percent of urban median income showing that urban areas have a higher than average median household than rural areas because of the types of jobs and educational requirements (Department of Agriculture, 2014). Housing prices in rural areas are less

than their urban counterparts. In rural areas, evidence suggests that higher levels of social capital tend to be associated with lower levels of rural property crime rates (Deller & Deller, 2012). Rural economies are less diverse and have an economic base that consists of agriculture, mining and timbering (Donnermeyer, 2015).

Suburban areas tend to have homes that are more spread out with homeowners earning average to above average income. Having additional income allows homeowners to afford additional guardianship strategies like burglar alarms and living in a gated community. This environmental factor has allowed those living in suburban areas to experience a lower crime rate than urban areas (English, 2011). In 2013, property crimes such as burglary were highest in urban areas and in the western states (U.S. Department of Justice, 2014).

In urban communities, poor economic sustainability can lead to a higher property crime rate (Adidjaja, 2012). Pollock, Jong, and Lawton (2010) found that poverty has a positive correlation between the number of juveniles arrested for burglary. Income inequality in urban areas are strongly associated with property crimes such as residential burglary (Bapuji, 2015).

During the 1940s through 1960's urban areas saw a mass migration out of the city of middle class wage earners and in to suburban areas, causing median incomes to drop (Hyra, 2012). These economic indicators can affect the tax base of county government and the resources they have to invest in a community. Poorer neighborhoods tend to experience burglary hotspots of a long duration (Li, Haining et al., 2014).

Household income is the amount of income that is derived from all of the people living in the household. The median household income is the average of all incomes of people living in the household. The median household income of a county can give government decision makers an idea on how much money they will receive in annual tax revenues and be able to spend on combatting crime, improving education and providing adequate health and welfare to the citizens of the county. In areas where there is lower than average median household income, social structures begin to break down, allowing crime to take hold and flourish. Nwaokoro, Marshall, & Mittal (2013) discovered that if all things remain the same, crime will increase significantly if the wages in a household decrease. Adidjaja (2012) studied twenty five cities and found that there was an increase in property crimes in those cities with poor sustainability of keeping a median household income. Crime rates are higher in populations where the educational level is low and in families that have lower than average income (Baciu & Parpucea 2011). A nation's poverty rate is determined mostly by how elected officials distribute economic and other resources among the population (Raphael, 2013). Research suggests that continued high unemployment in a community can greatly influence the crime rate (Greenstone, & Looney, 2011).

In jurisdictions where there is an above average median household income, additional resources can be added to police budgets to help them combat crime. There is a correlation with higher levels of median household income and a reduced crime rate suggesting affluent counties encounter less crime than those below the median household income (Deller & Deller, 2011). However, Uludag, Colvin, et al. (2009) discovered that

income affected only the occurrence of household property crime and people with higher than average income were more likely to be targets. This can be associated with property owners being away from their home working. Most statistics show that residential burglaries occur when homeowners are away from their residence (Phillips and Land, 2012).

Being able to sustain a community can help reduce the crime rate. Crime is a deterrent to both residential and business location and economic prosperity (Liu, Kolenda, et al., 2010). All aspects of crime are considerably and adversely associated with the economic sustainability of a community (Reese & Ye, 2011). Cities with inadequate sustainability also report having a higher than average number of residential burglaries (Adidjaja, 2012). Fallahi, Pourtaghi, et al. (2012) concluded that creating a stable labor market provides an atmosphere that makes economic planning much easier, which helps control some types of crime such as burglary. Instead of spending more on police personnel, which will have no effect on the long term crime rate, governments should consider strategies that affect economic and social factors that influence long term crime rates (Narayan, Nielson, et al., 2010).

Adequate Sworn Personnel Impact on Crime

Having adequate and capable personnel in a law enforcement organization can produce higher satisfaction among sworn personnel as well as a higher success rate in reducing crime. Bonkiewicz (2016) found that there may be a relationship between the number sworn personnel deployed and crime rates and therefore should be examined in together. Farrell, Tilley, Tseloni, and Mailley (2010) suggested that hiring more law

enforcement personnel may reduce future crime rates within the United States. Coupe & Fox (2015) found that police represent a second layer of formal guardianship, which helps strengthen the guardianship principle. Clearance rates are more influenced by the number of sworn personnel and police expenditures per capita than anything else (Doerner & Doerner, 2012). Zhao, Zhang, et al, (2011) determined that increasing the number of police officers through community policing grants did in fact increase the number of burglary arrests. Determining the correct amount of law enforcement personnel without having diminished returns is key to appropriating future budgets.

In the United States, approximately eighty five to ninety percent of a law enforcement agency's budget is made up of personnel costs (Swanson, Territo, & Taylor, 2008). Thacher (2011) identified that more affluent police jurisdictions had more police personnel per crime than jurisdictions lacking sufficient resources. John, Jefferey, and Amanda (2016) found that deploying more police to high crime areas often diminish crime such as burglary. The number of law enforcement officers working for the organization may be correlated with the agency's crime reduction strategy and success in reducing residential burglaries. Burglaries can increase in cities where there is a reduction in new housing construction and where the size of the police force has been decreased (Baumer, Wolff, et al., 2012). Reallocating more law enforcement personnel to the "front line" of identified crime areas can eradicate crime "hot spots" (Jones, Brantingham, et al., 2010).

For sheriffs, finding the right balance of sworn personnel to effectively deal with crime such as residential burglary can be a daunting task. Since sheriff's offices are

responsible for unincorporated areas of the county, tax revenue per person is less than those in incorporated jurisdictions. Allocating resources for the right number of sworn personnel depends on certain economic indicators. Sheriff's offices in Florida have unique circumstances when budgeting for adequate personnel. Florida Sheriffs are constitutional officers who are elected by the public and are considered the chief law enforcement officer for the county. Their budgets are submitted each year to the county commission for scrutiny and approval. During the budgetary process, the county commission can increase, decrease, or maintain the status quo of the sheriff's budget request. This is a different process from city police departments within the county that are incorporated. In these incorporated areas, budgets are decided by a city council/commission, but carried out by a city manager. The city manager has the authority in most cases to hire and fire the police chief. Additional tax revenue is generated by those who live in incorporated areas.

Florida sheriffs are responsible for a variety of urban, rural, and suburban areas, making it challenging when assigning personnel. In rural areas, local sheriffs cover a larger geographic area and residents tend to handle certain crimes like burglary informally (Deller & Deller, 2011). This can influence decisions on what strategies to implement and how to reallocate resources. Personnel in rural police organizations may have to take on additional responsibilities.

Doerner & Doerner (2012) concluded that there is a correlation between the crime rate in select Florida cities and the number of sworn personnel working for the organizations. Doerner and Doerner (2012) also discovered in one city, a 2.6 percent

decrease in property crimes from adding a select number of sworn personnel. The correct number of sworn personnel per one thousand population as it relates to reducing burglaries is still being debated. Worrall and Kovandzic (2010) found an association between the number of police personnel assigned to an urban area and the number of reported burglaries.

Determining which crime reduction strategy or combination of strategies works in reducing residential burglaries can be a daunting task. Implementation must take into account demographic factors, including median household income and geographic location as well as resources available to the department. Those implementing these strategies need to also account for how many resources will be needed for each strategy's implementation. By studying these crime reduction strategies, decision makers can work together to come up with the best overall plan to be the most effective in reducing residential burglary.

Literature Relating to Differing Methodologies

Studying crime strategies has primarily been done using secondary data and surveys. These methods are the most common because they allow the researchers to examine the impact on specific crimes. Reynald (2011) used secondary data in his empirical study of opportunities for capable guardianship and found a correlation between active increased guardianship strategies and property crimes. This study helps validate that police guardianship can be an effective tool in reducing residential burglaries. Robinson (2010) proposed that residents can reduce being the victim of

residential burglary by adopting crime prevention strategies. The same can be said for a law enforcement organization's crime reduction strategy.

Santos (2015) used a quasi-experimental, ex post facto design in a case study in Florida of one police department using five years of data which showed that a combination of crime reduction strategies implemented in crime hot spots over a long period, can significantly reduce residential burglary. Telep and Weisburd (2012) reviewed crime reduction strategies and found that a multifaceted approach to reducing crimes such as residential burglaries is more effective in the long term and that further research was needed to determine if socio-economic status and/or an increase in the number of police officers are factors that reduce crimes such as residential burglary. The current study draws on Santos' work in examining the use of multiple strategies in determining which combination of strategies is effective in reducing residential burglaries, while relying on the work of Telep and Weisburd (2012) as a source to draw from on how to examine the number of police personnel per agency and the median household income of each county in Florida along with the combination of crime reduction strategies. Taylor, Koper, and Woods (2011) work on crime reduction strategies, such as problem oriented policing and intelligence led policing, impact reducing burglary will be used as an example for looking at how geographical areas can be examined (Florida county to Florida county).

This empirical study used a cross-sectional design to determine the relationship between the crime fighting strategies and levels of residential burglaries. This study provided quantitative results that can be used as evidence to all sheriffs in the state of

Florida to help assist with their crime reduction strategies. Lum, Koper, and Telep (2011) developed an evidence based policing matrix for law enforcement agencies to use in tactical and strategic development of crime reduction strategies. A similar model for the most effective combination of strategies will be developed which will be created using a formula for assessment values to be assigned to determine the composite of the overall crime reduction strategy.

An original survey was created asking sheriff's departments about their use of the six most commonly used crime reduction strategies used by law enforcement across the United States. The survey asked about the types of crime reduction strategies in place. The survey was sent to all 67 sheriff's offices in Florida to identify what residential burglary reduction strategies are used in their jurisdiction. The survey was completed by a representative of the organization that has knowledge about these questions.

Official census data was used to look at the median household income and the ratio of sworn officers to the population by county. The United State Census Bureau and Office of Economic and Demographic Research provided population data, which includes median household income, and urban/suburban/rural counties. The dependent variable is the rate of residential burglaries in each county for 2014. Crime data was collected from the Florida Department of Law Enforcement official statistics. Official data was combined with the survey results into a single data set for analysis.

Multiple regressions was used to determine the combination of strategies most significantly related to the rate of residential burglaries, while controlling for potentially related covariates such as urban/rural counties, median household income of the

population and sworn personnel per thousand populations. No author has done similar studies on Florida sheriff's offices as it relates to this topic. Santos (2013) conducted a qualitative case study of one department and whether their change in crime reduction strategies helped the organization reduce crime. This method and design fits my topic well because it understands the relationship between two quantifiable variables. This design study is driven by theory rather than by induction or exploration.

Summary

Each crime reduction strategy has its own unique characteristics in reducing residential burglaries and can be effective when combined with other strategies. Traditional policing strategies can be aggressive against the commission of crimes such as residential burglary when combined with other strategies. Community/problem oriented policing strategies are effective in reducing residential burglaries when using guardianship initiatives (i.e. neighborhood watch, alarm systems, etc.). Intelligence led policing's "top down" approach to reducing residential burglaries is only as effective as the intelligence gathered. Compstat's accountability standard using statistics to hold middle managers accountable for residential burglaries occurring in their assigned area can be an effective strategy. Evidence based policing strategies not only identify areas that police can concentrate on in reducing residential burglaries, but also provide a scientifically proven method for why police should reallocate resources to these areas.

Because each strategy has its strengths and weaknesses and each community has a unique set of characteristics, it is important for decision makers to have some easy way to assess which strategies work in what type of community. Using proven crime reduction

strategy for residential burglaries can reduce the crime rate and allow decision makers flexibility in reallocating resources for other crime issues. A template can be created for law enforcement entities to use, accounting for the characteristics of the community. Creating an efficient and effective policing policy builds trust and understanding with the public and shows accountability to the taxpayer through using best practices. Chapter 3 examined the quantitative methodology used to determine the relationship between the rate of residential burglaries for each Florida county and the crime fighting strategies used after taking into account median household income, number of sworn personnel, residential burglary arrest rates, and urban rural characteristics.

Chapter 3: Research Method

Introduction

This study examines the relationship between Florida sheriff's offices crime reduction strategies, urban/rural Florida counties, number of sworn personnel, median household income of the population, residential burglary arrest rates, and the rate of reported residential burglaries. In this chapter, I explain the setting, describes the population, and discusses the criteria for selection of participants. The chapter also includes information on the instruments and data sources being used. Finally, this chapter presents the data analyses procedures and justifies multiple linear regression as the most appropriate statistical test for this study.

Research Design and Rationale

The following sections identify the rational, design, and methodology. The first section identifies the target population size along with identifying and justifying the type of sampling strategy. The next section shows how the data was collected, including the research instrument used, the operationalization for each variable, and data analysis plan. The final section identifies threats to validity and ethical procedures.

Research Design

A quantitative, cross-sectional design was used in this research to determine the relationship between crime fighting strategies used by sheriff's offices (independent variable) and the rate of reported residential burglaries (the dependent variable) in Florida for 2014. While in part of the study I explored the difference in burglary rates, the study

remained a correlational design because I explored the relationship between variables in the model. My goal was not to determine cause and effect nor is use an experimental design. Community policing, intelligence led policing, COMPSTAT policing, traditional policing, hot spot policing, and evidence-based policing strategies are the most commonly used by law enforcement organizations in the United States (Santos, 2014). These strategies involve selecting an adequate number of formal guardians for urban/rural areas in order to affect residential burglary rates (Hollis-Peel, Reynald, et al., 2011). A quantitative methodology was the most appropriate method for this study as the hypothesis proposes a statistically measurable relationship between policing strategies and residential burglaries (Santos, 2014).

Setting of the Study

Florida is the third most populous state in the United States, behind California and Texas (McKinley, 2014). On average, there are 62 counties in each state of the United States (U.S. Census Bureau, 2010). Florida is representative of other states in that it has 67 counties, with each county providing law enforcement services, including running the local jails and courts (Kopel, 2015). Counties are subdivided into incorporated and unincorporated areas (United States Census Bureau, 2010). Each county elects or appoints a chief law enforcement officer (Pynes & Corley, 2006). Florida's demographics are similar to other states in terms of urban to rural ratio, making them a microcosm of the United States (Johnson, 2010, Shelley, 2010).

According to the 2010 U.S. Census Florida Population and Housing Counts, Florida has 38 counties that are considered urban and 29 counties that are considered

rural (United States Census Bureau, 2010). Areas in the panhandle are considered rural while central and southeast Florida are considered urban. Three urban counties (Dade, Broward, and Palm Beach) located in the southeast account for almost a third of the population (Florida Legislature, 2014). The Office of Economic and Demographic Research designates eight Florida counties (Broward, Duval, Hillsborough, Miami-Dade, Orange, Palm Beach, Pinellas, and Seminole) out of 67 as being dense urban land areas (Florida Legislature, 2014). This is important for this project, as the urban counties have access to a larger law enforcement population, which should affect the strategies they would use. Sheriffs work in conjunction with major city policing agencies to engage in crime prevention strategies (Deller & Deller, 2010). Rural sheriffs are often the sole law enforcement agency for a large area or they are working with much smaller policing agencies (Deller & Deller, 2011). This would impact the methods that could be used as well as the strategies that would be deployed.

Population of Study

The population for this cross-sectional study is all 67 Florida sheriff's offices. Florida sheriff's offices are responsible for urban, rural, and suburban areas, making it challenging when assigning personnel and choosing crime reduction strategies, including determining how and where to place resources when working with other law enforcement agencies (Ruddell & Mays, 2007). Florida sheriff's offices can be the primary law enforcement agency for unincorporated areas of the county where tax revenue per person is less than those in incorporated jurisdictions, making sheriff's more conscious of limited resources (Thacher, 2011). These offices are different from urban areas in that

most counties consist of a combination of rural and urban areas creating suburban locations (Kim, Bae, & Eger, 2009), which allows sheriffs to work with other agencies in the county. This can influence decisions on what strategies to implement and how to budget resources.

Florida sheriffs are unique from other law enforcement leaders, such as police chiefs, in that they are elected every 4 years (except Dade County, which is an appointed position) and derive their authority from the Constitution of the State of Florida (Pynes & Corley, 2006). Other states have elected sheriffs who may not be constitutional officers (Kopel, 2015). Duties for sheriffs nationally often include judicial services, security for the jails, and law enforcement duties (Kopel, 2015). Florida has full service sheriff's offices, which include law enforcement, court services, and jail responsibilities (Kopel, 2015).

Because Florida sheriffs are elected constitutional officers and responsible for protecting the county in which they are elected, they have unique circumstances when budgeting for adequate personnel. The organization's budget is submitted each year to the county commission for scrutiny and approval (LaFrance & Placide, 2010). However, a Florida sheriff is not beholden to the county commissioners who provide the monetary resources for the annual budget (LaFrance & Placide, 2010).

Sample

The sample was the 67 sheriff's offices identified through the Florida Sheriff's Association directory where the sheriff of each organization and his/her business email address was obtained. A preintroduction letter was sent to each sheriff's office (see

Appendix C) explaining that in 2weeks, a survey would be sent to their organization and the importance of the study. An introduction letter was then sent to the person identified as the Public Information Officer (PIO) to help frame the importance of the study and improve response rates (see Appendix B). A consent letter was sent prior to my collecting any research. The survey was sent out via Survey Monkey, an electronic internet based collection resource. Each department was assigned an identifier in the survey to identify their organization to assist in determining who has completed the survey. The PIO was the designated person to receive the introduction letter and survey and forward the items for sheriff's office approval. Each sheriff's office was asked to have a senior officer who is responsible for creating deployment strategies complete the survey. A request to complete the survey within 2 weeks of receipt was included.

Sources of Data

Survey Instrument

The questionnaire was developed by the researcher based on literature about the most commonly used crime reduction strategies for residential burglary (see Appendix A). The questionnaire helped identify in each county, which strategies were used in year 2014. The questions are drawn from the work of Darroch and Mazerolle (2012), Willis, Mastrofski, and Kochel (2010), and Uluturk, (2012) who each looked at a variety of policing strategies. The questions about how sheriff's office crime reduction strategies target residential burglaries were based on the work of Gottschaulk and Gudmundsen (2010) who examined how an organization engages in policing strategies to reduce crime.

Each crime reduction strategy was listed and a short definition was included to ensure sheriff's offices knew what strategy was being addressed. Participants were asked whether its sheriff's office used the following strategies in 2014:

- Community/Problem-oriented policing
- Intelligence-led policing
- COMPSTAT
- Traditional policing
- Evidence based policing
- Hot spot based Policing

This survey was used to collect the information corresponding to the independent variable, crime fighting strategy, used in 2014. The instrument was given to the participants electronically using Survey Monkey. SPSS version 22 was used to conduct the statistical analysis to determine if there is a relationship between crime reduction strategies, a specific year these strategies were used and the number of residential burglaries while taking into account urban/rural characteristics, median household income, and number of sworn personnel per thousand.

Panel of Experts Review

A panel of experts reviewed the questionnaire. Five solicited experts in the law enforcement profession and academia, each with a master's degree or higher, received an introductory email and were asked for their assistance in reviewing and critiquing the questionnaire. They were also informed that their participation would exclude them from participating in the final study. The experts were asked for opinions on the quality of the

questions and whether they thought the questions were relevant to the study. The experts' opinions helped me in redesigning and refining the questionnaire, and after review and modification, the experts agreed that the instrument had content validity. The panel review also helped me in establishing the validity and reliability of the data being collected and reduced researcher bias, adding clarity to the instrument.

The first expert is an undersheriff for a sheriff's office in the southeastern United States with 28 years of law enforcement experience. This expert holds a PhD in organization and management and teaches part time. This expert has worked on developing strategic crime reduction strategies related to residential burglaries in both urban and rural settings. This expert also worked as a detective investigating residential burglaries.

The second expert has been a law enforcement professional for 25 years and holds a master's degree in education. This expert is a major of patrol operations for a sheriff's office in the southeastern United States that consists of both rural and urban areas. This expert has worked on developing crime reduction strategies as they relate to reducing residential burglaries. This expert also worked as a burglary detective investigating residential burglaries.

The third expert is a law enforcement professional with 25 years of experience who holds a masters in criminal justice. This expert is a major who supervises the detective division for a sheriff's office in the southeastern United States that includes detectives who investigate residential burglaries. This expert has worked on developing

crime reduction strategies as they relate to reducing residential burglaries. This expert previously worked as a detective investigating residential burglaries.

The fourth expert is a law enforcement professional with 24 years of experience who holds a master's degree in criminal justice and is a graduate of the FBI National Academy. This expert is a patrol captain for a sheriff's office in the southeastern United States and oversees a patrol division that responds to and investigates residential burglaries. This expert is involved in developing crime reduction strategies for his organization. This expert previously worked as a detective investigating residential burglaries.

The fifth expert is a professor with a PhD in sociology with a concentration in criminology. This expert is a professor and current chair of the criminal justice program for a university in the southeastern United States. This expert has taught criminal justice for 10 years and has been chair of her program for 3 years.

Pilot Study

A pilot study was conducted after IRB approval with the revamped questionnaire being given to the five panel of experts for their feedback. This feedback was used to identify any ambiguities and the ease of answering each questions. In addition, this feedback determined whether each question gives an adequate range of responses and these responses can be interpreted in terms of the information that is required. This study helped refine any procedures that need to be addressed before the final survey is administered.

Additional Data Sources

Additional data came from two sources. The first is reported Part I crimes from UCR, specifically the rate of residential burglaries reported from 2014. Each year, Florida law enforcement organizations, including county sheriffs, report this data to the FDLE. County sheriff's offices report residential burglaries and arrests that occur within the county, which include cities that contract with county sheriff's offices, (FDLE, 2014). FDLE UCR statistics provide standardized data on annual crime statistics from across the state. A request was made to the FDLE for this data for each sheriff's office. The number of sworn personnel was determined using data from the Criminal Justice Agency Profile Report for 2014 (FDLE, 2014).

The second source was census information from the United States Census Bureau. This data includes 2014 median household income from each Florida county. For the purposes of this study, urban and rural areas were determined using data of Florida counties from the 2010 United States Census Bureau (U.S. Census Bureau, 2010) and was the most updated information available during my research period. The data is an official designator which uses census data to determine rural and urban counties (U.S. Census Bureau, 2010). A data set was constructed by combining information from county level demographic information and crime rate statistics.

Study Variables

The study variables include the independent, dependent, and covariates. The dependent variable is defined as the rate of residential burglaries in 2014 per 100,000 residents. The 2014 rate of residential burglaries of each Florida county was extracted

from FDLE statistics. The crime rate statistics from 2014 was used because they are the most current statistics that were complete by the time of this study for the entire year.

The independent variables used are community policing, intelligence led policing, COMPSTAT policing, traditional policing, hot spot policing, and evidence based policing strategies. The independent variables are frequencies of use of crime reduction strategies measured at the ordinal level and whether a strategy was used at the dichotomous level. Each sheriff's office was asked how often they use each of these six strategies, ranging from never (0) to always (5), which was an ordinal level variable. An additional response for other strategies not included in the survey was also included. Additionally, for each of the six strategies, a dichotomous variable was constructed and dummy coded as follows: the value 0 was assigned if they report not using the strategy for 2014 and 1 if they report using the strategy for 2014. Following Smith (2014), who dichotomized the strategy variables in order to examine the count frequency of use, this project is also dichotomizing the "how often" variable into either did or did not use to look at how often they used the strategies. The ordinal variable of "how often" was used to look at the relationship between strategies and burglary rates, similar to Celik (2010).

County characteristics are variables drawn from data provided from the 2010 United States Census Bureau which classifies all urban and rural areas within all fifty states of the United States (United States Census Bureau, 2010). The United States Census Bureau defines an urban area as areas with a population density of at least 1,000 people per square mile and surrounding areas that have an overall density of at least 500 people per square mile (United States Census Bureau, 2010). In addition, the U.S.

Census Bureau defines a rural area as an area with a population density of less than 100 individuals per square mile or an area defined by the most recent U.S. census as rural (United States Census Bureau, 2010).

Using data of Florida counties from the 2010 United States Census Bureau, counties were designated urban or rural (Florida Department of Health, 2012). This created a categorical variable with one for urban and zero for rural. Median household income was determined using the United States Census calculation for median household income for each Florida County for 2014. This is a ratio level variable since it has an absolute zero point.

The 2014 rate of residential burglary arrests of each Florida County was extracted from Florida Department of Law Enforcement annual statistics. The crime rate statistics from year 2014 was used because they are the most current statistics that were complete by the time of this study for the entire year. This is a ratio level variable.

The number of sworn personnel was determined using data from the Criminal Justice Agency Profile Report for 2014 from the Florida Department of Law Enforcement, which shows the number of sworn personnel per thousand for 2014 for each Florida sheriff's office (FDLE, 2014). This is a ratio level variable.

Table 1

Variables and Measurement level

Variable	Type	Levels of Measurement	Data Sources	Units of Analysis
Burglary rate	Dependent	Continuous	Crime Data	Rates of residential burglaries per 100,000 population

Strategies of Policing				
Traditional policing	Independent	Dichotomous	Survey Data	Yes/No
Community/Problem Oriented policing	Independent	Dichotomous	Survey Data	Yes/No
COMPSTAT policing	Independent	Dichotomous	Survey Data	Yes/No
Intelligence-Led policing	Independent	Dichotomous	Survey Data	Yes/No
Evidence based policing	Independent	Dichotomous	Survey Data	Yes/No
Hot spot based policing	Independent	Dichotomous	Survey Data	Yes/No
Traditional policing	Independent	Ordinal	Survey Data	5 point Likert
Community/Problem Oriented policing	Independent	Ordinal	Survey Data	5 point Likert
COMPSTAT policing	Independent	Ordinal	Survey Data	5 point Likert
Intelligence-Led policing	Independent	Ordinal	Survey Data	5 point Likert
Evidence based policing	Independent	Ordinal	Survey Data	5 point Likert
Hot spot based policing	Independent	Ordinal	Survey Date	5 point Likert
Median household income	Covariate	Continuous	Census data	Dollars
Urban/rural county	Covariate	Dichotomous	Census data	Binary
Sworn personnel	Covariate	Continuous	Crime data	Law enforcement officers per one thousand population

Residential burglary arrest rate only	Covariate	Continuous	Crime data	Rates of residential burglary arrests per 100,000 population

Data Set Construction

The data set used for the analysis was constructed by combining the information from Survey Monkey with the other data sources. Because the data is not confidential and anonymous, departments were asked to identify themselves during the survey. The data set was created in Microsoft Excel. After the initial data set has been constructed, it was read into an SPSS file to allow for statistical analysis.

Data Analysis Plan

SPSS version 22 was used for data analysis. Prior to performing statistical analysis the dataset was checked for potential data entry errors and consistency checks were performed. Significance was indicated by p-values of less than 0.05, as is standard in the social sciences. If the significance is less than 0.05, the null hypothesis will be rejected.

This section describes the statistical methods that were used to address the following research question: To what extent are residential burglaries associated with community policing, intelligence led policing, COMPSTAT policing, traditional policing, hot spot policing and evidence based policing strategies, while identifying the proper number of formal guardians for urban and rural jurisdictions.

Research Question 1: Are some crime fighting strategies employed by sheriff offices more effective than others in controlling burglary rate?

H_a1 There is a relationship between whether a crime fighting strategy of Florida sheriff's offices was used and residential burglary rates, after controlling for median household income, sworn personnel per thousand, residential burglary arrest rates, and rural/urban community types.

H_o1 (null): There is no relationship between whether a crime fighting strategy of Florida sheriff's offices was used and residential burglary rates, after controlling for median household income, sworn personnel per thousand, residential burglary arrest rates, and rural/urban community types.

Research Question 2: Are there different crime fighting strategies that will be associated with different residential burglary rates, after controlling for county and department characteristics?

H_a2: Each crime fighting strategy will impact residential burglary rates differently, after controlling for median household income, sworn personnel per thousand, residential burglary arrest rates, and community type (urban/rural).

H_o2 (null): Each crime fighting strategy will impact residential burglary rates differently, after controlling for median household income, sworn personnel per thousand, residential burglary arrest rates, and community type (urban/rural).

First, descriptive statistics will present the demographic characteristics of Florida counties and crime reduction strategies of the sampled sheriff offices. Mean and standard

deviation were reported for continuous variables and frequencies and counts for categorical variables.

Second, bivariate analyses were conducted. Before proceeding to the multivariable analysis, it is recommended to explore the relationship between the dependent variable and each individual explanatory variables at the bivariate level (Nachmias & Nachmias, 2008). Following Smith (2014), who dichotomized the strategy variables in order to examine the count frequency of use, this project is also dichotomizing the "how often" variable into either did or did not use to look at whether these were used with burglary rates. The ordinal variable of "how often" was used to look at the relationship between strategy and burglary rates, similar to Celik (2010), for the regression. The Student's t-test was used for the bivariate strategies and urban/rural and correlations was used with continuous variables (i.e., median household income) to see their bivariate relationship with burglary rates.

A hierarchical regression model was fitted with the 2014 crime rate as the dependent variable and the ordinal strategy variables as predictors. In the first block, the strategy variables were included. The model included control variables in the second block of the model. The change in R-squared was reported and its corresponding F-test were used to establish whether there is a significant relationship between residential burglary crime rates and the use of strategies, after adjusting for the controls (Hypothesis 1). Hierarchal regression analysis is the accepted statistical method when a researcher is interested in controlling the way the predictors and covariates are entered in the regression model (Aron & Aron, 1999; Rudestam & Newton, 2007). It allows the

researcher to specify a fixed order to control for the effects of covariates or to test the effects of certain predictors independent of the influence of others.

Hypothesis 2 was addressed using the t-tests corresponding to the individual regression coefficients for the strategy dummies. This helped determine whether a particular strategy has a significant effect on residential burglary crime rates.

Threats to Validity

For each regression model, the variance inflation factor (VIF) was examined to ensure there are no issues of multicollinearity. Should multicollinearity issues arise, only the most predictive variable was kept in the analysis. The following analysis of the residuals was performed: (1) visual examination of the predicted values versus the standardized residuals to check that the homoscedasticity assumption is met, (2) a Q-Q plot to assess the normality assumption; (3) box plot and stem-and-leaf plot to identify any potential outlier and a (4) plot of the observed versus predicted values to make a diagnosis of the linearity assumption.

The researcher will try the following approaches if any of these assumptions are violated. If there is a problem of heteroscedasticity a variance stabilizing transformation will be tried on the dependent variable (e.g. logarithmic, squared root). Non-normality and non-linearity could be addressed by fitting a non-linear regression model. In particular, Poisson and negative binomial are appropriate when the dependent variable is rate data (Cameron & Trivedi, 1998).

Ethical Procedures

An Institutional Review Board (IRB) application was initiated because I am collecting and analyzing survey data. Approval of these procedures by the university's IRB is needed to ensure that my research complies with university's ethical standards and U.S. Federal guidelines. I required all necessary permission from each participating agency in answering the survey question about which crime reduction strategy they use in reducing residential burglaries. Because the data is confidential, not anonymous, departments were asked to identify themselves during the survey. This study involves human subjects who provided data that is public information. This study did not ask questions about their personal lives. Introduction letter instructions explained responses are confidential and results are an aggregate of all county responses. After IRB approval (Approval #03-23-17-0088751), I collected all data. The data was stored on a flash drive and secured in a safety box for five years.

Summary

This chapter describes the research study, sample, setting, instrument and additional criteria relating to the project. This chapter contained information on the validity and reliability of the instrument. The study proposed and justified a quantitative methodology that used an empirical approach to test the research question. The data was analyzed and tested using SPSS version 22. The study identified an acceptable population that can be used to generalize to other law enforcement organizations. The following chapter detailed what process was followed analyzing the results. The findings

were then be presented and discussed. Finally, a presentation of the results and suggestions for future studies was included.

Chapter 4: Results

Introduction

This chapter discusses the results of the data analysis. The survey data was combined with secondary date of median household income, sworn personnel per thousand population, urban/rural demographics, reported residential burglary rates, and residential burglary arrests rates. The association between county characteristics and burglary rates is discussed as well as their association with crime reducing strategies. Finally, an analysis of the relationship between crime reduction strategies and reported residential burglary rates was conducted while controlling for covariates.

Data Collection

Pilot Study

A pilot study was conducted by having five experts in law enforcement review the questionnaire. Their feedback was used to identify any ambiguities and the ease of answering each questions. This feedback determined that each question gave an adequate range of responses, was concise and to the point, easily understandable, and interpreted in terms of the information that was required. No changes in instrumentation or data analysis strategies was needed. The pilot study helped refine the procedures before the final survey was administered.

Response Rate

The state of Florida has 67 sheriff's offices which coincides with the number of counties in Florida. The survey was emailed via survey monkey to the 67 sheriff's offices. Sixty-six sheriff's offices were considered for this study because one sheriff's

office did not report their residential burglaries to the FDLE for 2014. Of the 66 sheriff's offices (participants), 63 surveys were returned and usable for this study. Approximately 95% of the population responded to the survey. This successful response rate provided an adequate sample size to conduct the research.

Results

A preintroduction letter was emailed via addresses that are made public through the Florida Sheriff's Association website to the 67 sheriff's offices, explaining the study and that in 2 weeks, an introduction letter and survey would be sent to their organization (see Appendix B). Some representatives from the sheriff's offices emailed me back before the letter of introduction was sent and advised that they would be the point of contact when the survey was sent out. After waiting 2 weeks, the introduction letter, consent form, and survey was sent to each sheriff's office via Survey Monkey, an electronic internet based data collection resource. A 2-week window was given for participants to complete the survey. Data from Survey Question 1 identified which organization was participating in the survey.

Data from Survey Questions 2 through 8 represented how often each department stated they used a strategy to help with residential burglaries. The questions were scored ordinally in the following way: Never = 1, Rarely = 2, Sometimes = 3, Very often = 4, Always = 5. Data from Question 9 was an open-ended question which asked if the participant of the organization had anything else to add. Data was placed in a Microsoft excel spreadsheet.

Secondary data on the number of sworn personnel from each sheriff's office, residential burglary arrests and reported residential burglaries for 2014 were obtained through public records from the FDLE. In addition, secondary data of median household income and urban/rural designations were obtained through U.S. Census records. The data was collected and placed in a Microsoft excel spreadsheet with the survey data.

The purpose of this study was to examine how policing strategies are associated with levels of residential burglary rates for 2014, controlling for median household income, urban/rural demographics, residential burglary arrest rates, and police-population ratio. This research attempted to determine any associations between crime reduction strategies of Florida sheriff's offices, reported residential burglary rates and covariates for 2014. This chapter examines the results of the data analysis conducted to address the following research questions:

Research Question 1: Are some crime fighting strategies employed by sheriff offices more effective than others in controlling the burglary rate?

Research Question 2: Are there different crime fighting strategies that are associated with different residential burglary rates, after controlling for county and department characteristics?

Data Construction

Four counties were eliminated from the analysis for a lack of data. Table 2 shows the counties and their characteristics.

Table 2
Eliminated County Characteristics

Agency	Median Household Income	Rural	# of Sworn Officers	Total Population	Deputy Ratio per 1000	Reported Burglary Rates	Cleared by Arrest 2014
1	$46,620.00	Rural	30	33,520	0.89	*	*
2	$35,483.00	Rural	15	7,710	1.95	0	0
3	$40,984.00	Rural	23	12,852	1.63	226	8
4	$36,114.00	Rural	15	14,633	1.03	902	205

Results

Descriptive Statistics

Mean and standard deviation for the covariates and burglary were reported in Table 3. The mean for the median household income for Florida is *M* = $44,168 with a minimum household income of $32,714 and a maximum household income of $65,575. The mean for number of sworn deputies for Florida is *M* = 293 with a minimum number of 3 and a maximum number of 2736. The mean for total population unincorporated in Florida is 187,323 with a minimum number of 6,680 and a maximum of 1,243,451. The mean for deputy ratio in Florida is *M* = 1.46 with a minimum number of .34 and a maximum number of 3.44. The mean for burglary rates for Florida in 2014 is *M* = 379 with a minimum number of 21 and a maximum number of 781. The mean for cleared by arrest for Florida in 2014 is *M* = 72 with a minimum number of 3 and a maximum number of 225.

Table 3.
Descriptive Statistics Independent Variables

	Mean	Std. Deviation	Minimum	Maximum
Median Household Income	44168.78	7584.73	32714	65575
# Sworn Officers	293.70	467.87	3	2736

Total Population Unincorporated	187323.33	249938.22	6680	1243451
Deputy Ratio per 1000	1.46	0.55	0.34	3.44
Burglary Rates 2014	379.38	158.30	21	781
Cleared by Arrest 2014	72.10	37.35	3	225

Table 4 shows the correlations between community characteristics and rates. There were no differences in residential burglary rates between rural and urban counties (M_{Urban} = 384.7 vs M_{rural} = 375.7; *t(2)*=-.222, *p*=.825). A Spearman correlations between residential burglary rate and county characteristics was run. There is a negative correlation between residential burglary rate and median household income (*r*=-.282, *p*=.025). The correlation between residential burglary rate and sworn personnel is positive but not significant at a 5% level (*r*=.226, *p*=.075). Deputy ratio is positively and significantly correlated with residential burglary rate (*r*=.301, *p*=.017) and so is residential burglaries cleared by arrest (*r*=.484, *p*<.001).

Table 4

Correlation of County Characteristics and Crime Rate

		Residential Burglary Rate
Median Household Income	*r*	-.282*
	sig	0.025
Sworn Personnel per 1000	*r*	0.226
	sig	0.075
Deputy Ratio per 1000	*r*	.301*
	sig	0.017
Residential Burglaries Cleared	*r*	.484**
	sig	0

Association between the Use of Strategies and Crime Rate

Independent sample *t*-tests were used to assess differences in the average residential burglary rate for different levels of use (never/rarely vs sometimes/very often/always) of a particular strategy. There was no difference between urban and rural counties in terms of burglary rates ($t(61)= .222$, $p = .825$).

According to the *t*-test, no significant differences in crime rate were found for any of the dichotomous strategy variables. This does not mean that the crime strategies are not effective. For instance, this analysis does not take into account the fact that more than one strategy may be used at the same time or that counties that use more of a particular strategy may have a different demographic make-up.

Relationship between the Strategies Used and Crime Rates

Scatterplots were run to test linearity and what was correlated at the bivariate level with burglary (See Appendix D). Unlike earlier analysis, the ordinal level strategies variables were used in the correlation and regression. Table 4 shows the correlation of burglary rate and all of the variables that might be included in the analysis. Only one of the variables were significant. As medium income increased, burglaries decreased ($r(63) = -.286$, $p = .023$).

The test of the assumptions was conducted to ensure there was no violations. A histogram was run to test for the distribution of the dependent variable (See Figure 1). The distribution is fairly normal, with a mean of 379 and a standard deviation of 158. All of the data fits within three standard deviations from the mean. It should be noted there is a higher number of counties with burglary rates at the high end of the distribution, but given the county sizes, this is not unexpected. The Kolmogorov-Smirnov Test and the Shapiro-Wilk Test were also run to test normality, with the K-S showing no significance abnormality (K-S = .090, $p = .200$) and the Shapiro Wilk showing significance abnormality (S-W = .956, $p = .025$). Results show that the variable was normally distributed. The skewness and kurtosis statistics were run, and both showed the distributions to be well within range of normality (See Table 5). Given this, we are supporting that the assumption that the dependent variable is normally distributed. The histogram also demonstrates a lack of outliers in the data.

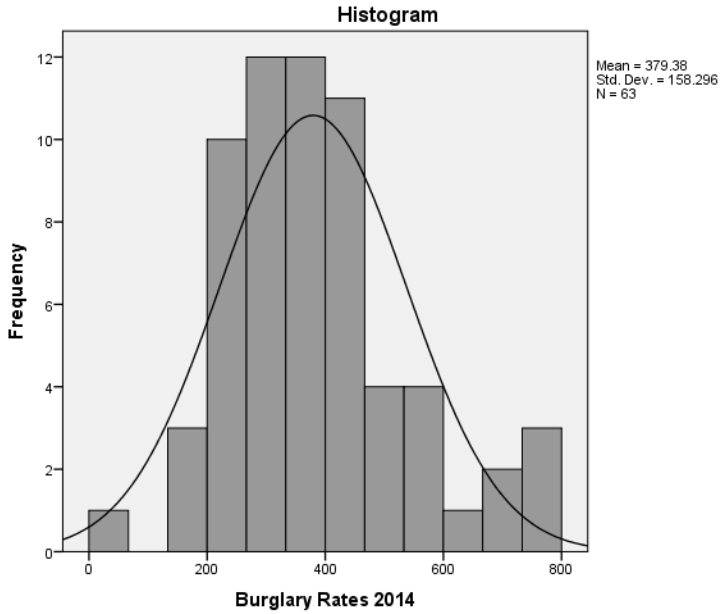

Figure 1: Histogram of Burglary Rate in 2014

Table 5
Distribution of Burglary Rates

	Mean	SD	Skewness	SE	Kurtosis	SE
Burglary Rates	379.38	158.296	0.689	0.302	0.490	0.595

A P-P Plot of the residual versus the predicted values was run to test the assumption of linearity (See Figure 2). While it is not perfect, we do see the plot does follow a relatively line pattern.

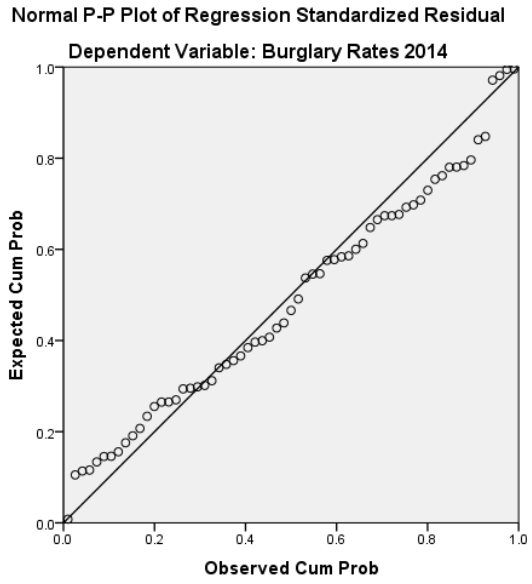

Figure 2: P-P Plot of Residuals

To test the assumption of multicollinearity, the correlations with the DV as well as an examination of the Variance Inflation Factor (VIF) was conducted. Neither showed issues with multicollinearity. All of the VIFs were well below 5. The Durbin-Watson test demonstrated a lack of autocorrelation in the regression, D-W = 1.867, showing this assumption was also not violated. A D-W around 2 shows a lack of autocorrelation. Finally, we can see in Figure 3 a test of homoscedasticity. A visual inspection of the scatterplot supports that there is no heteroscedasticity and that this assumption is not violated.

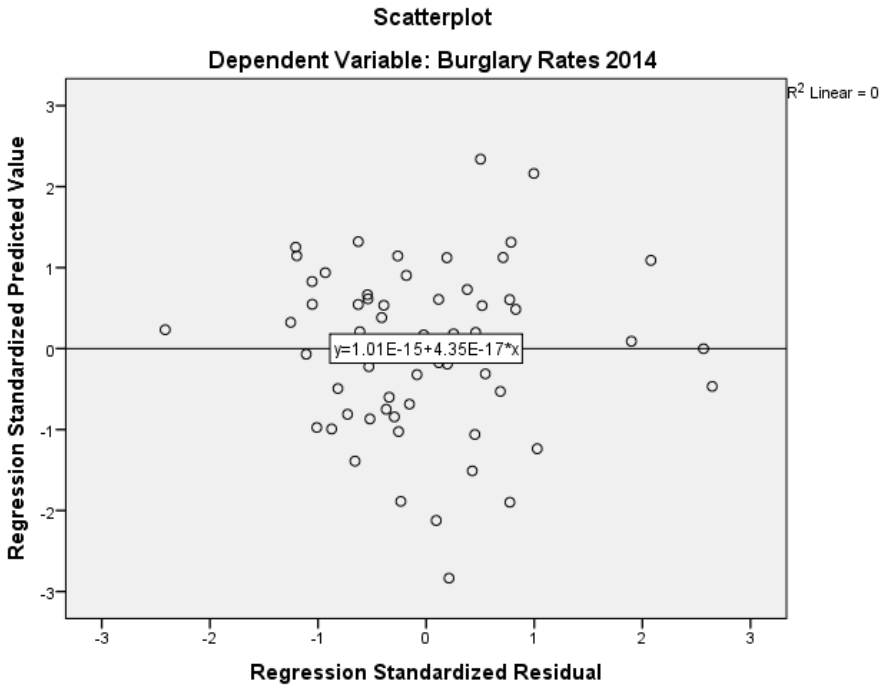

Figure 3: Scatterplot of Residuals of Burglary

A two model HLM was run to test the impacts of the policing strategies and the community and policing characteristics on burglary rates (Table 6). The first model included just the strategies. The model was not a significant predictor of burglary rates, F (6, 56) = .79, p = .585 and the R^2 showed the model accounted for 7.8% of the variance in burglary. None of the strategies were significant predictors. Thus, we fail to reject the null hypothesis for the two research questions.

In the second model the community and police characteristics were added. This model was also not a significant predictor of burglary, F(11, 56) = 1.21, p = .304 and the R^2 accounted for 20.7% of the variance in burglary. The addition of the variables did not significantly increase the model, F (5, 51) = 1.66, p = .160. Median income was the only

significant predictor (B = -.008, *t* (63) = -2.43, *p* =.019), as you increase income you decrease burglary.

Table 6
Regression of Strategies and Community and Policing Characteristics on Burglary Rate

	B	Std. Error	Beta	B	Std. Error	Beta	
Constant	409.58	211.40		415.56	238.49		
Community/problem oriented	-24.17	34.52	-0.10	12.41	37.56	0.05	
Intelligence led	8.09	27.48	0.06	-0.82	29.34	-0.01	
COMPSTAT	25.53	26.11	0.17	19.82	26.18	0.13	
Traditional policing	15.66	20.27	0.11	27.52	21.99	0.19	
Evidence based	51.46	33.80	0.35	45.15	33.39	0.31	
"Hot Spot"	-61.43	39.93	-0.39	-32.24	41.21	-0.20	
Median Income				-0.01	0.00	-0.37	*
Urban-Rural				-4.33	57.35	-0.01	
# Sworn Officers				0.01	0.07	0.04	
Total Population				0.00	0.00	0.05	
Deputy Ratio per 1000				57.41	39.02	0.20	
F			.786			1.12	
df			6, 56			11, 51	
R^2			.078			.207	
R^2 Change						1.66	

Notes N = 63
*=p<.05, **p<.01, ***p<.001

Summary

The purpose of this chapter was to analyze the data collected through the survey and secondary data. The sample size was adequate to conduct the study. Results showed no association between relationship between crime reduction strategies and reported residential burglary rates. As a result, none of the null hypothesis could be rejected. The only noteworthy association was between county characteristics of median household

income and burglary rates, meaning as median household income increased, burglary rates decreased.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

This chapter situates the results of the study within the larger context of the literature and discusses the conclusions and recommendations for future research of crime reduction strategies of Florida sheriff's offices. The purpose of this study was to examine how policing strategies are associated with levels of residential burglary rates for 2014, controlling for median household income, urban/rural demographics, residential burglary arrest rates, and police-population ratio. This research was intended to expand the body of knowledge for future practitioners studying law enforcement agencies with similar demographics.

Interpretation of the Results

The project failed to reject the two null hypothesis, which lead to the conclusion that one overall crime reduction strategy or combination of strategies cannot be clearly associated with lower residential burglary rates. None of the key predictors were significant. This is in contrast with what Crank et al. (2010) and Vargas (2015), who found that combining certain policing strategies can reduce burglaries.

Identifiers of urban and rural designation showed no significant differences associated with residential burglary rates. Mawby (2015) determined that rural areas may have an increased risk of residential burglaries compared to urban areas because of the remoteness to other homes and reduced guardianship. This study did not show any evidence to support this.

In addition, an increase in capable guardians, such as sworn personnel, was not associated with lower residential burglary rates, even though Doerner and Doerner (2012) concluded that there was a correlation between property crime rates in select Florida cities and the number of sworn personnel assigned to each department. Reynald's (2011) use of secondary data in his study of opportunities for capable guardianship found a correlation between increased guardianship strategies and property crimes. Again, my study found no association between crime reduction strategies and residential burglaries. Hollis-Peel and Welsh (2014) and Manasevich et. al., (2013) discovery that property crimes decreased where there was an increase in guardianship also was not validated in this study. This leads to the conclusion that an increase in the number of capable guardians does not necessarily lead to a reduction in residential burglaries.

Only median income per county was a significant predictor; as income increased, residential burglaries decreased. This coincides with Telep and Weisburd (2012) in their study of crime reduction strategies and residential burglaries in that further research was needed to determine if socioeconomic status was a factor in reducing crimes such as residential burglary. Nwaokoro et al., (2013) and Adidjaja (2012), discovered that crime will increase significantly as median household income decreases. This study concluded that Florida counties with higher than average median household incomes had lower reported residential burglary rates.

Limitations of the Study

As with most research studies, taking a critical look at the limitations of the study helps for future research. The main limitations of my study was the study design and the

measurement tool. In all designs, the biggest challenge in social science research is measurement (Nachmias & Nachmias, 2008). One reason why the study was not able to show that policing strategies may have an impact on crime reduction is that it was cross-sectional and not longitudinal. Implementation of a particular strategy takes time to see its effect on crime rates. My data was cross sectional, therefore it did not allow me to estimate the effect of the use of a strategy over time. Santos (2015) conducted a 5-year case study in Florida of a municipal police department which showed that combination of strategies over a long period significantly reduced residential burglaries. Year to year comparisons were not current as these statistics must be verified first by the agencies reporting them and validated by the agency auditing them.

A second limitation was the nature of my study predictors. It was difficult to assign Florida sheriff's offices to different policy strategies, which would allow me to compare the policy strategies and see which one was more effective. Each Florida sheriff's office used various policy strategies at the same time, therefore making it very difficult to disentangle the effect of one from the other. In other words, the definition of *treatment* in my design was not very clear.

A third limitation of this study was the sample size of 67 Florida sheriff's offices and excluded all other types of local, state, and federal policing agencies and was limited to only one state in the South. This limited the findings because it may not be generalized throughout other states in the United States.

Recommendations

Florida's demographics are similar to other states in terms of urban to rural ratio, making them a microcosm of the United States (Johnson, 2010, Shelley, 2010). This study attempted to identify which crime reduction strategies were associated with lower residential burglaries. Additionally, this study examined whether sworn personnel per thousand population, urban/rural demographics, median household income, and residential burglary arrest rates may also be associated with residential burglary rates. The response rate was at 95% and included 63 participants, which covered a majority of the geographic area of Florida. Duplicating this study with a larger sample size would increase reliability and validity of any sampling concerns (Rudestam & Newton, 2007). Also, a longitudinal study would help determine over a longer period of time if there is an association with crime reduction strategies and residential burglary rates. Santos (2015) conducted a case study in Florida of one police department using 5 years of data which showed a combination of crime reduction strategies initiated in crime hot spots over a long period can significantly reduce residential burglary. In future research when it is found that there are significant crime reduction strategies, researchers should consider looking at which combination of strategies are most effective. Including local (municipal) law enforcement agencies within each county in Florida would give a more comprehensive view of each county's additional crime reduction strategy responses. Also, a comparison could be studied between municipal police departments and sheriff's offices as they relate to crime reduction strategies and residential burglary rates.

Because median household income was significantly associated with residential burglary rates, data collected from this research can be used to develop another study in the future about community characteristics and frequently used policing strategies. In addition, including additional Part I crimes may show more of an association between the crime reduction strategies. One significance of my study is that a better measurement strategy could be developed to evaluate the strategies of reducing residential burglaries. A program evaluation design could also be conducted on the strategies (predictors) to develop measures and determine how to measure success.

Implications

This study contributed data on which factors should be given consideration in selecting a crime reduction policy for sheriff's offices as they relate to reducing the number of reported residential burglaries. This cross-sectional study was important because it recognized that although no overall strategy or combination of strategies were effective in reducing residential burglaries, median household income per county was associated with residential burglary rates. In addition, this study showed that there may be a better measurement on how to evaluate crime reduction strategies. From conducting this study, it may be more useful in future studies to define combination of strategies that would be more mutually exclusive, meaning create combination of strategies from which sheriff's offices can choose from in the survey. This would ensure more clearly defined treatments. Future studies could use other variables to determine if there is an association between crime reduction strategies and other Part I crimes. These social change

indicators may verify in future studies that the public's fear of crime can diminish if there is a correlation found between the same or differing variables.

Conclusions

The purpose of this study was to examine how policing strategies were associated with levels of residential burglary rates, controlling for median household income, urban/rural demographics, residential burglary arrest rates, and police-population ratio. Even though there were no one policing strategy or combination of strategies that were associated with lower residential burglary rates, one significant finding stood out. As median household income increased, reported residential burglaries decreased. Further research should be conducted for the same county characteristics and strategies in a year to year comparison. This allows future researchers to study the increase or decrease county characteristics like the number of sworn personnel, median household income, and urban/rural designations to see if they are associated with lower residential burglaries.

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Appendix A: Copy of Questionnaire for Florida Sheriff's Offices

1. Identify the agency in which you work for. _____

2. On average, for the year 2014, how much time did your organization use community/problem oriented policing strategies to target residential burglaries? Please select a value (number) that the strategy was used by your organization. *Community/Problem oriented policing* invo*lves citizen participation in the solving of criminal as well as quality of life issues. This strategy attempts to increase participation between police and citizens as well as use SARA (Scanning, Analysis, Response, and Assessment) strategies to solve problems.*

1	2	3	4	5
Never	Rarely	Sometimes	Very often	Always

3. On average, for the year 2014, how much time did your organization use intelligence led policing strategies to target residential burglaries? Please select a value (number) that the strategy was used for your organization. *Intelligence led policing is a management tool for law enforcement using data collection and intelligence analysis to set specific priorities for assessment and management of risk.*

1	2	3	4	5
Never	Rarely	Sometimes	Very often	Always

4. On average, for the year 2014, how much time did your organization use COMPSTAT policing strategies to target residential burglaries? Please select a value (number) that the strategy was used for your organization. *Compstat is a law enforcement management strategy that focuses on reducing crimes such as residential burglary by holding middle managers who work out of precincts/districts accountable through specific policies and procedures supported by timely information and improved technology.*

1	2	3	4	5
Never	Rarely	Sometimes	Very often	Always

5. On average, for the year 2014, how much time did your organization use traditional policing strategies to target residential burglaries? Please select a value (number) that the strategy was used by your organization. *Traditional policing is a crime fighting strategy derived from a concept of routine patrolling and reacting to crime after it occurs.*

1	2	3	4	5
Never	Rarely	Sometimes	Very often	Always

6. On average, for the year 2014, how much time did your organization use evidence based policing strategies to target residential burglaries? Please select a value (number) that the strategy was used by your organization. *Evidence based policing is a crime fighting strategy that uses statistical analysis and scientific research evidence to direct program evolvement and effectiveness.*

1	2	3	4	5
Never	Rarely	Sometimes	Very often	Always

7. On average, for the year 2014, how much time did your organization use "hot spot" based policing to target residential burglaries? Please select a value (number) that the strategy was used by your organization and list the name of the strategy. *Hot spot based policing is a crime fighting strategy derived from the fact that a substantial amount of crime occurs in a small number of locations. To reduce the overall amount of crime, police should focus interventions and resources on these crime "hot spots".*

1	2	3	4	5
Never	Rarely	Sometimes	Very often	Always

8. On average, for the year 2014, how much time did your organization use another strategy to target residential burglaries not listed in this survey? Please select a value (number) that the strategy was used by your organization and list the name of the strategy.

1	2	3	4	5
Never	Rarely	Sometimes	Very often	Always

Yes (list strategy)	No

9. Is there any final comments that you would like to make regarding the crime reduction strategies your organization uses that's is more effective in reducing residential burglaries?
Thank you for completing this survey. You are finished.

Appendix B: Copy of Introduction Letter

This project explores potential relationships that may exist between specific Florida Sheriff's Offices crime reduction strategies and rate of reported residential burglaries. As a doctoral student, my goal of this instrument is to gather information about the types of residential burglary crime fighting strategies used by sheriff's offices across Florida during a specific year. One of the parameters in completing this survey is that you are a senior ranked officer, who is responsible for creating deployment strategies. The survey takes approximately 15 minutes to complete. Your participation in this study is voluntary and appreciated and your responses will be analyzed to assist in determining the crime reduction strategy or strategies associated with residential burglary rates. The results will not be reported by individual counties but as an aggregate of all counties. These results will be kept as confidential. Please complete the survey within the next two weeks. Thank you in advance for completing this questionnaire. If you have any questions, please contact me at XXX-XXX-XXXX. Please click the link to the attached consent form.

Sincerely,

Jack Armstrong

Appendix C: Copy of Preintroduction Letter

Dear Public Information Officer,

In two weeks, your organization will be invited to take part in a research study about potential relationships that may exist between specific Florida Sheriff's Offices crime reduction strategies and rate of reported residential burglaries. The purpose of this study is to examine how policing strategies are associated with levels of residential burglary rates for 2014, controlling for median household income, urban/rural demographics, residential burglary arrest rates, and police-population ratio. The researcher is inviting a senior ranked officer who is responsible for creating deployment strategies to participate in the study. I obtained your agency's contact information via the Florida Sheriff's Association directory.

This study is being conducted by a researcher named Jack Armstrong, who is a doctoral student at Walden University. You might already know this researcher as a former Major from the Pasco Sheriff's Office (retired), but this study is separate from that role. These results will be kept as confidential. If you have any questions, please contact me at XXX-XXX-XXXX.

Sincerely,

Jack Armstrong

Appendix D: Regression Results with VIFs and T Test

Table A1
Regression Results with VIFs and T Test

	B	Std. Error	Beta	t	sig	Lower Bound	Upper Bound	Tolerance	VIF
Model 1									
(Constant)	409.58	211.40		1.94	0.06	-13.90	833.07		
Community/problem oriented	-24.17	34.52	-0.10	-0.70	0.49	-93.33	44.99	0.81	1.23
Intelligence led	8.09	27.48	0.06	0.29	0.77	-46.96	63.14	0.47	2.14
COMPSTAT	25.53	26.11	0.17	0.98	0.33	-26.76	77.83	0.55	1.83
Traditional policing	15.66	20.27	0.11	0.77	0.44	-24.96	56.28	0.85	1.17
Evidence based	51.46	33.80	0.35	1.52	0.13	-16.26	119.18	0.31	3.23
Model 2									
"Hot Spot"	-61.43	39.93	-0.39	-1.54	0.13	-141.42	18.57	0.26	3.84
(Constant)	415.56	238.49		1.74	0.09	-63.23	894.36		
Community/problem oriented	12.41	37.56	0.05	0.33	0.74	-62.99	87.80	0.65	1.54
Intelligence led	-0.82	29.34	-0.01	-0.03	0.98	-59.71	58.08	0.39	2.59
COMPSTAT	19.82	26.18	0.13	0.76	0.45	-32.74	72.38	0.51	1.95
Traditional policing	27.52	21.99	0.19	1.25	0.22	-16.62	71.66	0.68	1.46
Evidence based	45.15	33.39	0.31	1.35	0.18	-21.88	112.17	0.30	3.33
"Hot Spot"	-32.24	41.21	-0.20	-0.78	0.44	-114.97	50.49	0.23	4.33
Median Income	-0.01	0.00	-0.37	-2.43	0.02	-0.01	0.00	0.67	1.49
Urban-Rural	-4.33	57.35	-0.01	-0.08	0.94	-119.47	110.81	0.48	2.08
# Sworn Officers	0.01	0.07	0.04	0.21	0.84	-0.12	0.15	0.41	2.43

Total Population	0.00	0.00	0.05	0.23	0.82	0.00	0.00	0.30	3.37
Deputy Ratio per 1000	57.41	39.02	0.20	1.47	0.15	-20.93	135.75	0.84	1.19

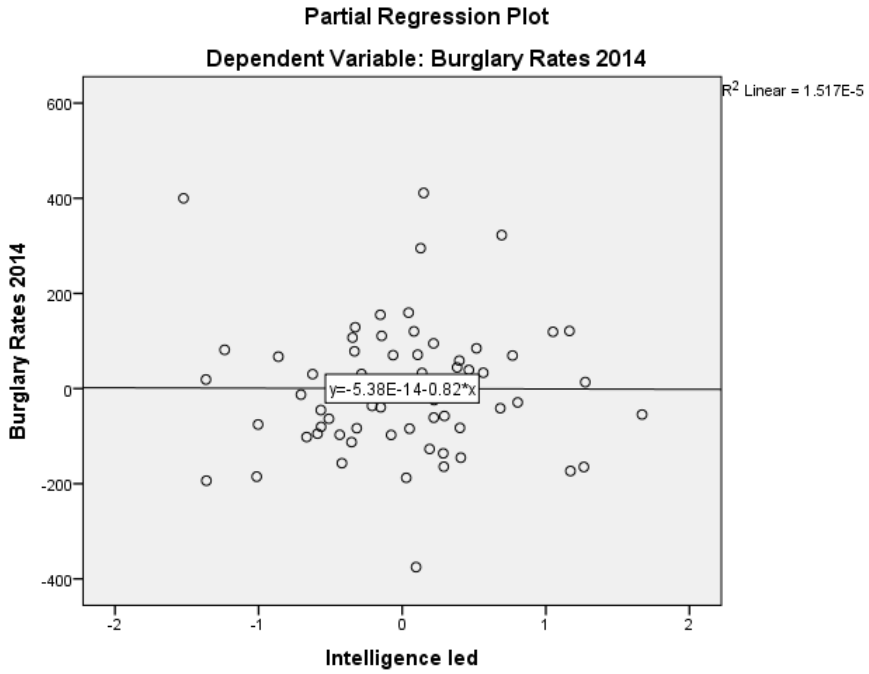

Figure E1 Scatterplot of Intelligence Led Policing and Burglary Rates

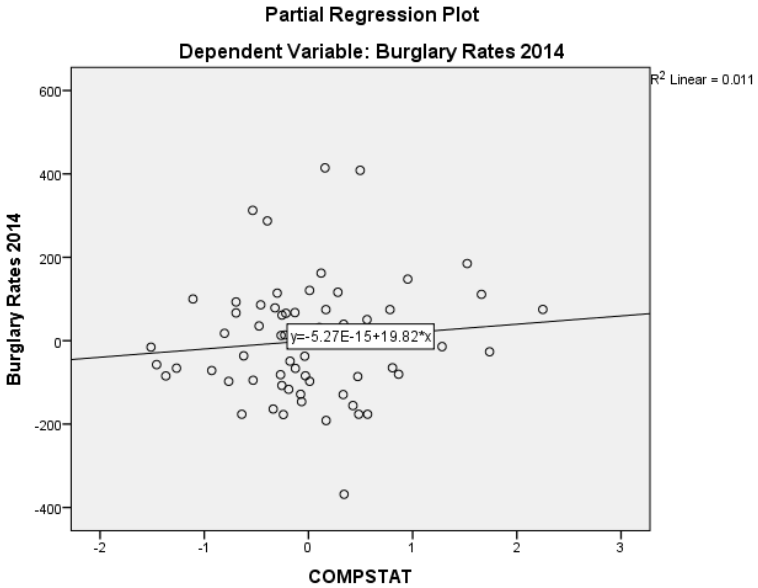

Figure E2: Scatterplot of COMPSTAT and Burglary Rates

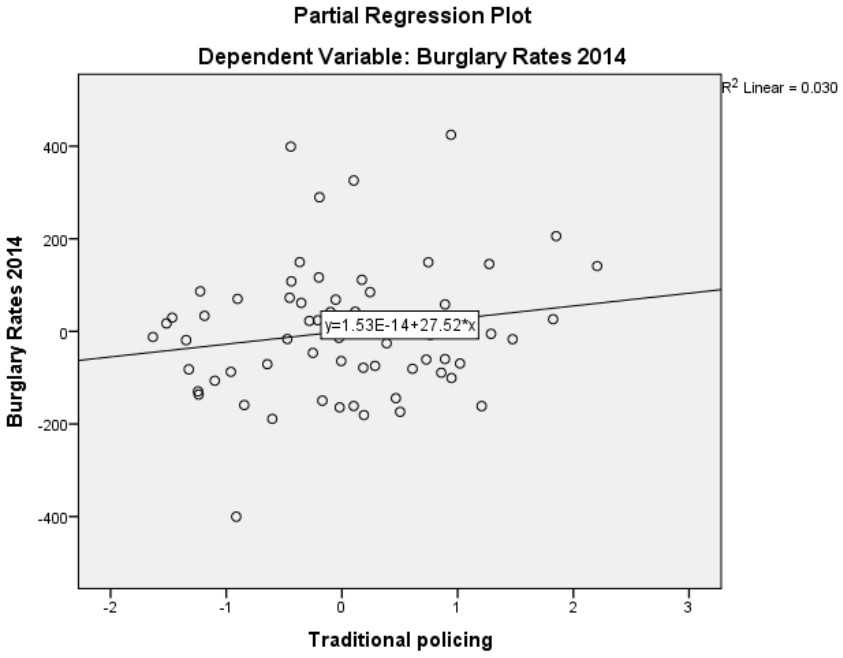

Figure E3: Scatterplot of Traditional Policing and Burglary Rates

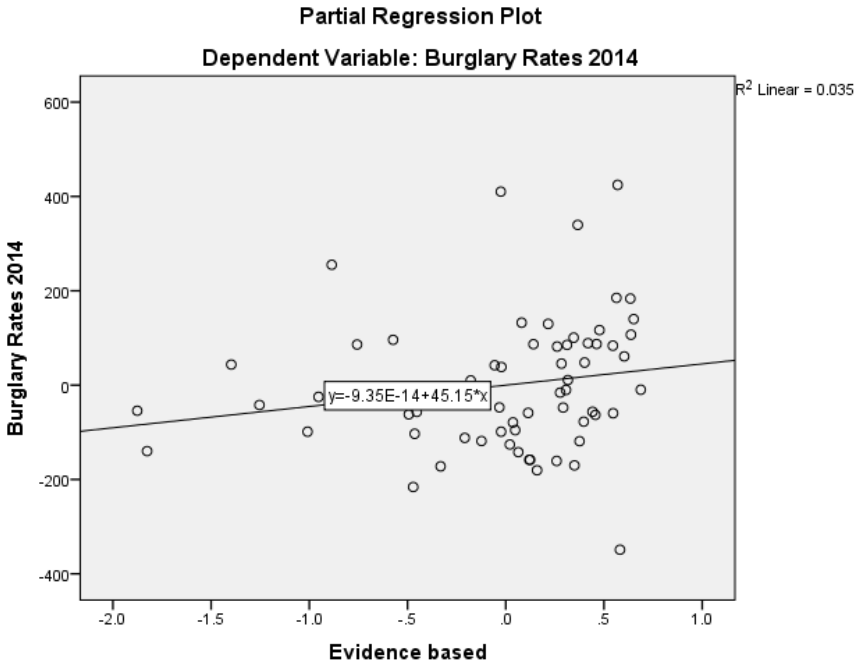

Figure E4: Scatterplot of Evidence Based Policing and Burglary Rates

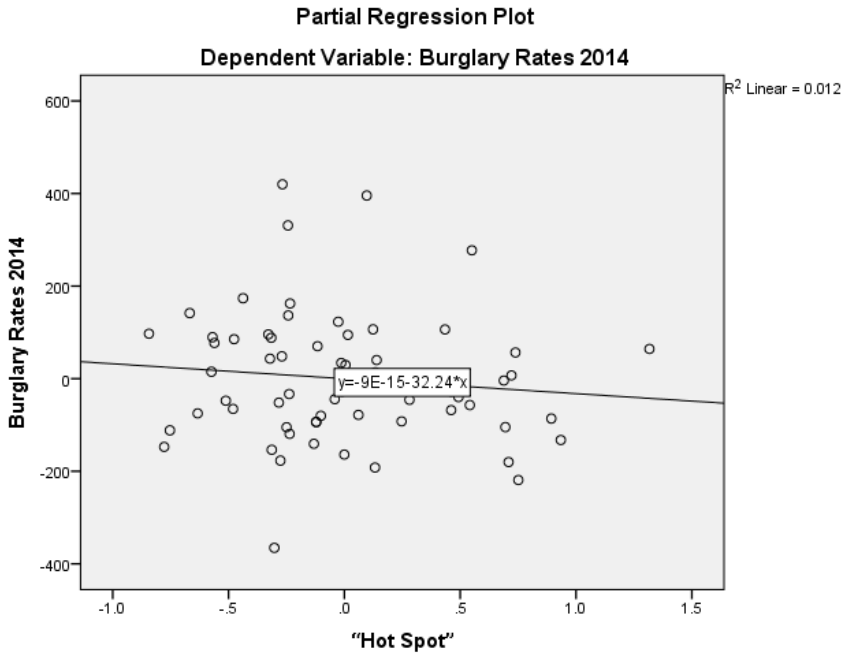

Figure E5: Scatterplot of Hot Spot and Burglary Rates

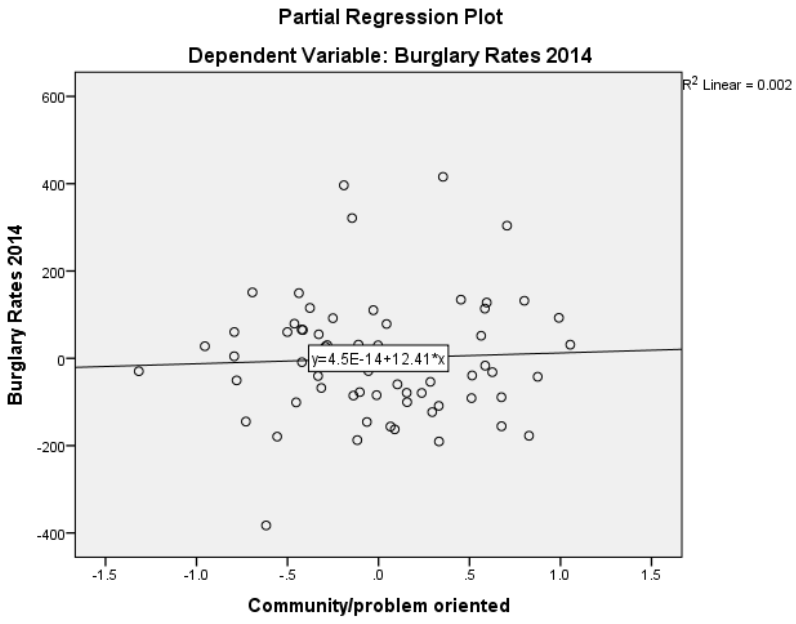

Figure E6: Scatterplot of Community Oriented Policing and Burglary Rates