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**PREDICTING LAW ENFORCEMENT OFFICER TURNOVER AND USE
OF FORCE FROM VARIABLES MEASURED BY THE 2013 LAW
ENFORCEMENT MANAGEMENT AND ADMINISTRATIVE
STATISTICS (LEMAS) SURVEY**

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PREDICTING LAW ENFORCEMENT OFFICER TURNOVER AND USE OF
FORCE FROM VARIABLES MEASURED BY THE 2013 LAW ENFORCEMENT
MANAGEMENT AND ADMINISTRATIVE STATISTICS (LEMAS) SURVEY

A Thesis
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Science
In
Psychology: Industrial/Organizational

by
Ryan Lee Radmall
December 2017

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ABSTRACT

Law enforcement requires comprehensive hiring and training practices in order to curb misconduct and turnover. Some of the available data suggests a shift in the dynamics of law enforcement toward a more objective approach that favors education, cognitive ability testing, a community policing orientation, and technological advances, such as body cameras, that hold enforcers of the law and the American public, accountable for misconduct and violations of the law. The utilization of various technological advances requires assessment and dynamic, comprehensive analysis. The present study examined the influence of education and the professionalization of policing hiring requirements, cognitive ability tests and training, community policing initiatives and training, and the utilization of body cameras, on the number of dismissals and voluntary resignations and police use of force incidents recorded, while considering gender composition, and ratio of officers to size of the community served, in a federally-released report. Many of the hypotheses were not confirmed. However, support for the relationship between education and officer dismissal, SARA training and all dependent variables, and gender composition and reduction in the number of use of force incidents reported, were substantiated. Implications, limitations, and directions for future research are explored herein.

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DEDICATION

I would like to dedicate this thesis to several people that have inspired and helped me reach this milestone.

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TABLE OF CONTENTS

ABSTRACT	iii
ACKNOWLEDGEMENTS.....	iv
LIST OF TABLES	vii
LIST OF FIGURES	viii
CHAPTER ONE: INTRODUCTION	1
Officer Turnover	2
Dismissal.....	3
Resignation	4
Use of Force	5
Law Enforcement Selection: Individual-level Variables.....	9
Education Requirements.....	10
Cognitive Ability.....	17
Law Enforcement Officer Training: Department Level Variables	22
Community Policing	22
Body/Gun Cameras.....	24
Present Study	27
CHAPTER TWO: METHOD	
Sample.....	30
Measures	31
Criterion Variables.....	31
Predictor Variables.....	32
CHAPTER THREE: RESULTS.....	36

CHAPTER FOUR: DISCUSSION

Education and Dependent Variables	52
Cognitive Ability and Dependent Variables	55
Community Policing and Dependent Variables	59
Body Cameras and Use of Force.....	61
Implications.....	63
Limitations.....	65
Directions for Future Research	66
Conclusion	68
APPENDIX A: 2013 LAW ENFORCEMENT MANAGEMENT AND ADMINISTRATIVE STATISTICS SURVEY ITEMS	70
REFERENCES	76

LIST OF TABLES

Table 1. Descriptive Statistics for Continuous Variables Used in the Present Study	37
Table 2. Descriptive Statistics for Categorical Variables in the Present Study ...	38
Table 3. Summary of Final Hierarchical Regression Analysis for Variables Predicting Use of Force	50

LIST OF FIGURES

Figure 1. Scatterplot of the Correlation Between the Number of Officers Dismissed/Terminated and a Department-level Education Requirement	40
Figure 2. Scatterplot of the Correlation Between the Number of Officers Dismissed/Terminated and the Percent of Officers Hired with a Bachelor's Degree in the Last Year.....	42
Figure 3. Scatterplot of the Correlation Between the Percentage of the Agency Involved in Scanning, Analysis, Response, and Assessment Problem Solving and the Number of Use of Force Incidents	44
Figure 4. Scatterplot of the Correlation Between the Percentage of the Agency Involved in Scanning, Analysis, Response, and Assessment Problem Solving and Voluntary Resignations.....	46
Figure 5. Scatterplot of the Correlation Between the Percentage of the Agency Involved in Scanning, Analysis, Response, and Assessment Problem Solving and Dismissals/Terminations.....	47
Figure 6. Final Linear Regression Model.....	51

CHAPTER ONE

INTRODUCTION

There is a vested interest for law enforcement agencies to constantly monitor and inform policies regarding police officer turnover and use of force. Orrick (2005) notes that police turnover is on the rise and is costing enormous amounts of resources for recruiting and training, with the average tenure of new officers lasting only 33 months. In regards to actual dollar figures for the cost of police misconduct, Elinson and Frosch (2015) note that “the 10 cities with the largest police departments paid out \$248.7 million last year in settlements and court judgments in police-misconduct cases, up 48% from \$168.3 million in 2010” (p. 1). Many of these costs are incurred as a result of use of excessive force (Elinson & Frosch, 2015). Additionally, Elinson and Frosch report the same 10 cities paid out collectively over \$1.02 billion in the last five years. In 2014, for example, the city of Philadelphia alone settled 10 shooting cases that cost \$536,500 each on average, up from eight shooting cases that cost an average of \$156,937 in 2010.

Ultimately, these funds are paid by local taxpayers and effect municipalities’ ability to operate. These issues are troublesome for recruiters and trainers of law enforcement officers, if not to members of the communities that they serve. Orrick (2005) notes that there is a need to develop strong organizational values and engage officer’s minds through training, community

interaction, and the use of critical thinking strategies in order to curb turnover and reduce the costs of resources for police officers. As a result, in the present study we aim to aid in the understanding of police turnover by identifying predictors of police turnover and use of force that are related to recruiting practices, training procedures, and department-level initiatives.

Officer Turnover

Police officer turnover is of great concern to modern police departments because of the expense (Orrick, 2005). Price (1977) has noted that turnover refers to the permanent termination of employment, and does not include absenteeism, long-term leave, layoffs, transfers, promotions, or demotions where the individual still works for the organization or is expected to return to work for the organization eventually. Turnover can either be voluntary or involuntary. Voluntary turnover includes when an individual chooses to leave the organization (e.g., resignation), while involuntary turnover is typically the agencies decision (Wareham, Smith, & Lambert, 2013).

Matz, Woo, and Kim (2014) defined turnover intentions as the “conscious and deliberate willfulness to leave the organization” (p. 234). These researchers performed a meta-analysis examining the extant literature on predictors of turnover intentions. Findings from their study concluded that the strongest predictors of turnover are work environment and job attitude, while individual

characteristics, such as age, race, gender, and level of education do not predict turnover or turnover intentions (Matz et al., 2014). One theory related to these variables that may have utility in law enforcement is person-environment fit (P-E fit). P-E fit research notes that attitudes, behavior, and individual-level variables must also be considered in the context in which work takes place (Edwards, 1996). Specifically, research has shown that job design, individual power, organizational climate, and employee selection influence outcomes related to turnover (Edwards, 1996). Adding to the research on P-E fit, Edwards found that mental demands of a job increase the rate of turnover. This has various applications to law enforcement in that the tasks of law enforcement are stressful and require a great deal of cognitive energy. Therefore, P-E fit theory will be used as a framework to understand police officer turnover variables.

Unfortunately, measuring variables specifically related to P-E fit, like job satisfaction and attitude is problematic for the present analysis because these variables are not measured in the LEMAS. However, some of the variables related to P-E fit can be assessed for the influence they have on turnover. Therefore, for the purpose of the present study, the variables of number of dismissals and voluntary resignation will be used to evaluate turnover. I will now discuss research related to officer dismissal and voluntary resignation.

Dismissal

Dismissal is a form of involuntary turnover. Orrick (2005) notes that some instances of involuntary turnover is preferable to the police agency in order to

remove the problem of unproductive employees. Often times, police agencies will give a problem officer the option to resign or be dismissed if their performance is called into question. This way, the police agency is able to reduce public disapproval or scrutiny of certain problem officers and avoid civil litigation (Kreimer, 1988). Unfortunately, this occurrence is not distinguishable from voluntary resignation. Although we can say that the number of dismissals are an accurate number of officers dismissed, we cannot say that all of the resignations recorded are voluntary.

To deal with this issue, in the present study both types of employment termination will be used as measures of turnover; dismissals and voluntary resignations.

Resignation

Voluntary resignation is a form of voluntary turnover, although this form of turnover can be considered involuntary when the police agency gives the officer the option to resign or be dismissed. Haarr (2005) notes that some of the theories used to describe why police officers resign are job satisfaction, burnout theory, confluency theory, and cognitive dissonance theory, although research on police resignation is limited. Some of the notable factors contributing to officers resigning for not being satisfied with their job are salary, rank, overtime compensation, insurance, the length of the work week, and retirement incentives (Haarr, 2005).

In addition, burnout theory can be applied to police officer resignation in that veteran officers tend to resign because of occupational and organizational dissatisfaction and stress. Using a burnout theory framework to understand veteran officer resignation, Sparger and Giacomassi (1983) note that “occupational frustrations and dissatisfactions related to traditional authoritarian management styles, organizational policies, departmental politics, lack of appreciation for their efforts, the system of internal discipline, pay and fringe benefits, relations with civic officials, court policies, and community expectations” contribute to burnout and resignation (p. 433). These factors are the most well-known reasons for an officer to resign. Unfortunately, for the present analysis, many of these factors were not readily available. Therefore, the number of resignations experienced by a department will be assessed for a relationship with the criterion measures available.

Use of Force

Police use of force has long been a topic in mainstream media. The incidents of Rodney King, the Rampart Division scandal, and the 1992 Watts riots that followed the acquittal of the white police officers accused of using excessive force against a black man, are an archetypical example of why there is a need to minimize the impact of use of force between police officers and the communities, especially of minorities they serve (Geller & Toch, 1959)

Unfortunately, police use of force has once again become a topic of mainstream media, as several cases of officers using deadly force against minorities, have been cited between 2012 and 2016. Some of these incidents include the death of Eric Garner in New York City in July of 2014 and the shooting of Michael Brown in Baltimore Maryland a month later, which was followed by civil unrest and riots. Consequently, researchers have shown that officer use of excessive force can cause strain between police officers and communities, especially in minority communities (Geller & Toch, 1959; Thompson, & Lee, 2004). The cost placed on municipalities from civil suits when excessive force is used (Elinson & Frosch, 2015) and the relationship between excessive use of force and turnover highlight the need for future research to assess officer use of excessive force and its correlates. Beyond monetary costs, it is important to assess use of force incidents to aid officers in understanding how to more effectively perform the profession with which they are charged.

Over the years, the use of force has taken on different definitions and degrees as technology has advanced and given more options for police officers in using force. Ultimately, Garner et al. (1995) addressed the task of defining use of force and determined that the use of force exists on a continuum that includes behaviors by an individual to purposefully threaten or succeed at physically inflicting harm on another individual. Police use of force has been studied in the literature as far back as the early 1970s. For example, Bittner (1973) first noted in the literature that police work is broad and requires individuals to participate in a

number of tasks and make a number of decisions, including the decision to use force, the tasks of which are cognitively demanding for the officer.

An interesting early study on use of force conducted by Aadland (1981) who examined 104 Los Angeles Police Department officers on self-esteem (Rosenberg Self-Esteem Scale), locus of control, androgyny (Bem Sex Role Inventory), demographics, occupational attitudes, and shooting performance as measured by a shooting simulation. Results from that study of all male officers found that the total number of shots fired, shared a moderate, significant relationship with age ($r = -.21$), job experience ($r = -.23$), and attitudes that advocate prosocial violence ($r = .30$). Aadland (1981) also found that the number of shots fired that were against department policy at the time were moderately, correlated with attitudes that advocate prosocial violence ($r = .21$) and the departments shooting policy ($r = -.25$). This early study of police use of force highlights two key aspects about use of force incidents. First, there are characteristics about the officer, such as age and tenure, which influence use of force decisions and the amount of force used. Secondly, use of force decisions are related to prosocial attitudes, which research has previously shown to be influenced by community policing awareness and training.

Adding to the research on variables related to the use of force, Chapman (2012) assessed 511 officers for age, experience, ethnicity, and education in three mainly minority cities. Findings indicated that patrol officer education and use of force ($\beta = -.238$) and level of force were significantly related ($\beta = -.256$),

while age, experience and ethnicity were not significant predictors of use of force variables. Specifically, the more education an individual has, the less often they are to use force and at lower levels. This study highlights the need for more research to be conducted into the relationship between education and use of force to provide support for these findings.

In addition, Felson (1996) found that use of force is significantly related to gender. Specifically, men use force more often than women when there is no weapon involved and women injure more individuals with use of force incidents when there is a weapon involved. Felson notes that this relationship is a function of physical power and attitudes toward interpersonal violence. Men are typically able to exert more force than women when there is not a weapon involved, and women are more often the targets of violence for the same reasons. The findings from this study highlight the need to understand the relationship between gender and the use of force.

More recent research on use of force has added that aspects related to the situation, the suspect, and the community must be considered when examining police use of force (Bolger, 2015). In reviewing the extant literature from 1970 and citing four large literature reviews on the use of force, Bolger (2015) adds that police use of force decisions are related to four variables: encounter, suspect, officer, and community characteristics (p. 467). The officer characteristic that Bolger (2015) found to be most often correlated with use of force decisions is education. Specifically, officer education shares a negative

relationship with use of force decisions; more years of education correlates with less use of force. Based on the four-factor model previously mentioned, Bolger (2015) conducted a meta-analysis on 19 studies performing 44 analyses on every empirical finding on use of force that could be utilized within certain parameters. The findings from the meta-analysis concluded that the decision to use force is based primarily on what occurs in the encounter and the characteristics of the suspect. The only officer characteristic that was found to be related to the decision to use force was gender, with men being more likely to use force than women. Bolger (2015) concluded his meta-analysis with a call for more research to examine organizational characteristics with a larger number of studies or datasets that are nationalized rather than localized in officer decision to use force. Based on the previous findings on police use of force, it is important to understand the relationship between officer education and gender to determine if these variables are predictive of the number of use of force incidents a department reports.

Law Enforcement Selection: Individual-level Variables

Law enforcement officers go through a battery of examinations throughout the process of selection. These methods include education requirements, cognitive ability, physical ability, background variables (e.g., military experience), personality tests, assessment centers, and interviews (Aamodt, 2004). The

following research describes empirical findings related to selection procedures that have been documented to share a relationship with officer use of force and turnover.

Education Requirements

Education level has various implications for officer use of force and turnover among police officers. For many reasons, education would appear positively related to police officer performance. Formal education not only indicates an individual's degree of knowledge about a particular topic and ability to perform various tasks, such as reading, writing, and communicating, but also serves as an indication of an individual's motivations and ability to see a task through. Subsequently, officer performance has been found to relate to use of force and turnover.

Smith, Locke, and Walker (1967) noted as far back as 1967 that college educated police officers would display: greater dignity, improved efficiency, enhanced image, advancement or promotion through the demonstration of leadership skills, social awareness and compassion, and professionalization. A subsequent analysis of a sample of New York City police officers for education level and degree of authoritarianism found that police officers who had some college education were significantly less authoritarian than their non-college educated counterparts (Smith, Locke, & Walker, 1967). This finding is of importance to the current study considering that authoritarianism has been found to be a significant predictor of police brutality, an excessive form of police use of

force (Skolnick & Fyfe, 1993). Drawing off the findings of these two studies, we can infer that education influences certain individual characteristics, namely social awareness, compassion, and authoritarianism, which have been found to relate to the use of force. Over the years, officer education requirements have been extensively examined and even mandated for most law enforcement agencies. In fact, in the 2013 Law Enforcement Management and Administrative Statistics (LEMAS) survey that assessed 2,826 state and local law enforcement agencies, the most comprehensive law enforcement survey to date and the dataset for the present thesis, it was found that 2,314 (81.9%) law enforcement agencies across the United States require a high school diploma or equivalent, 1,199 (42.4%) agencies provided pay incentives for college degrees, and 1,069 (37.8%) law enforcement agencies hired new officers with Bachelor's degrees. The prevalence of education among law enforcement officers is apparent when we assess these numbers. However, empirical findings of the relationship between education level and officer performance are mixed.

Education has also been found to be positively correlated with police officer performance in the academy. Aamodt and Flink (2001) examined the influence of education on police academy cadet performance. A total of 301 predominantly male (89%) and predominantly white (95%) cadets from a police academy serving small to moderate Virginian police agencies were assessed for their level of education and their average score on 20 tests over 16 weeks in the academy. Education was assessed in three different ways; years in school,

education level, and college degree. Results of the study found that all three of these measures of education were moderately significantly positively correlated with standardized academy performance ($r = .34, .32, \text{ and } .31$, respectively) with more education typically leading to stronger correlations with academy performance. Similarly, Campa (1993) examined a sample of 561 predominately white (60%) and predominately male (88%) cadets from the Houston Police Department and found that the number of college hours significantly correlated with academy average scores ($r = .29$). A study conducted by Barbas (1992) found similar results. In assessing education and cognitive ability in 50 predominately male (87%) and predominately white (89%) police cadets, Barabas (1992) found that education, as was measured in total years, was significantly moderately positively associated with cognitive ability ($r = .33$), as was assessed by a civil service exam, and final academy grades over 16 weeks ($r = .35$).

Not surprisingly, an overwhelming majority of the research on education and officer performance has found support for the idea that education is positively correlated with on-the-job performance. Cascio (1977) examined 940 Dade County Public Safety Officers and found that education was moderately positively correlated with overall on-the-job performance ($r = .27$). Specifically, education level (as characterized by the categories High School, some college, and Bachelor's degree) found negative correlations with the number of sick days

per year ($r = -.15$), number of disciplinary actions ($r = -.17$), number of physical use of force allegations ($r = -.13$), and number of use of force reports ($r = -.11$).

Boes et al. (1997) examined a sample of 586 predominately male (91%) majority white (55%) officers and found that the attainment of a Bachelor's degree was significantly negatively correlated with integrity violations ($r = -.05$).

Band and Manuele (1987) examined 60 male predominately white (95%) uniformed patrol officers from a suburban police department and found that education was significantly moderately positively related to self-coping ($r = .25$) as measured by the Self-Coping Inventory. Specifically, officers with more education felt more efficacious in coping with stressful situations while on the job. Another finding of this study was that self-coping was strongly negatively associated with maladaptive coping, meaning that education is not only positively related to self-coping, it is strongly negatively related to maladaptive coping, which would be more problematic for law enforcement employment than not coping with the job.

Baratta (1998) studied 188 police academy graduates in 1979 and followed them for 15 years. The composition of this sample was predominately white (73%) and predominately male (86%). Results of the study indicated that the difference between officers with a high school degree and a Bachelor's degree were significant for the number of severe disciplinary actions ($r = -.16$). Specifically, more education was associated with fewer severe disciplines.

Another noteworthy longitudinal study of the influence of college education on police job performance that was examined over time looked at a group of 84 law enforcement officers originally hired between 1980 and 1982 from a southern metropolitan police agency (Truxillo, Bennet, & Collins, 1998). Truxillo et al found that officer rank was positively correlated with the number of years of education ($r = .35$), and number of letters of reprimand was negatively correlated with the attainment of a four-year degree ($r = -.22$). In drawing a more direct connection between education and turnover, Balci, (2011) found that education contributes to job-satisfaction, and that job-satisfaction predicts job retention, which results in higher retention and lower turnover rates. In this way, education reduces turnover and increases retention.

All of the previously mentioned studies indicate that education has a negative relationship with actions that potentially lead to turnover, including number of sick days, number of disciplinary actions, number of use of force allegations and reports, integrity violations, maladaptive self-coping, and severe disciplinary actions, and a positive relationship with actions that predict less turnover, such as advancement in rank, fewer letters of reprimand, and higher levels of job satisfaction. However, it is important to note that a large body of research has found that education level does not influence on-the-job performance measures for police officers. One study found that education is negatively associated with police officer performance. Agyapong (1988) assessed 112 predominately male (79%) and predominately white (84%) police

officers from a medium sized department in Florida for the number of years of education and a variety of on-the-job performance measures. The average education level was 14.7 years. Results from their study found that education was negatively, moderately, significantly correlated with being able to control conflict ($r = -.37$), problem solving ($r = -.29$), relationship with citizens ($r = -.23$), and work attitude ($r = -.19$). These findings not only seem counterintuitive, they convolute findings that education predicts positive on-the-job performance for police officers.

Another mixed finding is reported by Allen (1996) who assessed the difference between education and type of complaint against an officer. In an examination of 295 internal affairs investigations of citizen complaints against predominately white (84%) and predominately male (92%) officers consisting of discrimination, ethics, use of force, insubordination, property, substance abuse, traffic, verbal, and weapons violations, using a chi square analysis, Allen (1996) found that the difference between a college degree and no college degree was not predictive of the type of complaint that would be filed against a police officer. Again, Allen's study provides support that education is not related to some measures of performance.

Albarano (2015) more recently reviewed the literature on the relationship between officer performance and education concluding that there is no consensus whether officers with college degrees perform better than officers who do not have college degrees. In his examination of a variety of measures of

performance, Albarano concluded that although education does enhance some aspects of on-the-job performance, such as writing, communication, and problem-solving skills, this conclusion is not universal and does not apply to all the officers who have college educations. Furthermore, Albarano notes that education does not necessarily counteract negative attitudes about crime, behavior, and/or certain individual characteristics, nor does education necessarily help an individual compensate for negative personality characteristics or be more empathetic.

However, Albarano (2015) notes that there are compelling arguments for officers to have a college education, including the fact that going to college exposes an individual to a wider range of ethnically diverse individuals and teaches them greater tolerance for others, and better critical thinking, problem-solving, and analytical skills. As a result, Albarano concludes that more defined performance measures are needed to understand the influence of education on performance, and the field of criminal justice needs to undergo professionalization, part of which is the requiring of college degrees, in order to have a uniform set of officer regulations. Unfortunately, because minorities do not have access to education at the same rate as rest of the population, requiring a degree not only limits the pool of qualified applicants, it creates adverse impact for minorities, a significant issue facing the professionalization and recruitment practices of police departments today (Kaplan & Uttley, 2016).

Providing findings on the relationship between education and turnover, Jones, Jones, and Prenzler (2005) examined a representative sample of Queensland police officers who had between five and nine years of experience. They found that tertiary education, or post-high school education, did not predict police officer commitment and turnover intentions. These findings, much like the aforementioned findings of various studies, provide that the relationship between education and turnover have not been definitive.

While previous studies on the relationship between education and turnover and education and use of force, have shown mixed findings, the present study aims to deal with the issues previously described by using the largest, most nationally representative sample recorded to date, and by clearly defining two measures of turnover, dismissals and resignations, to understand the relationship between education and these variables.

Cognitive Ability

Previous research indicates that cognitive ability has been found to correlate with academy and on-the-job performance. In a study of the relationship between a cognitive ability test, specifically, a civil service examination, and academy performance, Abbatiello (1969) found that among 274 male applicants to the Chicago Police Department the cognitive abilities test was moderately significantly positively correlated with academy grades ($r = .35$) and instructor ratings ($r = .25$) during the 14 week police academy period. Similarly, Black (2000) examined a sample ($n = 284$) of predominately male (66%) and

predominately white (82%) cadets at the Royal New Zealand Police Academy and found that cognitive ability significantly moderately correlated with academy performance ($r = .33$) and negatively moderately correlated with impulsiveness ($r = -.17$) over 26 weeks. Alone, cognitive ability accounted for 11 percent of the variance in academy performance.

Boehm et al. (1983) found that in a sample of 219 cadets, cognitive ability, as indicated by scores on a civil service exam of reading and writing, was moderately positively correlated with performance over a 15 week police academy ($r = .38$). Furthermore, in a study of 51 predominately white (81%) academy cadets (and subsequent police officers), Bertram (1975) found that civil service exams predicted academy performance in regards to attitude toward police work ($r = .31$), ability to learn ($r = .46$), willingness to work ($r = .26$), job knowledge ($r = .35$), work quality ($r = .42$), and work quantity ($r = .39$), which subsequently predicted on-the-job performance in regards to ability ($r = .35$), conduct ($r = .48$), judgment ($r = .30$), temperament ($r = .30$), and reliability ($r = .29$).

Brewster and Stoloff (2003) examined a sample of 71 first-year predominately white (85%) and predominately male (95%) police officers in two small police departments in Virginia and found that total IQ scores, as measured by the WAIS, were moderately positively correlated with supervisor performance ratings, as measured on a 3-point scale (3 = exceptional, 2 = average, and 1 = much improvement needed) for the first year on-the-job. The results of the

aforementioned studies indicate that cognitive ability, as measured by scores on a civil service exam and IQ tests, are predictive of academy performance, thus indicating that civil service exams can be useful in predicting variables related to on-the-job performance.

More recently, the Society for Industrial/Organizational Psychology (SIOP) in their professional publication, *The Industrial/Organizational Psychologist*, addressed the issue of incorporating science-based studies of police work into practice (Kaplan & Uttley, 2016). In their findings, Kaplan and Uttley note that there is a need to examine resources, organizational change, recruitment and selection practices, decision making under stress, racial bias in the policing context, effective top-level leadership, leadership training, and boundary spanning leadership for effective community interactions. Kaplan and Uttley note that there is a need to recruit and retain police officers who exhibit “conscientiousness, self-control, interpersonal effectiveness with people of all backgrounds and values, service orientation, quick and effective decision-making under pressure, situational/practical judgment, memory, mental ability, courage, and resiliency” (p. 1), and highlight the fact that agencies that hire police officers and have training programs geared toward problem solving and cognitive ability have more effective officers who perform better at protecting the community and are less likely to have adverse impact against minorities.

Many of the findings from the previously mentioned studies on cognitive ability indicate that cognitive ability can be used to predict variables related to the

use of force. Specifically, cognitive ability has been found to be negatively related to impulsiveness (Abbatiello, 1969). Research on impulsiveness has found that impulsivity is characterized by a lack of self-regulation in regards to premeditation and perseverance (Whiteside & Lynam, 2001) and that impulsivity has a positive relationship with officer reprimands for excessive use of force in regards to handling problem situations (Beutler, Storm, Kirkish, Scogin, & Gaines, 1985). Similarly, findings from Bertram (1975) indicate that cognitive ability is related to judgment, another major factor in the decision to use force (Kaplan & Uttley, 2016). Ultimately the previous studies indicate that a negative relationship should exist between cognitive ability and use of force.

Research has also shown that cognitive ability relates to turnover. Azen, Snibbe, and Montgomery (1973) examined 95 male Los Angeles County Sheriff officers appointed between 1947 and 1950 for a period of 20 years and found that cognitive ability and rank were moderately positively correlated ($r = .26$). Specifically, officers of higher rank tended to display higher levels of cognitive ability as indicated by their initial civil service exam scores. As previously mentioned, Truxillo, Bennet, and Collins (1998) found similar results assessing education and rank. In this way, cognitive ability demonstrates utility in determining which officers will emerge as leaders and out-perform their colleagues as indicated by advancement in rank. An interesting finding about advancement in rank is that as officers advance in rank, particularly to the rank of Sergeant or above, they are given more autonomy regarding decision making

(Van Maanen, 1984). Wilcove, Burch, Conroy, & Bruce (1991) note that the most consistent relationship among civilian and military officers is that the probability of turnover decreases as autonomy increases. Taken together, these findings suggest a relationship between cognitive ability and turnover, such that cognitive ability contributes to advancement in rank which, thereby, contributes to a decrease in turnover. Thus, we would infer that a negative relationship exists between cognitive ability and turnover.

Maltarich, Nyberg, and Reilly (2010) examined the general relationship between cognitive ability and voluntary turnover and identified a curvilinear relationship between these two variables that was moderated by the cognitive demands of the job. Specifically, when the cognitive demands of a job are high or low, as was defined by oral and verbal comprehension, fluency of ideas, and reasoning, individuals are more likely to leave a job than when the cognitive demands of the job are moderate. Given that police work has been found to be cognitively demanding (Bittner, 1973) and that findings support a curvilinear relationship between turnover and cognitive ability (Maltarich, Nyberg, & Reilly, 2010), it is important to examine the relationship between cognitive ability and turnover among police officers. The findings from the aforementioned studies highlight the need to consider cognitive ability training in regards to turnover and use of force.

One way that police departments assess and train cognitive ability on-the-job, specifically problem solving and critical thinking, is through a strategy that

involves “Scanning: Identifying and prioritizing problems; Analysis: Researching what is known about the problem; Response: Developing solutions to bring about lasting reductions in the number and extent of problems; and Assessment: Evaluating the success of the responses” otherwise known as SARA (LEMAS, 2013, p. B4). SARA policing and its relationship to performance outcomes has not been studied in the literature. However, based on the goals of this policing philosophy, SARA can be used as a measure of a department’s encouragement and training of cognitive ability and strategies. For the present analysis, SARA problem solving will be used as a proxy for a department’s encouragement and training of cognitive ability.

Law Enforcement Officer Training: Department Level Variables

Community Policing

Community policing first became a topic of discussion in the mid-1980s (Cordner, 1995). The LEMAS (2013) describes community policing as, “a philosophy that promotes organizational strategies, which support the systematic use of partnerships and problem-solving techniques, to proactively address the immediate conditions that give rise to public safety issues, such as crime, social disorder, and fear of crime” (p. B1). Cordner (1995) notes that community policing is a comprehensive organizational strategy that guides most modern police departments, and that this philosophy has been the best documented

strategy for improving police-community relations. Some of the strategies employed by agencies that utilize community policing range from simple foot or mountain bike patrols to police acting as advocates for underprivileged members of the community (Cordner, 1995). Although community policing has been employed by many agencies as of late, there is still little empirical evidence for the utility of community policing in predicting variables such as use of force and turnover.

In the LEMAS (2013) codebook, a mission statement is defined as, “The agency’s written statement of purpose that should guide the actions of the organization, spell out its overall goal, provide its general enforcement principles, and guide decision-making” (p. B5). In a study that assessed mission statements of police agencies in regards to terrorism post-911, Delone (2007) notes that mission statements of police organizations are dynamic in that they are shaped by environmental pressures, have the ability to shape public perceptions about law enforcement, and shape the attitudes and behavior of police officers. However, the influence the mission statement has on the behavior of members of the organization is dependent on the training and acceptance of these ideals (Delone, 2007). In his analysis of 50 of the largest cities in the United States, Delone (2007) found that all but seven of the largest cities had a clause about community policing in the year 2006. Delone (2007) notes that distinct competence in certain areas of policing entails that an organization knows how to perform a variety of tasks well. By placing a clause about an aspect of policing in

the mission statement, members of the organization change in the process and content of behaviors (Delone, 2007). This allows police departments to adapt to the surrounding environment. Based on the relationship between mission statements and police behavior, we would infer that if an organization has a clause about community policing in their mission statement and train on community policing, these ideals would be reflected in their behavior.

Kaplan and Uttley (2016) note that officer effectiveness, especially in regards to community oriented policing, is influenced by a department's integrity, community relations, discretionary judgment and problem solving, teamwork, and safety, where integrity includes enforcing the law fairly, community relations includes effectively dealing interpersonally with others, and discretionary judgment and problem solving includes determining the appropriate response and using authority and force appropriately. Based on these findings, the goals of community policing are to effectively utilize problem solving, accountability, and appropriate use of force. For these reasons, community policing, as is outlined and utilized in an organization's mission statement and training, will be used in the present analysis in order to determine the relationship with community policing initiatives and use of force, as well as turnover.

Body/Gun Cameras

Based on a press release issued by the Bureau of Justice on July 7, 2015, in 2013 an estimated 32 percent of local police departments were using body-worn cameras, and 6 percent of local police departments used weapon-

attached cameras in the same year (Bureau of Justice Statistics, 2015). Although the effect of this technology on use of force has not been examined in the literature, there is evidence that body cameras are a favorable technological advent for use by law enforcement agencies.

In a comprehensive review of the literature on the use of body cameras, some of the claims for the benefits of body-worn cameras are increased transparency in encounters with law enforcement and victim views of police legitimacy, deterrence from abusive behavior by officers and citizen resistance of law enforcement initiatives, evidentiary benefits for arrests and prosecution of the accused, and opportunities for police training, although there is little evidence to support these claims in the literature beyond body-cameras reducing untruthful complaints against police and usefulness as a training tool for law enforcement (White, 2014). In following findings by Kaplan and Uttley (2016) body cameras can enhance police integrity, community relations, and discretionary judgment by providing an unbiased account of any interaction with a police officer and members of the community, thereby enhancing police effectiveness.

Some of the issues with the use of body-cameras include the protection of citizen and officer privacy, officer health and safety concerns, and the significant investment of agency resources in purchasing these electronics and in training developments (White, 2014). Ultimately, White (2014) recommends that police use of body-cameras should be utilized cautiously considering the

aforementioned costs and benefits, and there needs to be more research that evaluates the impact of the use of body-cameras for law enforcement officers, which may prove the utility of body-cameras for law enforcement officer training. Because research has not previously examined the relationship between body or gun cameras and this variables relationship with turnover and use of force, this variable will be used in the present study.

One theory potentially related to the influence of use of force and body cameras is Self-Awareness Theory. Self-Awareness Theory posits that when an individual focuses attention on the self, they compare their actions against standards by which they are judged, a critical component of self-regulating behavior across a variety of situations (Silvia & Phillips, 2013). The findings from Silvia and Phillips support the idea that both implicit and explicit checks are at play when individuals judge their behavior against standards. Based on the nature of body cameras being able to objectively record the total circumstances of an event, officers would therefore be forced to self-reflect on their behavior from an external mechanism. Another interesting finding from Silvia and Phillips is that response time influences error rates in the regulation of behavior. Specifically, when individuals had less time to respond and react to external stimuli, more errors in judgment occurred. Based on Self-Awareness Theory, we would expect that, in the absence of internal behavior regulation mechanisms, external behavior checks, such as the ability of law enforcement agencies to playback officer behavior from a body camera, will result in a reduced number of

use of force incidents. In addition, the amount of time the officer has to respond to a situation, the more their behaviors will reflect the standards by which they abide.

Present Study

In the present study we assessed correlates of turnover and use of force, as measured by the most up-to-date and comprehensive law enforcement survey available in the United States, the 2013 LEMAS. Several hypotheses were drawn from the previously examined literature. First, research has shown that education is related to training and various measures of on-the-job performance (Aamodt & Flink, 2001; Band & Manuele, 1987; Baratta, 1998; Barbas, 1992; Boes, et al., 1997; Campa, 1993; Cascio, 1977; Smith, Locke, & Walker, 1967; Truxillo, Bennet, & Collins, 1998), that with larger samples and better defined measures of performance, the influence of education on performance may yield more conclusive results about the relationship between education and performance (Albarano, 2015), and that education is positively related to job satisfaction and performance, while being negatively related to turnover (Balci, 2011). Similarly, education level has been found to be negatively related to the use of force (Skolnick & Fyfe, 1993; Smith, Locke, & Walker, 1967). Therefore, we the researchers hypothesized that:

Ho1a: Level of education will be negatively related to use of force.

Ho1b: Level of education will be negatively related to turnover.

Secondly, cognitive ability has been found to be related to training, on-the-job performance (Abbatiello, 1969; Azen, Snibbe, & Montgomery, 1973; Bertram, 1975; Boehm et al., 1983; Brewster and Stoloff, 2003; Kaplan & Uttley, 2016; Truxillo, Bennet, & Collins, 1998) and use of force (Kaplan & Uttley, 2016). Additionally, based on the nature of SARA strategies, this initiative can be used as a proxy for cognitive ability training. Therefore, we the researchers hypothesized that:

Ho2a: Organizations that utilize SARA strategies, as an indicator of performance, will have significantly fewer use of force incidents.

Ho2b: Organizations that utilize SARA strategies, as an indicator of performance, will have significantly lower turnover.

Third, community policing is a philosophy that has been found to enhance community relations between a department and the community that is served by the agency through integrity, effectively dealing with others, and properly applying discretionary judgment and problem solving that results in using authority and force appropriately. Therefore, the present study hypothesizes that:

Ho3: Police agencies that have community policing written in their mission statement and utilize community policing training will have significantly fewer number of use of force incidents.

Additionally, body cams have been theorized to hold police officers accountable for use of force actions, although the influence of body cameras on the use of force have not been directly assessed (White, 2014). Therefore, we the researchers hypothesized that:

Ho4: Departments that require body cameras for police officers will have significantly fewer number of use of force incidents.

Furthermore, we assume that the larger departments that serve larger populations will document more incidents of use of force because of the sheer numbers and probability of use of force occurring. Similarly, research has shown that men are more likely to use force than women (Bolger, 2015; Felson, 1996). Therefore, we the researchers hypothesized that:

Ho5: Education requirements, cognitive ability evaluations, community policing initiatives, and body camera requirements will explain variance in use of force above and beyond the ratio of police officers to the size of the population served, and the gender composition of the department.

CHAPTER TWO

METHOD

Sample

The United States Department of Justice (DOJ) Law Enforcement Management and Administrative Statistics (LEMAS, 2013) survey of law enforcement agencies in the United States was used in order to test the hypotheses in the present study. According to the DOJ:

The Law Enforcement Management and Administrative Statistics (LEMAS) survey collects data from a nationally representative sample of state and local law enforcement agencies in the United States... The sample design called for the survey questionnaire to be sent to 3,336 general purpose state and local law enforcement agencies, including 2,353 local police departments, 933 sheriffs' offices, and the 50 primary state law enforcement agencies. The design called for all agencies employing 100 or more sworn personnel to be included with certainty (self-representing) and for smaller agencies to be sampled from strata based on number of officers employed. A total of 26 local police departments were determined to be out-of-scope for the survey because they were closed, outsourced, or operating on a part-time basis. A total of 38 sheriffs' offices were excluded from the survey because they had no primary law

enforcement jurisdiction. The final mailout total of 3,272 agencies included 2,327 local police departments, 895 sheriffs' offices, and the 50 state agencies (LEMAS, 2013, pp. 5).

In this study, the full samples of LEMAS agencies in the United States are utilized (n = 2,826).

Measures

Criterion Variables

Turnover. In order to examine the rates of turnover, two variables were used in the present study: voluntary resignations and dismissals. These variables were measured in terms of number of dismissals or resignations for the agency for January 1, 2012 through December 31, 2012. Specifically, the LEMAS asked, "During the 12-month period ending December 31, 2012, how many full-time sworn personnel separated from your agency?" As was previously mentioned, responses to the number of officers that were dismissed or voluntarily resigned are assessed in the current analysis. Each of these turnover indicators were divided by the number of full-time sworn personnel with general arrest powers also reported by the agency and multiplied by 100 to create percentages of turnover.

Use of Force. In order to examine the rates of use of force, the number of use of force incidents that occurred between January 1, 2012 and December 31, 2012 were assessed. Specifically, the LEMAS asked, "During the 12-month

period ending December 31, 2012, how many total use of force incidents did your agency record?" The use of force indicator was divided by the number of full-time sworn personnel with general arrest powers also reported by the agency and multiplied by 100 to create percentages of use of force incidents per officer that occur within a given department.

Predictor Variables

Education Requirements. In order to examine the relationship between education and the criterion measures, the department education requirements were assessed and noted. Specifically, questions that assessed education requirements and the percentage of paid sworn personnel with a Bachelor's degree were indicated with the following questions: "As of January 1, 2013, what was your agency's minimum education requirement for sworn new hires? Check one. 1 No minimum requirement, 2 High school diploma or equivalent (e.g., GED), 3 Some college but no degree, 4 Associate's Degree or equivalent, 5 Bachelor's Degree or equivalent and, 6 Other requirement, please specify." Answers to this question for the present analysis were coded the same way that they are coded in the LEMAS with "6 Other" being omitted from the analysis because we do not know the nature of the "other" requirement. In this way, understanding the influence of any college education on the criterion measures was assessed. Additionally, the LEMAS question "During the 12-month period ending December 31, 2012, how many employees hired for full-time sworn positions had a bachelor's degree or higher? If none, enter '0.'" was used to

assess if a difference exists between the percentage of officers who have a Bachelor's degree and those who do not among agencies. The number of individuals in the department indicator was divided by the number of full-time sworn personnel with general arrest powers also reported by the agency and multiplied by 100 to create percentages of individuals in the department that have a Bachelor's degree of those who were hired in the last year.

Cognitive Ability Evaluations. In order to examine the relationship between cognitive ability and the criterion measures, the utilization of SARA problem solving techniques was assessed. Specifically, the items "During the 12-month period ending December 31, 2012, what proportion of full-time sworn personnel received at least 8 hours of training on community policing issues (e.g., problem solving, SARA, and community partnerships)?" and "During the 12-month period ending December 31, 2012, did your agency actively encourage patrol officers to engage in SARA-type problem-solving projects?" with answers coded, 1 Yes and 2 No, was assessed.

Community Policing Initiatives. In order to examine the relationship between community policing initiatives and the criterion measures, the utilization of community policing in the mission statement and as indicated by at least 8 hours of training was utilized. Specifically, the item "As of January 1, 2013, what best describes your agency's written mission statement?" was assessed. Responses to this item are coded: 1 No written mission statement, 2 Written statement, no community policing component, 3 Written statement, yes

community policing component. Responses to this item were coded 0 for “No written mission statement” and “Written statement, no community policing component”, and 1 for “Written statement, yes community policing component.” Additionally, the item “During the 12-month period ending December 31, 2012, what proportion of full-time sworn personnel received at least 8 hours of training on community policing issues (e.g., problem solving, SARA, and community partnerships)? Check one for both 'a' and 'b.' 1 All, 2 Half or more, 3 Less than half, 4 None.” Responses to this item were coded: 0 for “less than half” and “none,” and 1 for “all” or “half or more.” In this way, departments that utilize training for problem solving a majority of the time were assessed.

Body Cameras. In order to examine the relationship between the utilization of body cameras and the number of use of force incidents, the required use of body cameras were utilized. Specifically, the item, “As of January 1, 2013, did your agency use any of the following technologies to collect information? f. Video cameras on patrol officers” was assessed. Responses to this item are coded: 1 Yes and 2 No. In this way, the relationship between the use of body cameras and the number of use of force incidents was assessed.

Ratio of Police Officers to the Size of the Population Served. In order to examine the relationship between the ratio of officers to the size of the community served and the criterion measures, the item “As of January 1, 2013, how many PAID SWORN personnel worked in your agency?” was divided by the Census Bureau population estimate for the community served.

Gender Composition of the Department. In order to examine the relationship between gender composition of the department and the criterion measures, the items “As of January 1, 2013, how many PAID SWORN personnel worked in your agency? Male” and “Female” was divided by the total size of the department and then multiplied by 100 to obtain a percentage of both male and female officers within the department.

CHAPTER THREE

RESULTS

Prior to analysis, the measures used in the present study were examined through various IBM SPSS 23 procedures for accuracy of data entry, missing values, and fit between their distributions and the assumptions of multivariate analysis. Results from these examinations indicated that all of the variables were skewed with outliers. For this reason and considering the nature of the data, a bootstrapping resampling technique requiring 1,000 resamples and a 95% confidence interval was used for all analyses of the present study and are reported herein. Similarly, all reported analyses are standardized and reported as such. Table 1 indicates descriptive statistics for all of the continuous variables utilized in the study and Table 2 indicates descriptive statistics for all of the categorical variables utilized in the study.

Table 1. Descriptive Statistics for Continuous Variables Used in the Present Study

<u>Variable</u>	<u>N</u>	<u>Missing</u>	<u>Mean</u>	<u>Median</u>	<u>Standard Deviation</u>
PERCENT_HIRED_BA	2,507	319	0.05	0.01	0.121
PERCENT_MALE	2,799	27	0.91	0.92	0.085
PERCENT_FEMALE	2,799	27	0.09	0.08	0.085
CENSUS BUREAU ESTIMATE 2012	2,826	0	212,908	25,214.50	1,278,507.39
PERCENT ENGAGED IN SARA POLICING	1,062	1,764	0.42	0.33	0.496
DISMISSED DUE TO RESIGNATION	2,710	116	3.46	1.00	13.788
DISMISSED DUE TO TERMINATION	2,710	116	0.70	0.00	2.063
NUMBER OF USE OF FORCE INCIDENTS	1,483	1,343	81.65	15.00	226.442

Table 2. Descriptive Statistics for Categorical Variables in the Present Study

<u>Variable</u>	<u>N</u>	<u>Missing</u>	<u>Category</u>	<u>Valid %</u>
EDUCATION REQUIREMENT	2,769	57	No Requirement	1.3
			HS Diploma	83.6
			Some College	4.3
			Associates	9.4
			Degree	
			Bachelor's Degree	1.3
MISSION STATEMENT	2,756	70	Yes, statement	73.1
			No statement	26.9
COMMUNITY POLICING TRAINING- RECRUITS	2,250	576	None	31.9
			Less than half	11.4
			Half or more	5.4
			All	51.3
COMMUNITY POLICING TRAINING- IN SERVICE	2,586	240	None	32.9
			Less than half	19.8
			Half or more	10.9
			All	30.8
SARA ENCOURAGED	2,758	68	Yes	40.9
			No	59.1

USE BODYCAMERAS	2,805	21	Yes	27.7
			No	72.3

Results from Hypothesis 1a, the examination of the correlation between the created measure of education and the number of use of force incidents, indicated that education was not significantly correlated with the number of use of force incidents, $r(1465) = 0.042$, $p = .052$, 95% Bootstrap CI [-.006, .098]. Similarly, results from Hypothesis 1a assessing the correlation between the percent of individuals hired to the department with a Bachelor's degree in the previous year and the number of use of force incidents was not significant, $r(1345) = -.043$, $p = .057$, 95% Bootstrap CI [-.061, -.026]. In addition, the effect sizes associated with these relationships are extremely small. Therefore, there was no meaningful relationship between education and use of force.

Results from the examination of Hypothesis 1b, the relationship between the created education measure and voluntary resignations was not significant, $r(2676) = -.027$, $p = .084$, 95% Bootstrap CI [-.067, .013]. However, the relationship between the created measure of education and dismissals/terminations was significant, although the effect was miniscule, $r(2676) = -.040$, $p = .019$, 95% Bootstrap CI [-.076, -.006]. These results are noted in Figure 1.

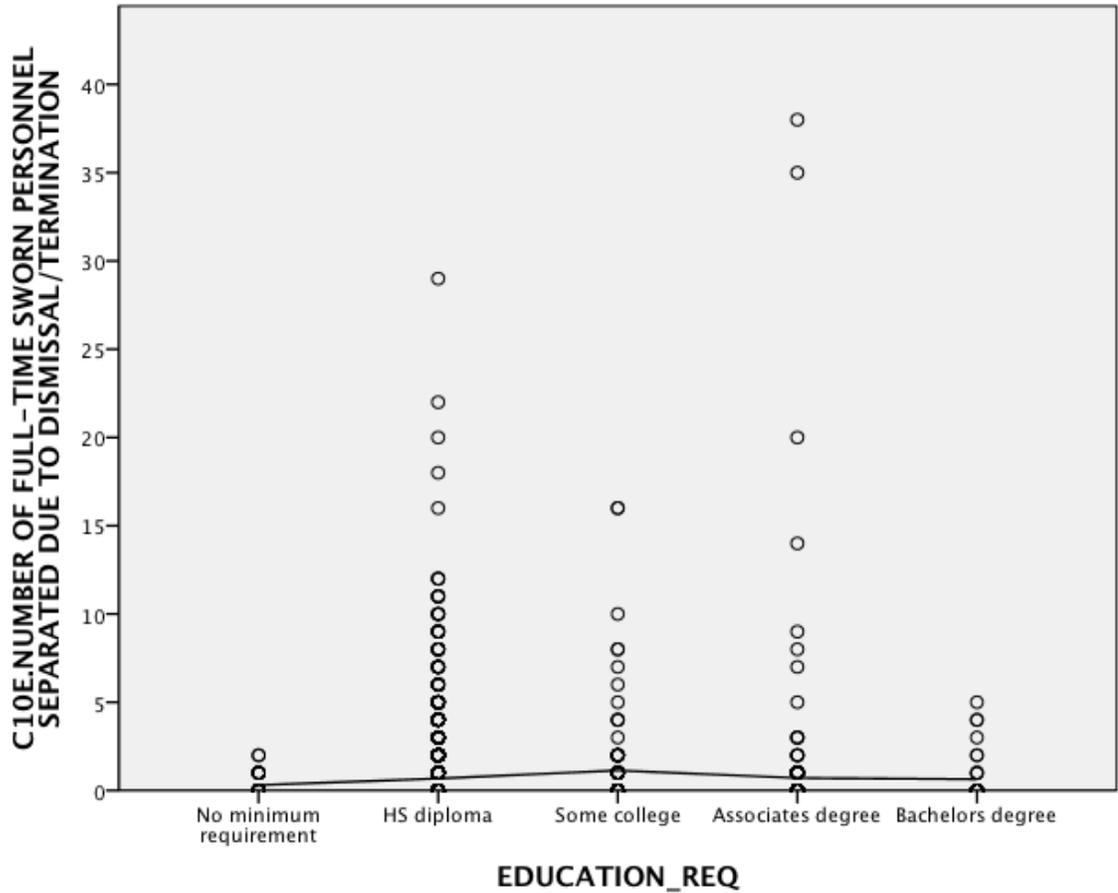


Figure 1. Scatterplot of the Correlation Between the Number of Officers Dismissed/Terminated and a Department-level Education Requirement

Findings from the analysis of the relationship between the percent of individuals hired with a Bachelor’s degree and number of voluntary resignations was not significant, $r(2457) = -.032$, $p = .056$, 95% Bootstrap CI [-.056, -.024]. However, findings from the analysis of the relationship between the percent of

individuals hired with a Bachelor's degree and dismissals/terminations was statistically significant, even though this effect was also miniscule, $r(2457) = -.039$, $p = .027$, 95% Bootstrap CI [-.055, -.022]. Therefore, both types of education requirements utilized by the department were predictive of dismissals/resignations, although these effects were rather small. These results are noted in Figure 2.

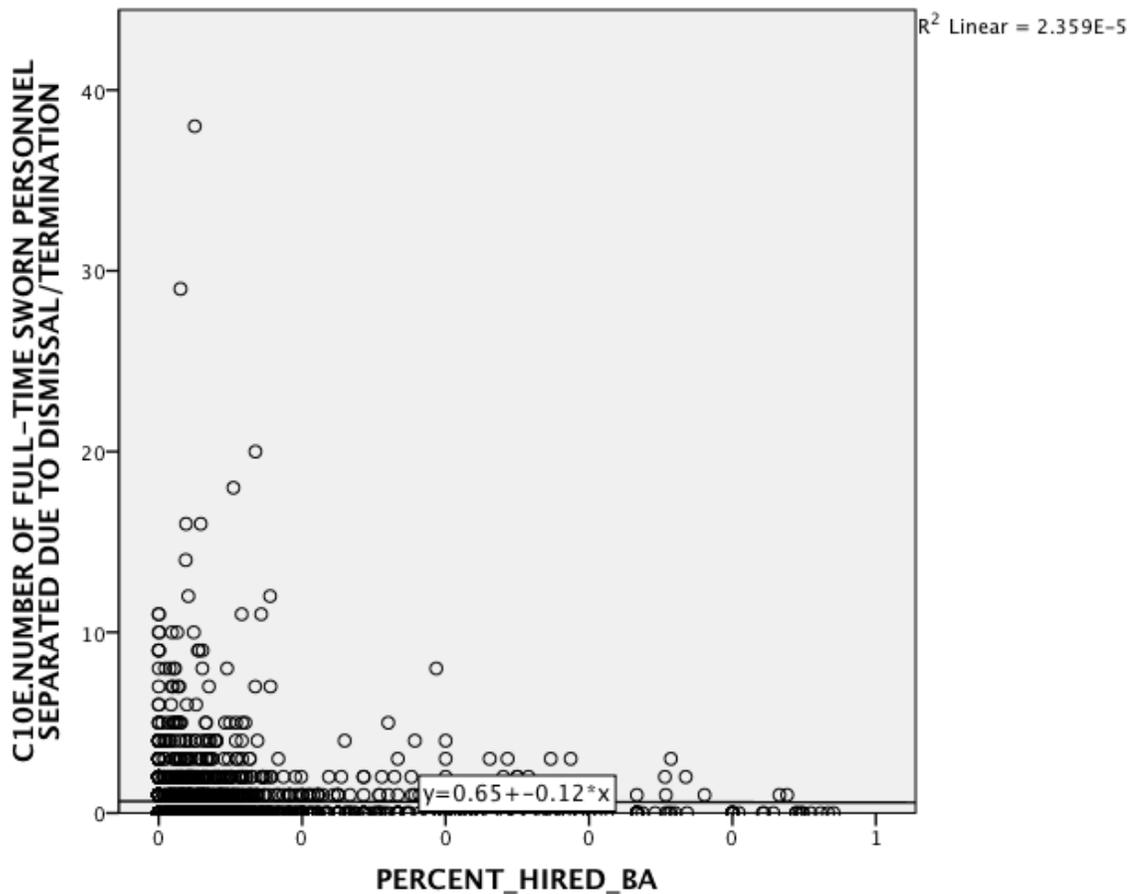


Figure 2. Scatterplot of the Correlation Between the Number of Officers Dismissed/Terminated and the Percent of Officers Hired with a Bachelor's Degree in the Last Year.

Results from Hypothesis 2a, the examination of the difference between use of SARA-type problem solving initiatives and the number of use of force incidents recorded by the department, a total of 838 agencies used in the analysis did not encourage SARA-type problem solving and a total of 634 agencies used in the analysis did encourage SARA-type problem solving. According to a Levene's test, equal variances were not assumed, $F(1470) =$

19.412, $p < .001$, and the resulting t-test was statistically significant, $t(1331.248) = -4.473$, $p = .001$, $\eta^2 = .014$, 95% Bootstrap CI [-30.659, -78.925]. However, this result contradicts the original hypothesis in that agencies that encouraged SARA-type problem solving had significantly more use of force incidents. Results from the second analysis in Hypothesis 2a, the examination of the correlation between the percent of individuals in the department involved in SARA-type problem solving and the number of use of force incidents recorded by the department was also statistically significant, $r(613) = -.094$, $p < .001$, 95% Bootstrap CI [.240, .461]. Therefore, agencies with a larger percentage of individuals involved in SARA-type problem solving had less reported use of force incidents, although the effect of this relationship was small. These results are noted in Figure 3.

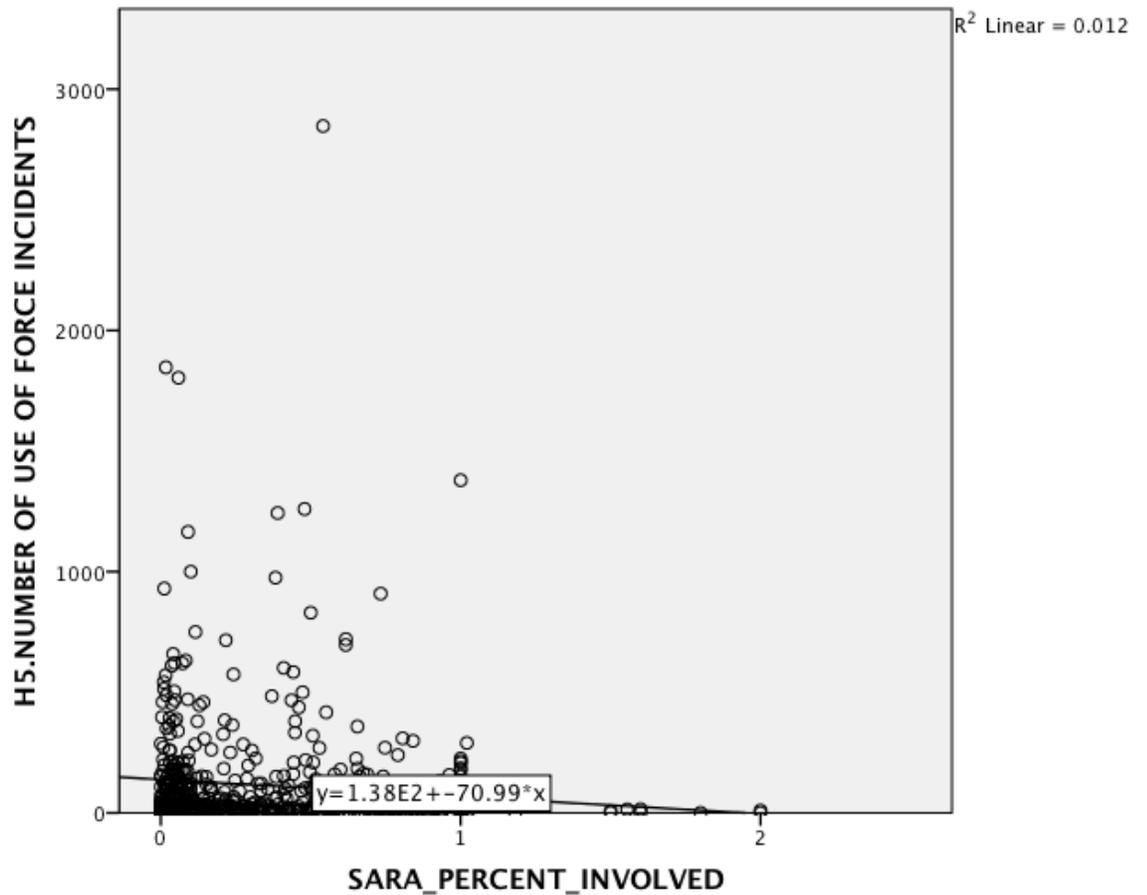


Figure 3. Scatterplot of the Correlation Between the Percentage of the Agency Involved in Scanning, Analysis, Response, and Assessment Problem Solving and the Number of Use of Force Incidents.

Results from Hypothesis 2b, the examination of the difference between use of SARA-type problem solving encouragement and the number of voluntary resignations, a total of 1579 agencies used in the analysis did not use SARA-type problem solving and 1094 did use SARA-type problem solving ($n = 2671$). According to a Levene's test for equality of variance, this assumption was not violated and the resulting t-test was statistically significant, $t(2671) = -1.957$, $p =$

.050, $\eta^2 = .001$, 95% Bootstrap CI [-.094, 1.993]. However, these results were in the opposite direction hypothesized. Results from the second part of Hypothesis 2b, the examination of the difference between use of SARA-type problem solving encouragement and the number of dismissals/terminations did violate the assumption of homogeneity of variance, $F(2671) = 8.835$, $p = .003$. This result was statistically significant, $t(2382.808) = -3.413$, $p = .001$, $\eta^2 = .001$, 95% Bootstrap CI [-.116, -.425], but again, was in the opposite direction of what was hypothesized. Therefore, agencies that encouraged SARA-type problem solving had significantly more dismissals/terminations even though this effect was miniscule. This result contradicts the original Hypothesis 2b.

Results from the second half of Hypothesis 2b, the examination of the relationship between the percentage of officers from an agency that participate in SARA-type problem solving and the number of voluntary resignations was statistically significant, $r(1038) = -.109$, $p < .001$, 95% Bootstrap CI [-.153, -.069]. Therefore, there was a small negative relationship between the percentage of individuals in an agency who participate in SARA-type problem solving and voluntary resignations. These results are noted in Figure 4.

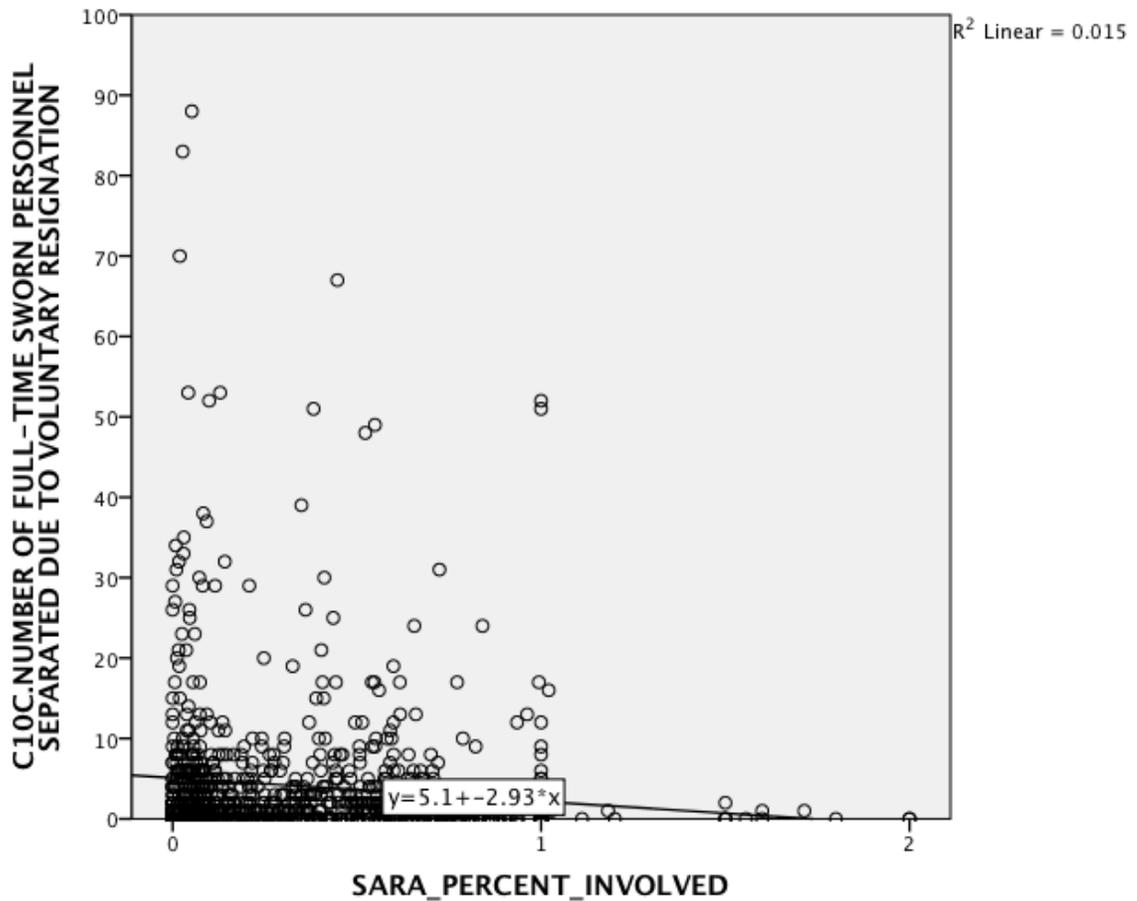


Figure 4. Scatterplot of the Correlation Between the Percentage of the Agency Involved in Scanning, Analysis, Response, and Assessment Problem Solving and Voluntary Resignations.

Results from the examination of the relationship between the percentage of officers from an agency that participate in SARA-type problem solving and the number of dismissals/terminations was also statistically significant, $r(1038) = -.102$, $p = .001$, 95% Bootstrap CI $[-.153, -.051]$. Therefore, there was a small negative relationship between the percentage of individuals in an agency that

participate in SARA-type problem solving and dismissals. These results are noted in Figure 5.

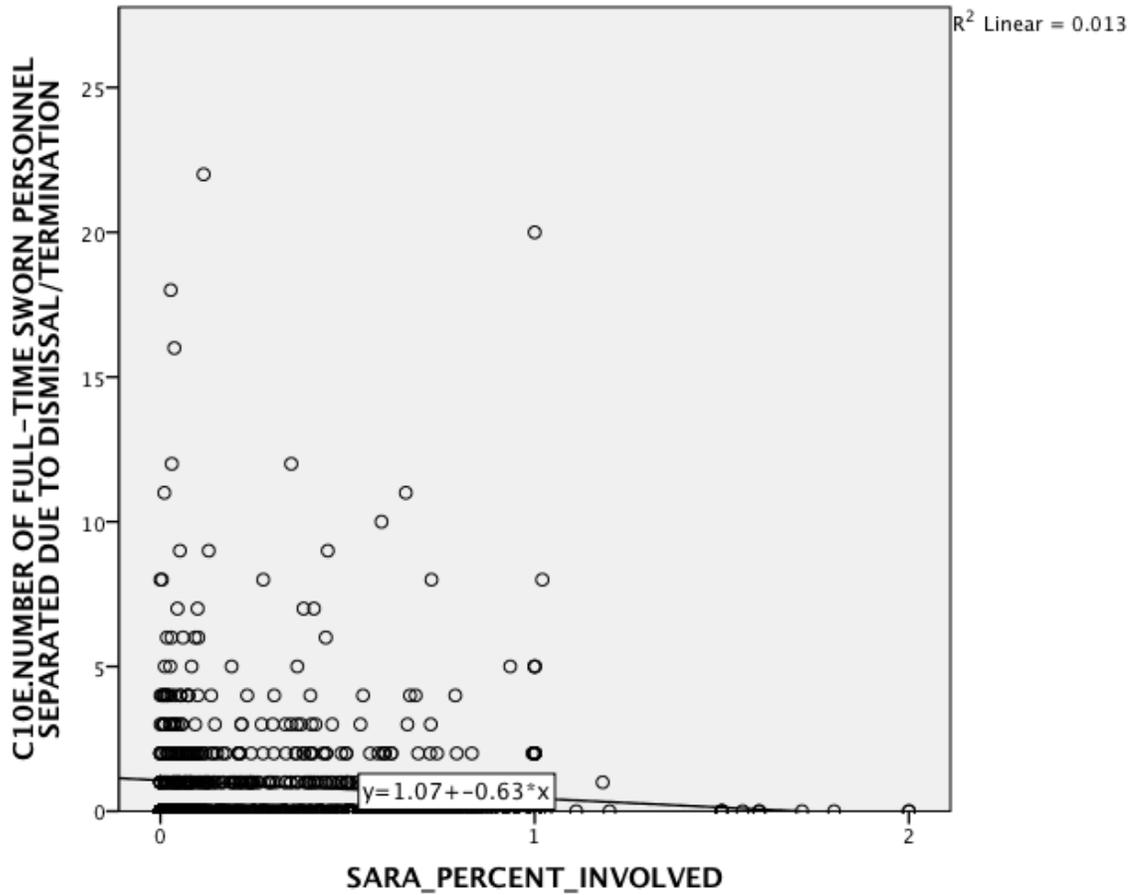


Figure 5. Scatterplot of the Correlation Between the Percentage of the Agency Involved in Scanning, Analysis, Response, and Assessment Problem Solving and Dismissals/Terminations

Results from Hypothesis 3 regarding if the agency has community policing written into the mission statement and the number of use of force incidents

indicated that 361 agencies included in the analysis did not have a clause regarding community policing in the mission statement of the agency and 1101 did have the clause. Results of this analysis did violate the assumption of homogeneity of variance, $F(2666) = 26.198$, $p < .001$, therefore equal variances were not assumed. This relationship was found to be significant, $t(1400.193) = -5.692$, $p = .001$, $\eta^2 = .010$, 95% Bootstrap CI [-72.23, -36.125]. However, this finding was contrary to the present study hypothesis. Specifically, agencies that had a community policing clause in their mission statement had significantly more use of force incidents, even though this effect was miniscule. Results from Hypothesis 3 regarding the proportion of officers an agency trains in community policing for more than 8 hours and the number of use of force incidents indicated that this was not statistically significant, $r(1376) = -.032$, $p = .115$, 95% Bootstrap CI [-.090, .021].

Results from Hypothesis 4 regarding the use of body cameras and the number of use of force incidents found that 1075 agencies did not use body cameras, while 406 did use body cameras. This analysis did not violate the assumption of homogeneity of variance, but was not found to be statistically significant, $t(1479) = 1.210$, $p = .208$, $\eta^2 = .001$, 95% Bootstrap CI [-7.881, 41.311].

Results from Hypothesis 5 testing the overall model that a relationship exists between the number of use of force incidents and education requirements, the percent of a department involved in SARA-type policing, a community

policing initiative in the department's mission statement and body camera requirements above and beyond the size of the department divided by the census bureau estimate for the size of the community served, and the gender composition of the department, found that the overall model was significant, $F(6, 593) = 5.170, p < .001, r = .223$. A total of 3.7% of the variance in use of force was accounted for by the ratio of officers to the size of the community served, and gender composition of the department (Adjusted $R^2 = .037$) and the predictors in the second block of the HLR accounted for only 1% ($\Delta R^2 = .010$) variance above and beyond the control variables (Adjusted $R^2 = .040$). The only significant predictor in the final model was the percent of the department that was female ($\beta = .229, p = .002, 95\% \text{ Bootstrap CI } [.128, .348]$). The final model is illustrated in Figure 6 and a summary of the final model is noted in Table 3.

Table 3. Summary of Hierarchical Regression Analysis for Variables Predicting Use of Force (N =2826)

Variable	<u>Model 1</u>				<u>Model 2</u>			
	<i>B</i>	<i>SE B</i>	<i>95% CI (LL, UL)</i>	<i>Sig.</i>	<i>B</i>	<i>SE B</i>	<i>95% CI (LL, UL)</i>	<i>Sig.</i>
Percent female	.249	.060	(-.146, .373)	.001	.229	.059	(.128, .348)	.002
Ratio of officers to population	-.060	.048	(-.170, .030)	.185	-.061	.047	(-.164, .030)	.171
Body camera use					.036	.046	(-.053, .129)	.435
Percent involved in SARA					-.058	.040	(-.162, -.008)	.102
Mission statement use					.067	.041	(-.025, .141)	.118
Education requirement					.060	.075	(-.059, .222)	.466

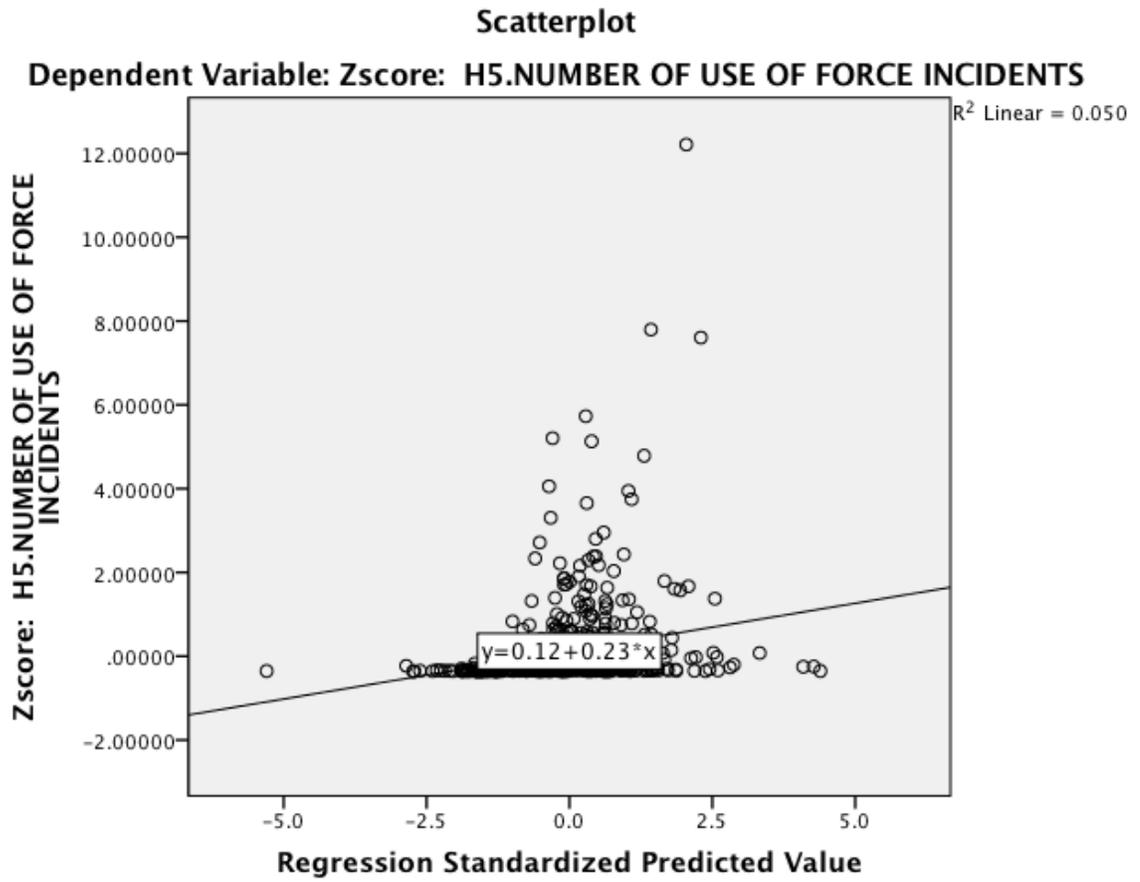


Figure 6. Final Linear Regression Model

CHAPTER FOUR

DISCUSSION

The purpose of the present study was to understand the influence education, cognitive ability, cognitive training, community policing, and body cameras have on police officer use of force and turnover. Specifically, higher turnover and use of force rates were expected to be associated with lower education requirements, a lack of SARA training and emphasis, no community policing initiatives or training, and no use of body cameras, while considering demographic variables of the department and communities served. The hypotheses were tested on the largest sample of law enforcement agencies across the United States ranging from municipalities to state governments as was recorded by the Department of Justice (LEMAS, 2013). Overall, only three of the seven hypotheses proposed in the present study were partially supported and the final model was only partially supported.

Education and Dependent Variables

In the present study, the relationship between the created education measures (the degree of education and percent of officers hired into a department with Bachelor's degrees), and use of force, were not confirmed. Similarly, the relationship between the created education measures (the degree of education and number of officers hired into a department with Bachelor's

degrees), and voluntary resignations, were not confirmed. However, the fact that the relationship between the created education variable and the number of dismissals/terminations, as well as, the relationship between the percent of officers hired with a Bachelor's degree and dismissals/terminations was statistically significant, supports the present studies hypotheses. The utilization of education requirements contributed to a lower number of officer dismissals. Much research on education and police performance has found that education is related to training and various measures of on-the-job performance (Aamodt & Flink, 2001; Band & Manuele, 1987; Baratta, 1998; Barbas, 1992; Boes, et al., 1997; Campa, 1993; Cascio, 1977; Smith, Locke, & Walker, 1967; Truxillo, Bennet, & Collins, 1998). According to research, individuals with more education deal better with training and perform better once on the job (Albarano, 2015). In addition, these individuals are better able to cope with a variety of situations and people, as well as in performing professional duties required for law enforcement on the job (Albarano, 2015).

One explanation for why these individuals perform better can be noted in Cairo and Cajner (2016) who found that workers with more education have higher rates of job stability because they have more job opportunities. More educated workers have more job opportunities, which translates to less tension and better outcomes in the work environment. In the previously mentioned study, less volatile separation rates occurred for individuals with a Bachelor's degree, as opposed to a high school degree or even some college and this was related to

the degree of education and training an individual had. These findings also support the research of Balci (2011) who found that education is positively related to job satisfaction and performance, while being negatively related to turnover. Therefore, individuals who have more education tend to be happier in their positions because they experience less stress at work and are less likely to engage in misconduct or be dismissed, and the findings of the present study support education in law enforcement, as can be explained by P-E fit theory.

One interesting finding of the present study is that individuals with “some college” were dismissed/terminated more than the four other potential education requirements by police agencies. In utilizing Tinto’s (1975) theory of dropout behavior, Stuart (2009) found that college students who dropout before the completion of a degree tend to be less committed to the organizations with which they affiliate and less certain about the jobs they wish to obtain, which results in higher turnover rates for this group of individuals. Subsequently, these individuals do not stay in the same profession for long periods of time until they are able to find a niche market that requires a different set of skills than those learned in college. Considering that the profession of law enforcement requires report writing and skills learned in college, as well as another set of physical skills in enforcing the job, individuals who drop out of college may possess the requisite physical ability, but fail in a job market that tends to require professional skills learned in college. This conclusion further supports P-E fit theory in law

enforcement and would explain the occurrence of more dismissals/terminations for this set of individuals, as was found in the present study.

Multiple reasons for the lack of relationship between education requirements and number of use of force incidents, and education requirements and number of resignations may exist in the present study. Paoline and Terrill (2007) found that education only reduced the number of physical force incidents for officers possessing a Bachelor's degree or higher when compared with officers who had only a high school education. Considering the fact that the current sample consisted of only 1.3 percent of officers with Bachelor's degrees and 83.6 percent with high school diplomas, there may not have been a large enough percent of officers with a Bachelor's degree to detect a significant effect. In regard to the lack of relationship between education requirements and resignations, Jones et al., (2005) found that more education did not contribute to police turnover intentions or commitment to the job. Together, findings from these studies and the present study indicate that a relationship between education requirements and use of force and resignations, may not exist.

Cognitive Ability and Dependent Variables

In the present study, the relationship between the percent of individuals who participated in SARA-type policing and number of use of force incidents, and percent involved in SARA-type policing and resignations was statistically

significant, although these effects were small. These findings support previous research on the relationship between training tasks that require cognitive ability and use of force (Kaplan & Uttley, 2016). In the present study, individuals who participate in police strategies which require more critical thinking skills were found to use less force and resign at lower rates.

Previous research that has examined use of force and SARA training has noted that higher cognition is negatively related to impulsiveness (Abbatiello, 1969) resulting in better self-regulation in regard to premeditation and perseverance (Whiteside & Lynam, 2001) and that impulsivity has a positive relationship with officer reprimands for excessive use of force in regards to handling problem situations (Beutler, Storm, Kirkish, Scogin, & Gaines, 1985). The findings of the present study support this conclusion. Similarly, cognitive ability is related to judgment (Bertram, 1975), another major factor in the decision to use force (Kaplan & Uttley, 2016). Ultimately the previous studies indicate that a negative relationship should exist between cognitive ability and use of force and that is what was found in the present study.

An interesting finding of the current study in regard to SARA-type policing is that the number of use of force incidents was not reduced simply by encouraging SARA-type policing, departments had to actually train officers on SARA-type policing to indicate a reduction in the number of use of force incidents. This finding supports the plethora of knowledge replete in the literature that indicates that training is effective in changing employee behavior (Ford,

2014). However, it is important to note that the item used from the LEMAS in regard to the amount of SARA training that officers received was only an eight hour minimum and did not specify exactly how much training officers received in hours. Variability could have ranged from eight hours annually to frequent and ongoing SARA training that occurred every week, and it is important to know the extent of SARA training that officers receive to better understand this relationship. Nonetheless, based on the findings of the present study, organizations should train SARA-type strategies to reduce the number of use of force incidents that occur within a department.

Research by Staller and Zaiser (2015) provide an indication of how to reduce use of force incidents among police officers. Drawing off previous research, Staller and Zaiser note that use of force training does not always transfer to job performance. Drawing from use of force literature and sports science studies, Staller and Zaiser conclude that by utilizing motor skill training in conjunction with decision making skills should increase the utilization of proper use of force techniques. A recent article was featured in the Huffington Post that examined one law enforcement agency that has had a significant reduction in the number of deadly use of force incidents as a result of training. Wing (2017) found that the Salt Lake City police department has not reported one single use of deadly force incident in the last 22 months. According to Wing, this is a result of using de-escalation techniques where officers are trained to communicate and empathize with suspects, while considering factors that may be related to

confrontation and attempting to de-escalate those factors before the situation becomes deadly. As a result, deadly force has not been used by the Salt Lake City police department since September 2015. Between June 2016 and May 2017, de-escalation techniques were used 37 times to prevent the use of deadly force when it was justified. In one incident that was recorded by a body camera, an officer encountered a knife wielding suspect and was able to subdue the man. The findings from this report indicate that effective training can reduce the number of deadly use of force incidents a department records.

Another interesting finding of the present study is that the encouragement of SARA-type policing was not found to be related to a reduction in use of force incidents, but the percentage of the department actively engaged in SARA-type problem solving was. This eludes to the need for officers to be forced to practice SARA-type policing and not simply “encouraged.”

Although the policy of encouraging SARA-type policing was not found to be statistically significant in reducing the number of use of force incidents in the present study, one policy has recently been found to be related to a reduction in the number of use of force incidents. Jennings and Rubado (2017) examined the use of deadly force among a large set of gun deaths reported by police agencies from across the United States. In their examination of gun deaths by law enforcement officers looking at police and community demographics, Jennings and Rubado found that one factor contributed to a reduction in the number of use of deadly force incidents by law enforcement officers: a requirement that a report

be submitted whenever an officer drew their gun, even if they did not discharge their gun. The finding by Jennings and Rubado corroborate the premise of Self-Awareness Theory (Silvia & Phillips, 2013) in that external regulations (i.e., having to complete a report whenever a gun is drawn) can reduce misconduct, although these findings were not corroborated by the present study.

Community Policing and Dependent Variables

In the present study, there was a significant difference between agencies that indicated a mission statement that included a clause regarding community policing and agencies that did not have a community policing clause, but this relationship went the opposite direction of expected, and there was no relationship between agencies that trained for community policing more than eight hours and those that did not. These are anomalous findings.

One potential explanation for this is that there has been a shift away from community policing since the attacks of September 11, 2001. Oliver (2006) describes the current era of policing the “Homeland Security” era. In response to the terrorist attacks of September 11th the federal government shifted away from community policing and to a more militaristic style to deal with domestic terrorist acts. Oliver notes that funding for community policing initiatives took drastic cuts, and reallocated to fight the war on terror. This change in philosophy about policing has permeated throughout the country as federal funding for community

policing took cuts and the homeland security budget made significant increases. As a result, community policing and closeness with citizens has been refocused on combatting terror. Therefore, some of clauses in mission statements may be more symbolic than substantive, reflecting a time when community policing was the focus. Similarly, the item used to measure community policing training only indicated if officers received eight hours of training annually. This may not have been enough to instill a mindset of community policing and result in less use of force, especially if the philosophy of the agency had shifted to a more militaristic orientation waging a war on terror.

Another potential explanation for these findings is that eight hours of community policing is not enough to cause change in officer behavior. The LEMAS does not specify the amount of community policing training officers receive (beyond the eight hour annual cutoff), or the intervals in which officers receive this training. Ford (2014) notes that in order to effectively change behavior, training needs to be ongoing. It may be that in order to receive federal funding, agencies must mandate eight hours of training and one eight hour training session on community policing is not effective in changing the behavior of officers in regard to use of force. This also alludes to the fact that this eight hour annual training may seem like a chore to police officers and they may have negative reactions to community policing all together, resulting in more use of force incidents. Further research should work to examine this statistical anomaly.

Body Cameras and Use of Force

In the present study, the utilization of body cameras had no relationship to the number of use of force incidents recorded by a law enforcement agency and this finding was contrary to present hypotheses. Perhaps there is more to use of force situations than just individual or department-level variables. Ariel, Farrar, and Sutherland (2015) examined Rialto, California police officer use of force using a randomized control group that did not wear body cameras and an experimental group that did wear body cameras. Ariel et al controlled for beat, shift, and partner dyads in order to examine the effects of body cameras on use of force incidents. In their analysis of each individual situation, as was reviewed by actual body camera footage, Ariel et al concluded that the situational variables in which use of force incidents occur require analysis. Specifically, when citizens felt that they had a “bad experience” or negative perception of law enforcement, they were more likely to resist, resulting in the use of force, or complain about law enforcement officers after the fact. The findings from this study indicate that not only do law enforcement policies and technology need to be assessed in the effectiveness of reducing force, but that situational variables can weigh heavy on the decision to use force by law enforcement officers.

Another recent study also found that the immediate situation may predict use of force beyond the utilization of body cameras. Willits and Makin (2017) examined unedited footage of police-worn body cameras and to understand how incident characteristics play a role in the use of force, how long the use of force

occurs, and the severity of the force used. Willits and Makin then coded these behaviors and used a regression analysis to evaluate use of force incidents. Findings from their study indicated that although certain suspect characteristics predict use of force variables, suspect resistance predicted the amount of time that passes before force is used and the duration of force applied. Similarly, greater levels of force are used in more drawn out interactions. The findings from their study also indicate the need to assess situational variables related to officer use of force.

Finally, a study by Ariel et al (2016) can also shed light on why body cameras, as measured in the present study, may not have been found to reduce use of force incidents. In examining the effect of officer body cameras on police use of force, Ariel et al. examined officer discretion in turning on and off body cameras. In their study Ariel, et al. recorded the degree to which officers have discretion in turning body cameras off from no discretion to complete discretion. Ariel et al. found that when officers had no discretion in turning off body cameras, use of force rates were reduced significantly, but when officers had complete discretion to turn off body cameras, this technology had null effects in reducing use of force rates. These findings provide a potential limitation to using the LEMAS survey for predicting use of force that will be discussed in the limitations section. Nonetheless, the previously mentioned studies provide potential explanations for the null result found regarding body cameras reducing the number of use of force incidents reported by an agency.

The only other predictor not discussed herein thus far that was found to be significant in the final model was the gender composition of the department. Although gender accounted for only a small portion of variance in use of force, this is one critical finding of the present study.

Implications

The present study has various theoretical and practical implications for law enforcement agencies across the country. The finding that department education requirements and hiring procedures are related to dismissals/termination indicate that the professionalization of policing can have both positive and negative effects on turnover. Specifically, by requiring more education, law enforcement officers may have less commitment to the profession of policing because there is a larger variety of positions available to them (Cairo & Cajner, 2016). However, the requirement of education and SARA-type policing allows officers to draw off a larger base of cognitive skills, which may result in less conduct issues and subsequent dismissals. Considering that law enforcement is stressful, a characteristic that has been shown to lower organizational commitment and often times result in turnover (Jaramillo, Nixon, & Sams, 2005), departments should assess variables related to organizational commitment. To deal with this issue, those in charge of hiring and training practices should consider organizational commitment, as well as variables that consider stress management, job satisfaction, supervisor supportiveness, promotion opportunities, and group

cohesion (Jaramillo, Nixon, & Sams, 2005) in order to curb high turnover rates among law enforcement officers.

A practical implication of the present study is that department-level practices can reduce the costs incurred by civil litigation and high turnover rates (Elinson & Frosch, 2015). Specifically, engaging in SARA-type policing can reduce the number of use of force incidents. By emphasizing SARA-type policing, departments can force law enforcement officers to use more critical thinking skills and reduce use of force occurrences. Therefore, police agencies should require that officers engage in critical thinking training on a frequent basis, such as SARA-type policing. These trainings should be important in designing policing strategies on the job, and training police officers. A reduction in the number of improper use of force incidents can be critical in reducing civil unrest, especially in minority dominated communities (Chapman, 2012). Ultimately, the present study greatly contributes to the efficiency and effectiveness of department practices in police work. These policies could also greatly reduce the amount of money that law enforcement agencies spend out of their operating budget toward officer misconduct and turnover, creating more fiscally efficient agencies.

Limitations

Limitations regarding the level of measurement and the variables measured by the LEMAS, may be present in the current study. Individual-level variables and agency-level variables may be measured at different levels. Just because an agency has a requirement to hire individuals with a certain degree of education, does not necessarily mean that a majority of that department has a certain level of education. In order to understand the relationship of education and the dependent variables, an accurate measure of the composition of the level of education would need to be recorded. Specifically, the current policies incorporated by an organization may not have phased out older officers who do not meet these requirements, such that even though a department hires more educated individuals, the total of number of individuals who work full-time for a department may not meet these criteria. That information was not available through the current data and is a limitation to the findings of the present study. If information regarding composition of the level of education was available, the difference between individuals and departments would need to be considered both individually and jointly from a psychometric perspective (Schuler, Farr, & Smith, 2013). Schuler et al. argue that to understand the relationship between individual and organizational-level variables, a balancing of these kinds of variables must occur. In many cases, this requires multi-level modeling to account for variance nested within department-level variables (Snijders, 2011).

One example would be the nesting of city, county, and state agencies across all regions of the United States. In examining turnover among law enforcement officers using the 2003 LEMAS, Wareham, Smith, and Lambert (2013) found significant differences in rates of turnover for smaller departments, municipal agencies, agencies in the South, and agencies located in rural areas. The findings of this study indicate that more factors need to be considered beyond the ratio of officers to the size of the population served that was used in the present study, such as urbanity, region, and type of department. By utilizing multi-level modeling, the nesting of factors in larger structures of locations and demographics can be considered.

Directions for Future Research

Directions for future research include measuring individual-level variables and considering other factors related to the use of force, such as the situation and incident. As far back as 1980, Freidrich found that individual and aggregate variables accounted for so little variance in the understanding of police officer use of force, that situational variables needed to be examined. Freidrich concluded that situations dictate the use of force and must be measured to understand officer use of force. Among these considerations are race, age, and gender. Because such a small portion of the variance was accounted for in the present study and noting that situational variables inherently have much utility in

accounting for variance in officer decisions to use force, situational variables need to be utilized in any consideration of use of force.

Another consideration that should be made in conducting future research would be the specific factors related to education that contribute to fewer dismissals. Are officer dismissals due to lack of education because the officer is not able to perform their tasks writing, communicating, and problem solving, as Albarano (2015) notes are advanced by education, or are dismissals related to officers not interacting properly with the public, or being intolerant of certain types of individuals? Reasons why officers are dismissed need to be considered in subsequent studies to better understand the relationship between education and police officer performance. Understanding the direct reasons for this relationship is paramount to future research.

Another way that future research can improve on the present study is by examining the relationship between encouragement of a task and the requirement of a task. Police officers exercise a large amount of discretion in performing their duties (Marion & Oliver, 2012). The present study found that when SARA-type policing was encouraged, there was no reduction in the number of use of force incidents, but when the percent of the department involved in SARA-type policing was assessed, there was a negative relationship with number of use of force incidents. One historical policing study found that when officers were forced to enforce domestic violence policies, arrests were significantly greater than when the policy was not mandated (Sherman & Berk,

1984). Similarly, when types of policing are not mandated, officers may exercise discretion and not enforce the policy. Future research should examine the link between “encouragement” of policy and the mandate of certain policies to examine the influence of policing practices on officer use of force.

One final improvement that can be made would be in regard to measurement by the LEMAS. There is large variation in the measurement of the LEMAS. Areas where this could have been problematic for the present study are in regard to the specific reasons officers were fired or resigned, the amount of community policing training officers receive and at what intervals, the exact percent of any given department that have Bachelor’s degrees, and a description of the use of force incidents. Ultimately, this is a data collection issue and this lack of information points to the need for the DOJ to gather this information in the form of a more descriptive survey. Improving the measurement of the LEMAS can have great utility in better understanding variables related to the present study and should be considered. By assessing the above-mentioned directions for future research, more information regarding turnover and use of force can be understood.

Conclusion

Many of the hypotheses of the present study were not confirmed. However, the present study contributes to the literature in several important

ways. First, the finding that there were significant predictors of turnover and use of force in such a large examination of officers and agencies means that these factors are predictive on a large scale and have generalizability across the United States. Second, the findings that were not significant indicate that there are other factors at play beyond what was measured and utilized in the present study and this study serves to guide future research in the field. Finally, the results of the present study alludes to a need for better national measurement and recording of variables related to policing. Ultimately, research needs to continue to examine use of force and turnover amongst police officers in order to draw better conclusions and inform the best practices in relation to these policies.

APPENDIX A
2013 LAW ENFORCEMENT MANAGEMENT AND ADMINISTRATIVE
STATISTICS SURVEY ITEMS

United States Department of Justice. Office of Justice Programs. Bureau of Justice Statistics. Law Enforcement Management and Administrative Statistics (LEMAS), 2013. ICPSR36164-v2. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2015-09-22.
<http://doi.org/10.3886/ICPSR36164.v2>

Variables used in the present study:

POP2012 - CENSUS BUREAU POPULATION ESTIMATE FOR 2012

FTSWORN - A1C.TOTAL NUMBER OF SWORN PERSONNEL ? FULL-TIME

A1. As of January 1, 2013, how many PAID SWORN personnel worked in your agency?

Do not include seasonal employees whose positions are regularly added during peak months of the year and dropped after the peak season. If none, enter '0.' - Full-Time

PERS_PDSW_MFT - A1A.NUMBER OF MALE SWORN PERSONNEL ? FULL-TIME

A1. As of January 1, 2013, how many PAID SWORN personnel worked in your agency?

Do not include seasonal employees whose positions are regularly added during peak months of the year and dropped after the peak season. If none, enter '0.' - Full-Time

PERS_PDSW_FFT - A1B.NUMBER OF FEMALE SWORN PERSONNEL ? FULL-TIME

A1. As of January 1, 2013, how many PAID SWORN personnel worked in your agency?

Do not include seasonal employees whose positions are regularly added during peak months of the year and dropped after the peak season. If none, enter '0.'- Full-Time

HIR_EDU_NO - C6-1-5 MINIMUM EDUCATION REQUIREMENT FOR NEW SWORN HIRES

C6. As of January 1, 2013, what was your agency's minimum EDUCATION REQUIREMENT for SWORN NEW HIRES? Check one.

- 1 No minimum requirement
- 2 High school diploma or equivalent (e.g., GED)
- 3 Some college but no degree
- 4 Associate's Degree or equivalent
- 5 Bachelor's Degree or equivalent

HIR_BD_VAR - C8.NUMBER OF FULL-TIME SWORN HIRES WITH A BACHELOR'S DEGREE OR HIGHER

C8. During the 12-month period ending December 31, 2012, how many employees hired for FULL-TIME SWORN positions had a BACHELOR'S DEGREE OR HIGHER? If none, enter '0.'

HIR_SEP_VOL - C10C AND E .NUMBER OF FULL-TIME SWORN PERSONNEL SEPARATED

C10. During the 12-month period ending December 31, 2012, how many FULL-TIME

SWORN personnel SEPARATED from your agency? If none, enter '0.'

Full-Time

c. Voluntary resignations

e. Dismissals (e.g., terminated/fired by agency)

COM_MIS - E1.COMMUNITY POLICING COMPONENT IN MISSION

STATEMENT

E1. As of January 1, 2013, what best describes your agency's WRITTEN MISSION

STATEMENT?

1 No written mission statement

2 Written statement, no community policing component

3 Written statement, yes community policing component

COM_TRN_REC - E2A.AT LEAST 8 HOURS OF COMMUNITY POLICING

TRAINING FOR RECRUITS

E2. During the 12-month period ending December 31, 2012, what proportion of FULL-

TIME SWORN PERSONNEL received at least 8 HOURS of training on COMMUNITY POLICING issues (e.g., problem solving, SARA, and community partnerships)? Check one for both 'a' and 'b.'

b. In-service Training (Check one)

1 All

2 Half or more

3 Less than half

4 None

COM_SARA - E3.SARA-TYPE PROBLEM-SOLVING PROJECTS ACTIVELY
ENCOURAGED

E3. During the 12-month period ending December 31, 2012, did your
agency actively

encourage PATROL OFFICERS to engage in SARA-TYPE PROBLEM-
SOLVING PROJECTS?

1 Yes

2 No

COM_NSARA - E4.NUMBER OF PATROL OFFICERS ENGAGED IN SARA-
TYPE PROBLEM-SOLVING PROJECTS

E4. During the 12-month period ending December 31, 2012, how many
PATROL

OFFICERS were engaged in SARA TYPE PROBLEM-SOLVING
PROJECTS? If none, enter '0.'

TECH_TYP_VPAT - F1F.UTILIZED VIDEO CAMERAS ON PATROL OFFICERS

F1. As of January 1, 2013, did your agency use any of the following
TECHNOLOGIES

to collect information?

f. Video cameras on patrol officers

1 Yes

2 No

SAFE_FTTL - H5.NUMBER OF USE OF FORCE INCIDENTS

H5. If YES to H4a, during the 12-month period ending December 31, 2012, how many

TOTAL use of force INCIDENTS did your agency record? If none, enter '0.'

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