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FORCE USED BY A POLICE OFFICER IN GAINING COMPLIANCE IN ARREST
SITUATIONS.

John Vespucci

A dissertation submitted to the Graduate Faculty in Criminal Justice in partial fulfillment of the
requirements for the degree of Doctor of Philosophy.

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ABSTRACT

**POLICE OFFICERS AND COLLEGE EDUCATION:
THE ASSOCIATION OF COLLEGE EDUCATION AND THE LEVEL OF FORCE USED BY
A POLICE OFFICER IN GAINING COMPLIANCE IN ARREST SITUATIONS.**

by

John Vespucci

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The objective of this study was to research the association between a police officer's college education and the level of force a police officer uses to gain compliance when making an arrest. There is a strong agreement in existing literature that the college education of a police officer has positive effects upon police officer skill sets including the use of force. However, this study seeks to update existing literature as most studies are over a decade old, which is problematic due to the fact that they are outdated and may not represent the challenges in contemporary policing. This study collected self-reported survey data from 425 sworn law enforcement officers throughout six states. Unlike the sampling frames previously studied, the sample in this study consisted of sworn law enforcement officers from 143 individual police departments from different areas of the country. This study analyzed college degree levels and the number of college credits earned by a police officer through the use of Multinomial Logistic regressions and Poisson regressions. The tests showed that both police officer's earned college degree level and earned college credits inversely impacted the level and frequency of force used in arrest situations. These relationships were statistically significant which reinforced previous findings of the benefits of a college education in policing and fulfills the need to provide updated and future research in this field. Other variables such as crime level encountered, officer opinions of

college education and officer age, race and gender were also analyzed which had little or no statistically significant impact on the level of force used. The outcome of this study can potentially influence police administrators to consider college education as well as different degree levels as factors in police hiring practices.

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Chapter 1: Introduction

The use of force in policing is often influential in forming citizens' attitudes of and perceptions of police and policing (Friedrich, 1980). The use of, and level of force used by a police officer can have an effect on one's perception of the legitimacy of and confidence in policing, especially when that level is deemed excessive. Perceptions of improper and excessive use of force can further lead to distrust in police officers and the law enforcement mechanism, as well as the deterioration of essential police-community relations. Although many studies report that the use of force at an extreme level, such as deadly physical force, is statistically infrequent (Garner, Buchanan, Schade, & Hepburn, 1996; Klinger, 1995; National Institute of Justice, 1999; Reiss, 1971), contemporary media often portrays the contrary.

News coverage tends to concentrate on stories that are atypical, but interesting to the consumer. Because the media has such a powerful influence on the public and its social construction of crime and the responses to it, news reports of the few extreme cases are worrisome and have prompted protests and demonstrations. An additional consequence of misrepresenting police use of force by the media is that society's support for the police wavers which has led to the deterioration of respect for police officer authority (Li, Ren, & Lou, 2016). The negative effects of portrayed and actual police misconduct outweigh the positive actions of police when assessing public satisfaction with police (Li, et al., 2016). A landmark example was that of the Rodney King incident that occurred on March 3, 1991.

The technological advances of the time started the revolution of purchasing affordable personal video equipment. Many took to the streets to videotape the public, and often police officers in action. This common practice allowed an ordinary citizen to visually capture the stop

and subsequent beating of Rodney King by four Los Angeles police officers. Almost instantaneously, the world was able to see first hand the effects of police misconduct that occurred on a quiet desolate street in California. Subsequent to the airing of the video, the four officers were arrested and charged. Three were acquitted and the jury did not reach a unanimous decision of the fourth. The outrage felt by the citizens of Los Angeles, especially those who were African American, led to one of the nation's largest riots. The indignation of the minority communities, in part from the growing tensions between minorities and the Los Angeles Police Department (LAPD), erupted as the acquittal was aired immediately on the national news. Many people outside the jury room could not understand the verdict after have viewing the video and lashed out with anger and despair against the community and police. The riots, later termed the 1992 Los Angeles Riots, lasted six days, and resulted in 63 deaths and over 2,000 people injured (Whitman, 1993). The community of Los Angeles also suffered more than 7,000 fires and nearly one billion dollars in damage (Whitman, 1993). The LAPD was unable to regain order and the United States Army, Marine Corps. and the National Guard were relied upon to restore peace.

Two years later, a federal court found three of the officers guilty, however mitigated their sentences to 30 months in prison. Although two juries reviewed the evidence and testimony in the case and came to similar verdicts, which held that the officers had no/little culpability in the incident, the opinions of those who saw the video seldom waiver about the officers' dire wrongdoings. Almost three decades later, this case is still remembered by many Americans and a level of prejudgment and mistrust towards police officers and the criminal justice system overall is often still felt today. Building and rebuilding trust in the police, especially after incidents such as the assault on Rodney King, is an essential focus in every generation of policing. Identifying and addressing factors that lead to both positive and negative policing

outcomes is an important step in improving policing overall. One such factor extensively studied is the impact of a college education upon police officer performance.

Although previous literature has identified a relationship between college education and the skills needed for positive police performance, most literature published is over a decade old and does not represent the growing need for the positive attributes that college education affords police officers in today's policing era. Today's era of policing vastly differs from the past, and is still changing at a rapid rate. Post 9-11 policing, the war on terrorism, police and civilian worn body cameras, and the sweeping integration of the internet into everyday society are just some of the examples that have introduced a multitude of additional responsibilities to modern-day police officers.

This research examined the association between a police officer's college education and their use of force, specifically in contemporary policing. Additionally, this research built upon examining the college education of a police officer and previous studies that found that college education in policing was associated with police officer skill sets such as: use of force, police professionalism, satisfaction ratings, conceptual skills, communication skills, coercion, racial discrimination, and other factors used to define police officer performance. Police performance is the prime basis for police related lawsuits and negative perceptions of police (Otu, 2004). Minimizing conduct and factors that are associated with these negative actions, such as excessive use of force is paramount and creating a police force that is comprised of officers that meet and exceed the public's expectations ought to be a priority in police departments. This study primarily addresses the college education of a police officer and its association with the level and frequency of force used by that officer.

Significance of the Problem

The use of force by police officers is defined as “acts that threaten or inflict physical harm on suspects” (Terrill, 2003, p.56). The capacity and lawful authority for police to use coercive force upon the general public is what distinguishes it from other occupations, making the police profession and its permissible use of force inherently controversial (Bittner, 1970; Reiss, 1971; Scharf & Binder, 1983; Sherman, 1980; Walker & Fridell, 1993). Although other professions such as correction officers have the legal authority to use force, the general public has the greatest exposure to police officer use of force. The overuse or abuse of force leads to a decrease in the level of confidence the public has in the police (Ross, 1999). The concept of the use of force has often not been considered a rigid principle therefore officers are given substantial discretion in deciding upon a reasonable amount of force necessary to subdue a suspect.

The amount of force a police officer is permitted to use was defined vaguely by the United States Supreme Court via *Graham v. Connor*, 490 U.S. 386 (1989). *Graham v. Connor* states that the force used by police to gain compliance during an arrest must be, “... objectively reasonable in view of all the facts and circumstances of each particular case...” Police departments, responding to *Graham v. Connor*, instituted a second component to the use of force based on established parameters (Walker, 2007). This was an attempt to not only define the permissible level of force to be used, but to create guidelines in controlling it. The use of force continuum attempts to clarify what can be classified as objectively reasonable (Terrill, 2003). The continuum classifies and defines a level of force that an officer is permitted to use, from minor (verbal commands) to lethal (deadly physical force). It also assists police policies to

define which level of force ought to be used as most agencies refer to the force continuum to specify the most amount of force permitted to gain compliance.

The establishment of a universal use of force continuum was and still is problematic, as several different structural designs were adopted and revised largely based on individual department policies and philosophies. Not only do these philosophies differ, but so do certain dynamics of police departments with the nation. For example, some agencies rely heavily on tactical training and equipment, whereas others might not have the funding to do so. Additionally, professional philosophies and political encouragements influence different policing approaches. A traditional use of force continuum and widely used design, modeled a ladder type approach using hierarchical steps that attempted to provide structure in light of the *Graham v. Connor* decision (McEwen, 1997). This continuum established a graduated list of actions that can be permitted by a police officer, based on the amount of resistance and force used by a suspect. The intent behind this model is that an officer's use of force can be deemed reasonable if they used 'one level of force greater' than that of the suspect. Conversely, if an officer used a substantially higher level of force than the suspect used, the officer's level of force could be defined as excessive.

In this model, the first level relied on the officer's presence as the lowest amount of force through the highest amount, deadly physical force, with increasing force levels in between. Although the steps in between are detailed later in this study, the use of soft techniques (control holds, open hand strikes), hard techniques (punches, kicks), blunt impact weapons (batons), or chemical (pepper spray) or electronic weapons (taser) is the general order before the last, deadly physical force. Another less popular, but often used continuum was constructed based on a

wheel-type design allowing officers to ‘jump’ levels of force if the circumstances warranted them to so. The purpose of this approach was to not constrain officers to use less force than what was required, as an officer should not be restricted to use, or perceive that they must use, just ‘one level’ of force greater than the suspect’s level of force, as in the ladder approach. The levels of force within all force continuums however, are not standardized amongst all police departments. The most common difference is the use of chemical weapons and conducted electronic devices (CEDs) in different positions within the continuum. Some departments have chosen to place these techniques lower on the continuum (right above verbal commands) and others just prior to the lethal end of the spectrum, deadly physical force (Alpert & Dunham, 2010).

Differences in theoretical and practical philosophies have impacted the choice and design of force continuums used in different police agencies (Alpert & Dunham, 1997; Bazley, Lersch, & Mieczkowski, 2007; Bertomen, 2003; Crawford & Burns, 1998; Garner, et al., 1995; Kaminski, Edwards, & Johnson, 1999; Klinger, 1995; Terrill, 2005; Terrill & Mastrofski, 2002). The effects of adopting different policies have been studied with varying findings. Terrill & Paoline (2012) have reported that in their study of 29 police agencies, 73% use the linear continuum (ladder-type) model while roughly 10% use the wheel design. Research regarding the impact of either force continuum is problematic due to varying degrees of defining citizen resistance along with ‘out clauses’¹ which permit circumventing the continuum (Terrill & Paoline, 2012). Research in the use of force is difficult, as several other factors ought to be considered when evaluating a police officer’s use of force and labeling it as excessive. These factors are discussed later in this study.

¹ ‘out clauses’ as defined by Paoline & Terrill (2012) include situations where the suspect’s characteristics differ (height/weight, skill, mental states, drug/alcohol use, officer fatigue, etc.)

Although often police use of force lends itself to a negative outlook towards policing, the use of force is often necessary in police encounters to maintain order. Eliminating the use of force in policing ought not to be an objective in so much as looking towards avenues to use force as a last resort, as the use of force is essential in policing. Each incident that an officer uses force can lead to a myriad of problems not just limited to officer/civilian injury. Police legitimacy, community relations and trust in the police are other key consequences of police use of excessive force. The force continuum is an attempt to control which level of force should be used, however this continuum lacks the specific factors such as officer characteristics and skills that can lead to other methods to control a situation. It simply concentrates on what level of force a police officer should use based on a suspect's resistance. The lack of addressing these other factors is problematic, as although the continuum provides important guidelines, other de-escalation and verbal techniques can be highly effective as well in gaining compliance.

Background of the Problem

Since contemporary police/public conflicts based largely on use of force incidents have affected the perception of police officers, a solution that might prove to be beneficial is to explore factors that can be related to police officer use of force. The requirement of a college education for police officers is one such factor. This factor was identified in policing as far back as 1907 with law enforcement pioneers such as August Vollmer, who was the first police chief to require college degrees for police officers. Existing literature based on numerous studies since then support the need for, and benefit of college educated police officers. For example, past studies have shown that college educated officers use less force less often than their less educated counterparts (Aamodt, 2004; McElvain & Kposowa, 2008; Paoline & Terrill, 2007;

Ryberg & Terrill, 2010; Telep, 2011; Terrill & Mastrofski, 2002). Recent studies however are lacking and studying predictors of police behavior in contemporary policing is essential.

Regional police academy training, despite having variations in training standards, do in fact provide a substantive amount of education for new recruits and often have in-service training, although limited, for those who have been working as police officer. The average police academy training in the United States can last roughly 20 weeks, or 600-800 hours. Each state has its own minimum training regulations, and some states vary their training requirements further based on individual county standards.

Additionally, counties within most states often have their own training standards and centralized training models where universal nationwide standards are often not used. Police applicant requirements also vary across the nation as well. For example, only eight state police agencies require post-secondary education, and twelve additional states accept college education with varying credit requirements in lieu of other requirements (previous law enforcement experience, military, etc.) (Burriesci, 2001). Department applicant standards however have been slowly changing with more departments adding educational requirements.

These training standards however are substantially different from other countries. For example, policing in Germany requires 30 months of police training, and in Ireland, 104 weeks (Haberfeld, 2003). Police officers in Finland and Norway must have four years in Police College (Haberfeld, 2018). Police training methods also vary greatly. Other countries have relied upon integrated police training curriculum as an essential component of police training. The integration relies upon addressing certain aspects of training that are essential in policing such as distinct subject matter, themes, topics, ideas, practical thinking, and in many cases, the learner's

own interested enquiry. Problem solving and analytical thinking, a key component in policing is often not the guiding principles of academy training. Andragogy, the method of teaching that involves student and teacher collaboration is often not incorporated into police training in the United States. When this method is coupled with pedagogy, a one-way transfer of information, it can prove to have effective results. This is seen in countries such as Britain, where in the British Police Training Center, trainers concentrate on a participatory approach to instruction (Haberfeld, 2003).

The United States relies heavily upon police training in an academy setting to prepare recruits for their careers. This also differs from other countries, where a diverse education requirement is required. For example, police training in Finland provides training, in part, through a Police College that has a vocational focus that provides police recruits with a more versatile background (Haberfeld, 2003). Additionally, the training is based on a classroom-to-field-to-classroom experience wherein the recruit has the opportunity to subsequently analyze their field experiences in a classroom setting. This cycle of learning is important to add to police training as professional instructors equip recruits with the best universal instruction, rather than solely relying on a field training officer as seen in the United States.

Another example of policing that has substantial differences in police training from the United States is the police force in Japan. Passing a national qualifying examination along with holding a high school diploma is a requirement, however approximately one-half of recruits are university graduates (Haberfeld, 2003). A year of training is required in police school for high school graduates (six months for university graduates), which concentrates on law, technical training and police procedures. An integrated component of sociology, psychology, history and

literature are also taught within this police college. Within Japan, police officers are better educated than the general public overall, and this important aspect, as discussed later, is contrary to the police/citizen educational relationship in the United States. The second year of training is devoted to field training, and like Britain, recruits then return to school to synthesize their training experiences with theoretical training.

Policing is a profession that requires critical thinking, tactfulness, thinking on one's feet, empathy, and some level of sociological and psychological knowledge. And though policing is arguably one of the most risky and challenging careers imaginable, officers often rely only on basic training in emergency and high-tension situations and often do not get the critical skills and exposure to other disciplines via specialized higher education (Paoline & Terrill, 2007). Other existing requirements for police applicants are inadequate as well. Most applicant testing is based on aptitude, physical fitness and psychological assessment.

Aptitude is often the primary factor in entry-level police civil service examinations that concentrate largely on reading comprehension and literacy skills. Few entry-level examinations require previous academic knowledge of policing. As this academic knowledge is not previously required for applicants, there is a stronger reliance for the new police officer to learn this on their own as police academies often do not address policing history, commission findings, changing philosophies, criminology, or criminological theories. These examinations also differ from promotional examinations where reading and literacy aptitude is tested along with specific, but not universal, police practices. The promotional examinations also lack most of the criminological theories often needed to get a better understanding of the people and situations police officers are likely to face. Physical fitness requirements for police applicants vary

amongst agencies and are often required only at the time of hiring. Continual physical fitness programs, as well as academic programs throughout a policing career are essentially non-existent as well. This in part, strengthens the need for this education, at a minimum, before hiring.

Background investigations and factors resulting in prohibition from employment also vary greatly between agencies, which show a lack of uniformity as well within the hiring process in American policing. A conventional measure universally used in predicting police officer behavior is the admittance of a psychological examination as part of the hiring process. However, with the exception of a few examination instruments that show promise, “no test possesses unequivocal research support” to predict police behavior (Lough & Von Treuer, 2013, p. 737). Other factors that have proven to be beneficial to policing ought to be explored and implemented universally in hopes to standardize a level of conduct expected by police officers nationwide.

Existing studies present various viewpoints in support for a college education in policing as well as the need for reform within the field of policing. According to these studies, the inclusion of a college degree requirement for police officers has many benefits that positively affect police officer skills and policing overall. Furthermore, there has been a growing support of a college education by policing supervisors. Roberg and Bonn (2004) surveyed and found that in analyzing 358 city and county police chiefs in jurisdictions that had more than 50,000 residents, 87% of chiefs held bachelors degrees, roughly 47% of chiefs held master’s degrees and nearly of 5% chiefs had law or doctorate degrees. This is significant in that it sets an atmosphere that is supportive of college education to those who want to advance in their career path. Additionally, the support of a college education from the top ranking police officials might

entice those in subordinate ranks to accept and follow a culture of higher education as a benefit in policing. Recent databases that show educational attainment of police officers are virtually non-existent which often thwarts comprehensive studies of this relationship.

Chapter 2: Literature Review

Background and History of College Education and Policing

Hiring police officers with a college education has been a focus of discussion since the need for professional policing was introduced in the early 1900s (Hickman & Reeves, 2006). Prior to and during most of this era, policing requirements in the United States encompassed little to no training, managerial structure or accountability standards (Uchida, 2005). Law enforcement officers were charged with few responsibilities and often used tactics based on brutality rather than reflective judgment and critical thinking. There was little attention given to criminological, sociological or psychological theories that are essential factors in modern-day policing. As these theories further developed and gained more support in criminal justice policymaking, it became essential to integrate them into police officer training, not just the police administrator level. College education provides an insight to these theories that would assist police officers in learning the reasons behind criminality, not just how to combat it.

American policing can be traced back to the times of Colonial America where night watchmen and trusted individuals were charged with the protection of individual settlements from outsiders. These trusted individuals were later formalized as local sheriffs, a position that held the highest authority in enforcing the law. Training and detailed qualifications were often non-existent and representing the interests of the community was the only qualification (Carte, 1973). This system of local sheriffs existed in many areas in the south and west, however was not sustainable in large, densely populated urban areas such as New York, Boston and Philadelphia. These cities started flourishing in economic growth and migration at a record rate compared to the west in the early to mid-1800's. The response to this growth required a

professional and structured form of authority to maintain order, while serving the diverse needs of these cities. By 1845, New York had developed the first organized and structured metropolitan police agency, with Boston and Philadelphia following shortly thereafter in 1854. This structure lacked support for universal requirements, and prerequisite training to become a police officer (Carte, 1973). Although this was a substantial step in professionalizing policing, many challenges shortly followed. Economic depression and high crime rates proved to be an obstacle to these early police organizations. How to handle these societal problems and choose the right person to do so became a political and organizational challenge. “Slave Patrols” in the south often led to the mistrust and questioning of the ability of police officers to be unbiased enforcers of the law, and police officers were often viewed as servants to individual political agendas. These patrols were often thought of as public servants adhering to an organizational structure set on disparate treatment based upon race (Chapman, 2012). Creating a level of professionalism was essential to overcome these perceptions and challenges.

As America grew, so did policing in America and the need to evaluate policing. The industrialization of other cities in the late 1800s and early 1900s as well as the addition of complexities to the criminal justice system prompted researchers such as August Vollmer² to assess and evaluate the need for enhancing the abilities of police officers. He supported the ideologies of a professional police force that included women and minority officers. He also supported several community policing principles such as police officer interaction with disadvantaged children. Vollmer supported education as a key component to equip police officers with a skill set to adapt to the evolving complexities of law enforcement and the criminal justice system as a whole. Although there was much support for Vollmer’s research, his

²August Vollmer (1876-1955) was the first police chief of Berkeley, California and was considered the ‘Father of Law Enforcement’ as a leading figure in advocating for the professionalism of policing.

hypothesized benefits for education in policing were not universally implemented. A disconnect between academia and policing existed which led to the reluctance of accepting Vollmer's recommendations (Carte, 1973). His concept was still studied extensively by scholars, and despite the suggestions of the Wickersham Commission³ in 1929 that all police personnel have a college education, it was not until the late 1950s that a minimal education requirement of a high school diploma, or less, a General Educational Development (GED) certificate was established (Garner & Maxwell, 1999).

The need for police reform has been a concern throughout the 20th century and has often focused on the implementation of formal college education as a requirement for police officers. The support that college educated officers have a better adaptability to the changing needs of society has been widely supported by the President's Commission on Law Enforcement and the Administration of Justice (1967); the National Advisory Commission on Criminal Justice Standards and Goals (1973); and the Sherman and the National Advisory Commission on Higher Education for Police Officers (1978). Twenty years later, local police departments and administrators still portrayed a reluctance to raise educational requirements (Carlan, 2007; Roberg & Bonn, 2004). Growing societal trends show a strong support for college education in policing. In 2000, 24.4% of Americans, age 25 or older reported to have earned a baccalaureate degree (Roberg & Bonn, 2004). In 2010, the percent grew to 29.9% and reached an all-time high in 2015 at 32.5% (Census, 2017). The necessity for police to keep up with society's educational trends is integral for the promotion of professionalism in policing (White & Escobar, 2008). Although American society has raised their education level overall, policing has failed to

³ The Wickersham Commission, also known as the National Commission on Law Observance and Enforcement, was a committee established by President Herbert Hoover in 1929 to survey and make recommendations to the criminal justice system.

maintain their history of requiring a representative force that was composed of traditionally “above-average education” as compared to the rest of society (Roberg & Bonn, 2004). Although studies are lacking, this could lead to a potential cause in the lack of authority given to policing as other professions assume a level of respect and authority based largely on academic achievement. Many police agencies require a minimum number of college credits comparable to obtaining an associate’s degree, however an associate’s degree can be the equivalent to a high school diploma from the 1960s (Roberg & Bonn, 2004).

Criminal justice and law enforcement reform continues to be a high priority facing policy makers. As the need for reform is apparent with the evolving demands of society, so is the need to build a better police force. The professionalization of policing has been vastly supported and often linked to the skills provided by a college education. Public perception and close scrutiny of policing has been commonplace with contemporary technology and widespread media coverage and accessibility. This has been apparent in recent protests, many of which were violent, just moments after the questionable deaths of Eric Garner and Michael Brown were spread through social media. Research has historically supported the need for college-educated officers, as they tend to interact and communicate more effectively than non-college educated officers (Carter & Sapp, 1992; Mayo, 2006; White, 2008). Similarly, existing research posits that college-educated officers receive higher performance ratings than their non-college educated counterparts (Carter, Sapp & Stephens, 1999; Lersch & Kunzman, 2001).

Higher education in policing has been widely researched and researchers continually attempt to define the impact of college education upon police officers (Paoline & Terrill, 2007). Although many studies show a benefit to higher education in policing, they often do not reflect

the changing role and responsibility of a police officer in the modern era, which has substantially more police responsibilities as discussed earlier. Due to this changing nature of police work in recent years, a more current and larger sample could lead to a better understanding of the relationship between policing and college education (Truxillo, Bennett, & Collins, 1998).

Influences on the Use of Force

Many studies have researched the use of force to determine their causes and influences (Bayley & Garofalo, 1989; Binder & Scharf, 1980; Bittner, 1970; Black, 1980; Friedrich, 1977; Fyfe, 1988; Garner, et al., 1996; Jacobs & Britt, 1979; Klinger, 1995; Muir, 1977; Reiss, 1968; Ryberg & Terrill, 2010; Terrill & Mastrofski, 2002; Worden, 1995). The spectrum of influences upon the use and level of force a police officer uses is broad and many studies have attempted to show the impact of these individual influences. For example, individual characteristics of police officers often influence the level of force used. In terms of years of experience, Chapman (2012) reports that those officers who are younger with less experience tend to resort to use force because they do not have skills necessary to identify and use other means to handle dangerous situations. Furthermore, officers with less experience use force more often than those officers of the same given age (Bayley & Garofalo, 1987). Although one might conclude that experience is a factor in controlling force, it is not being ruled out in this study, as this study concentrates primarily on education. On the other hand, other studies report that there is no direct relationship between experience and the levels of force used (McCluskey & Terrill, 2005; Sun & Payne, 2004). The disparities in these findings can be attributed in part to an almost two decade difference in the studies cited, and if significant, promotes the need for this study, as evolving police work can be an influencing variable on the relationship between college education and the use of force.

The majority of use of force studies have found that gender differences do not impact the frequency or type of force used (Kaminski, Digiovanni, & Downs, 2004; McCluskey & Terrill, 2005; McCluskey, Terrill, & Paoline, 2005; Paoline & Terrill, 2007; Sun & Payne, 2004; Terrill & Mastrofski, 2002; Terrill, Leinfelt, & Kwak, 2008). Only a few studies have shown an association between gender and the use of force. Garner, et. al. (1996) found that male police officers are significantly likely to use force and male officers often use higher levels of force (McElvain & Kposowa, 2004). Since 2004, there has been a rise in female representation in policing, and previous studies could be lacking the substantial sample size needed to make relative findings. Additionally, the role and acceptability of female police officers has changed greatly in the past two decades which could lead to a decrease in double-marginality, changing the attitude of female police officers to have to ‘prove themselves’ amongst their male counterparts. The discrepancies in these studies also exist due to different influencing factors studied, methodological differences, and sampling variations. Additionally, these studies often lacked detailing other confounding variables and their impact on both the studies’ independent and dependent variables.

Few studies have shown an impact of the race of an officer upon the force used by that officer. The majority of studies agree that the race of an officer and their use of force have no relationship in frequency or levels used (Friedrich, 1977; Garner et al., 1996; Lawton, 2007; McElvain & Kposowa, 2008; McCluskey et al., 2005; McCluskey & Terrill, 2005; Paoline & Terrill, 2007; Terrill & Mastrofski, 2002; Worden, 1995). Some of these discrepancies exist as many police departments, in attempts to provide the public with a view of racial diversity in policing, often assign minority officers to minority neighborhoods. There is no dispute in

literature that has been published that shows minority neighborhoods have a larger frequency and rate of violent crime. This dynamic can be a simple explanation relating to certain studies that find race, specifically those that show minority officers use more force, as their exposure to higher crime areas are often proportionally higher than white officers.

The Relationship Between Education and Policing Skill Sets

College education and its benefits to policing have been studied for several decades. These studies included the effects of college education upon a broad range of police behaviors within police work. Police officers must have a myriad of special skills as they interact with the public. The skills that are most commonly studied are: the propensity to use force, professionalism, acceptance of diversity, conceptual skills, and communication skills. The responsibilities in policing grew substantially in 2001, after the first major terrorist event that then put police officers at the forefront of combating terrorism. Changes in technology, as well as technological crimes, have also added additional issues in policing, society and crime, not necessarily representative of the past. Policing and police officers are expected to overcome and effectively handle these issues in accordance with the changes in law and also changes in society as well. To compare the current effectiveness of policing to former eras is problematic because expectations and duties of officers have changed drastically. Because of this, longitudinal studies are often challenged with the vast number of changes in law and society that police officers must adapt to. Furthermore, studies often measure these skills collectively by police officer satisfaction ratings and police conduct related lawsuits, which also fluctuate in accordance with societal changes. This adds to the difficulty in analyzing the conduct of police, however researching changes in influencing factors is essential.

Use of Force

One of the most studied police behaviors, the use of force, has been directly linked to an officer's education level. The ability to use force is essential in policing and policing is the largest of the few professions that allow an individual the legal right to restrict the liberties of another by use of physical force. Use of force in policing is one of the most controversial aspects in law enforcement, as it does not allow for the ability to reverse it as in other police actions. Once force is used, the effects are felt by the individual and cannot be taken back by the officer. This is contrary to other police actions where arrest and enforcement of the law by police officers can be overturned by another entity such as the courts. Use of force is often viewed as a negative act that needs to be controlled as situations that require force legitimately are often not praised, nor are the officers who exercise the proper level of force (Gardner, et. al., 1996). Although the public often criticizes the use of force used by a police officer, it is often the same use of force that people look towards the police in hopes that the police will resolve their problem. The appropriate use of force is the expectation of police officers, however the appropriateness can be a reflection of each situation, the scene surroundings, an officer's experience, and as presented in this study, the officer's college education.

One of the most important factors in the use of force is the determination of the justification to use not only force, but also the appropriate level of force. The establishment of the force continuum was an attempt to create a model in which officers can follow, however the decision to use force and how much force, cannot be simply delegated through a policy or guideline. The force continuum was established in an attempt to identify a graduating scale to which physical force can be defined. By using such a scale, departments were able to dictate a

permissible level of force for an officer to use based on the level of force that was used by a suspect. Other factors determining an officer's use of force such as the ability to assess or deescalate a threat, can be directly related to their training. Teaching officers which level of force to use is one goal of police training, however most training methods cannot fully prepare officers on how to act in certain situations, specifically deadly physical force encounters. Proper use of force training should not just include tactical measures, but how to properly assess a threat (Hall, 1996). Although many real-life scenarios can be reenacted in a classroom setting, they are still controlled as the officers' safety is protected. The absence of this factor can show the need for additional and on-the-job training techniques throughout an officer's career.

One aspect of the controversy of the use of force by today's police officers must first be identified. That aspect is to comprehensively become aware of the extent of the issue. Without it, law enforcement is handicapped as to identifying the prevalence of the problem. As of July, 2016, there was no national comprehensive report on the use force by police due to lacking measures (Shane, 2016). The fragmentation and decentralization of American policing often adds to the difficulty in assessing the use of force problem as well as developing strategies to control it. The use of force has been a political interest since the era of prohibition when the Wickersham Commission provided one of the first reports indicating that there was considerable evidence of police brutality (Shane, 2016). Their report explained their findings that the use of physical force was widespread in obtaining involuntary confessions or admissions (Wickersham Commission, 1931). In 1947, the President's Committee on Civil Rights mirrored the Wickersham Commission's findings in that police brutality was still a problem, however they did acknowledge that police departments had started to take steps to address it (Shane, 2016). The President's Commission on Law Enforcement and Administration of Justice (1967) made a

conclusion that still holds true today. They recognized that police brutality was an issue, however their findings were based on a small number of complaints that did not necessarily accurately portray the extent of the total problem. Public perception of the use of force problem in policing is largely influenced by these highly publicized cases of excessive force incidents rather than a comparison to the total incidents where force was used.

The first step in addressing the issue of the use of force is determining the extent to which it is an issue. As of July 2016, there was no comprehensive national understanding of police use of force because there were lacking measures to track it (Shane, 2011). The majority of use of force studies are based on research by the National Institute of Justice or the Bureau of Justice Statistics and often involve a few cities that do not fully represent policing nationwide (Shane, 2016). Data is also collected based on different standards throughout the 18,000+ law enforcement agencies throughout the nation and the lack of standardized collection practices has led to a misunderstanding of the use of force in policing nationwide (Bittner, 1970). Furthermore, many use of force studies concentrate largely on demographic context such as race and gender, as race is a socially inflammatory aspect largely portrayed in the media (Shane, 2016). A concentration on broader aspects of police use of force ought to be prioritized to fully understand its extent and nature.

The Washington Post in their 'Fatal Force Database' conducted a notable analysis in the use of force by the police in 2016 (Fatal Force Database, 2016). One of the most recent reports was from the time period of January 2, 2015 to April 4, 2016 measuring use of lethal force by police officers in every state including the District of Columbia. Their report analyzed 1,254 incidents of lethal force used by the police. The findings were that the offender's mean age was

36.5 and modal age was 29. Most offenders (50.3%) were under the age of 35 and most offenders did not display signs of having a mental illness (74.2%). The race of the offenders that were killed by the police were 66.2% White and the gender was mostly male (95.5%). These statistics are alarming, and can leave any reader with the presumption that use of force, specifically deadly physical force, is an issue that must be addressed. The context of this study was not without methodological issues. The most important is the lack of data concerning incidents where lethal force was not used. This alone creates a one-sided approach in attempting to analyze if use of force is as much of a concern as it is often perceived. This report also lacked the environmental factors such as the offender's resistance, threat level or immediate situation. Furthermore, were these 1,254 fatal incidents justified as per an independent reviewing body such as a Grand Jury? If one was to assume that each of the 1,254 fatalities were fully justifiable and necessary under the law, should greater concern be directed towards the violent situations encountered by police rather than the portrayal of police officers as the perpetrators of such violence?

In reviewing other studies, we are able to see a somewhat better picture of police use of force. Eith & Durose, (2011) reported that in 2008, the estimated rate of encounters with police deadly physical force was at a rate of one in 31,898 encounters. This represented a 0.003135% chance of being killed by the police in an encounter. The number of public encounters with the police accounted for the aggregate total, assuming that each encounter had the potential for deadly physical force. They further analyzed their data through the US Census to determine that the rate of fatal shootings by police per one million people is White (249.2) and Black (727.2). These findings portray a disparity in the racial breakdown from The Washington Post's study five years earlier that showed that the majority of people killed by the police were White. This

disparity represents the common misrepresentation of police excessive force statistics as it leaves out essential factors such as legality, necessity and/or justifiableness.

Deadly physical force, or lethal force by the police, represents an extreme example on the spectrum in which police use force. Although it is a concern, the broader concept of excessive force by police has been a concern for researchers, law enforcement, communities and policy-makers for many decades. One of the major issues is first defining the boundary between what is considered reasonable force versus what can be deemed excessive. It is commonly agreed by researchers that the vast majority of interactions between the police and the public are peaceful and void of force, and the ability for police to use force is necessary. Therefore, the concentration of eliminating the use of force by police is not a subject of concern, rather the reasonableness of the use of force.

The United States Supreme Court has held that an objective reasonableness standard should apply to instances where police officers use force. The concept of reasonableness however is often vastly subjective as certain situations can be difficult to standardize what level of force ought to be used. This adds to the complication of reporting measures of the use of force as well as the determination if the use of force was excessive. The landmark case of *Graham v. Connor*, (1989) concluded that an “objective reasonableness” standard is based on “the perspective of a reasonable officer on the scene, rather than with the 20/20 vision of hindsight.” Critics of the *Graham* decision argue that the Court has left the police with a great amount of discretion, leaving the local police agencies and law makers to address the issue of excessive force. This has shown to be a disconnect between the community confidence in the legitimacy of police being overseen by the Courts and has often resulted in less community

support of the police and assistance to the police in investigations (Alpert & Dunham, 2010).

The concept of what is defined, and ultimately measured, as excessive force has also been a subject of debate.

As the Supreme Court had set the standard of “objective reasonableness,” this standard can be difficult to measure (Alpert & Dunham, 2010). Many police departments, in response to *Graham v. Connor*, established a force continuum that categorized different levels of force based on escalation levels. This categorization enabled a comparison between the use of force by the suspect and the reacting force by the officer (National Institute of Justice, 2018). The continuum also specified what level of force is to be used by an officer based on what force was presented by a suspect. This scale was supported as it allowed for a proportional measurement of force in that police officer excessive force can be defined as using a far more extreme level than used by a suspect (Police Executive Research Forum, PERF).

As the use of force is often generalized as a negative action by police officers, it is often necessary (Alpert & Dunham, 2010). The concept of excessive force however ought to be the topic of analysis. This also is problematic, as excessive force does not have a universal definitive standard. More so, defining excessive force void of situational characteristics, can mislead statistical reports. Although PERF contends that the use of the force continuum is a good measure in defining excessive force levels by the police, they believe it is outdated and officers should be better prepared to diffuse situations that might require force (Police Executive Research Forum, PERF). Scholars have also defined excessive force in other ways. On such example is Albert Reiss, Professor of Sociology at Yale University. Reiss contends that force is deemed excessive when a civilian has not physically resisted an arrest, or force is used when a

suspect is already in custody (Alpert & Dunham, 2010). The lack of situational context in this definition is a prime example of how excessive force can be miscalculated. By Reiss's definition, an officer that is further required to restrain an individual who is in custody, such as in a case where the suspect is causing harm to themselves, can be deemed as having used excessive force. Other scholars have defined excessive force as multiple strikes by an officer, regardless of the suspect's disposition. For example, if an officer repeatedly strikes a suspect while ordering the suspect to kneel and that suspect does not, how can one measure justifiable force by a definition void of circumstances? Police encounters when force is used will be constantly analyzed, however a proper measure ought to be used to fully identify the problem.

Variables and characteristics of police officers and their propensity to use force is only one step in controlling it. The decision to use force, the level of force and when to stop using force is influenced by the knowledge and skills of each individual police officer. The use of force is a necessary element in policing and the impact of the college education of a police officer has been vastly studied showing a relationship to the force used by a police officer. College educated officers use less force less often than their less educated counter parts (Aamodt, 2004; McElvain & Kposowa, 2008; Paoline & Terrill, 2007; Ryberg & Terrill, 2010; Telep, 2011; Terrill & Mastrofski, 2002). More so, when faced with the option of deadly physical force, college educated officers are less likely to use deadly physical force or fire their weapon in an encounter (Fyfe, 1988; McElvain & Kposowa, 2008; Paoline & Terrill, 2007; Terrill & Mastrofski, 2002). McElvain & Kposowa (2008) report that college educated officers were 30% less likely to fire their weapon in an encounter than their non-college educated counterparts.

Researchers have deeper explored this relationship and sought to explain the reasons associated with college-educated officers using less force. Training and education are often thought to be effective measures to decrease police abuse (Weisburd, Greenspan, Hamilton, Williams & Bryant, 2000). Being able to properly assess a situation can benefit any problem-solving approach to that situation. Often, a college education adds to the knowledge of situations that police officers encounter by providing the officer with macro explanations of the situation. This additional information can include, but is not limited to, cultural differences or physiological differences that can ‘paint a better picture’ for an officer before making a decision to use force. Engaging in reflective judgment and approaching situations with an open-mind are also experiences in education that can reflect on an officer’s interaction with the public (Carter & Sapp, 1990). Higher educated officers approach volatile situations with better communication and problem solving skills likely to support these findings (Holbert & Rose, 2004; Kelly, 1998).

Professionalism

Value systems in any profession that interacts with the public are essential. Given the vast amount of discretion granted to police officers, values, ethics and moral reasoning are foundational principles of police work. The expectation of professionalism in policing, is in part, a key factor that promotes police authority as well as trust and respect towards police officers. The concept and importance of police professionalism was addressed by the federal government as early as the 1930s. During that time, President Herbert Hoover commissioned an eleven member group headed by former Attorney General George Wickersham to study the criminal justice system and to develop polices, both public and policing, with the goal of professionalizing policing and thwarting misconduct (Garner, 1999). August Vollmer, who

wrote portions of the findings, commonly known as the Wickersham Report (released in 1931), detailed how policing of the era was deficient in professionalism when dealing with national prohibition. Furthermore, the report recommended that college education ought to be required in every police officer background to assist them with the evolution of society, law and policing. Professionalism and ethical behavior can be subjective qualities that are difficult to measure, however studies have often used citizen satisfaction surveys to operationalize these two aspects of police officers. College educated officers have more humanistic values (Pascarella & Terenzini, 2005) and place higher value on ethical behavior (Carter & Sapp, 1989; Goldstein, 1977; Lynch, 1976; Shernock, 1992; Tyre & Braunstein, 1992). College affords the opportunity for police officers to have more appreciation of the role of police in society (Telep, 2011), leading towards a higher ethical standard for their conduct. Furthermore, college educated officers are also less dogmatic and more open-minded (Barry, 1978; Parker, Donnelly, Gerwitz, Marcus & Kowalewski, 1976; Roberg, 1978).

Police Lawsuits

Police officer lawsuits, as well as most civil liability lawsuits can be viewed from two different perspectives. The first, the ability to ‘right a wrong’ by awarding compensation for negligent or illegal behavior can assuage someone who was victimized. The second perspective can seek to, and enforce change in society as well as add a layer of accountability towards the actions of individuals. In policing, as well as most public organizations, lawsuits are an essential component in shaping policing policy.

It wasn’t until the mid-to-late 1960’s that the government acknowledged the growing problems with police misconduct roughly 30 years after the Wickersham Commission. Most

programs developed in this time frame are still used in addressing this issue. The Police Executive Research Forum was charged with the task of researching policing policies and statistics to offer guidance to police departments nationwide in hopes of bettering policing. Lawsuits against police officers have been studied by the Police Executive Research Forum (PERF) that reported an alarming rate of one lawsuit per thirty officers annually in the United States (Geller & Scott, 1992). Silver (1991) reported a rate of over 30,000 civil liability lawsuits against police officers annually in New York City alone. The New York City Police Department has spent nearly one billion dollars in just over decade to settle lawsuit claims against them, while many other police departments across the nation average tens of millions of dollars per year (Goldman, 2012). As a result of these lawsuits, the costs of liability insurance and litigation expenses of police departments are on the rise, essentially redirecting needed funds for effective policing. If factors that lead to misconduct can be identified, addressed, and minimized, there would be a subsequent financial benefit to the police, the community, and the criminal justice system overall.

Interaction with conflict and situations that could lead to civil liability is commonplace in policing. The ability to sue police in America along with the popularity to do so has caused an increased filing of lawsuits against police. The exposure to legal liabilities have left police agencies committed to allocating substantial resources to investigate, litigate and settle a large number of liability lawsuits. Inarguably, victims of police misconduct deserve compensation, however such compensation payouts widen the pool of victims by using public funds to settle claims, hence transferring financial liabilities upon the general public (Otu, 2004). The settlement of claims has also prompted a cycle of lawsuits against police that are growing. Public perception of policing and the legal system can be influenced by police misconduct. Even

when police misconduct is not proven in court, the stigma attached to police officers based on the actions of a few wrong-doers leads to an overgeneralization that police misconduct is wide spread. Although many cases are not without merit, this overgeneralization questions the reputation of police behavior (Del Carmen, 1993).

Lawsuits based on racial and gender discrimination comprised approximately 30 percent of all police related lawsuits (Archbold, Lytle, Weatherall, Romero, & Bauman, 2006). These findings were based on a study that used data from open sources and analyzed a representative sample of three major cities, Los Angeles, New York and Chicago from 1993-2003 (Archbold, et al., 2006). The existence of these lawsuits as well as the ease of dissemination of their dispositions, has led many to mistrust the police further, regardless of whether they were aware of the actual facts contained within the lawsuit. This was seen in the Los Angeles riots following the acquittal of the officers involved in the Rodney King case as even then President George H.W. Bush publically stated that it was hard to understand the jury's verdict (Fiske, 1996). Other examples include the widely publicized case of Eric Garner and Michael Brown, which involved African American men killed by police officers who ultimately were not criminally indicted and resulted in community protests.

Diversity / Acceptance

Minority relations with policing have been a contentious and challenging problem for law enforcement since its inception. The history of policing in America, with a major component of "slave patrols" as a major influence on American policing in the South, has impacted the organizational structure of policing today. White male predominant police departments are the norm, whereas police use of force rates have a higher occurrence in minority, rather than white

neighborhoods (Chapman, 2012). This often is the basis that leads to many challenges regarding racial tensions in policing. One of the avenues to overcome this challenging relationship is to explore minority based recruiting to promote more diversity within policing. Although this is the agenda in many communities, other factors that relate to minority relations have had an effect in policing, such as effective community policing programs.

A college education has been showed to have a positive influence in the problems associated with race and policing in America. Studies have shown that college educated officers have a greater acceptance of minorities and diversity than their non-college educated counterparts and have showed less involvement in discriminatory behavior (Astin, 1977; Carter & Sapp, 1992; Hawley, 1998; Weiner, 1976). College education provides greater social acceptance and reductions in racial prejudice (Astin, 1977). The lack of diversity common to many areas in America has impacted the level of understanding of other cultures and races. The re-socialization process experienced in college brings new experiences, friends and encounters that create a more cognizant view and concern of others (Feldman & Newcomb, 1994). This socialization process often leads towards learning and accepting those of other races, cultures, and in the new millennium, lifestyles. Many recent Court rulings are supporting the legality of same sex marriages and social movements of gender identity reforms. As such, exposure to these new norms is integral for police officers to adapt to the growing and changing needs of society. College educated officers have more tolerance and acceptance for people with different and diverse attitudes and lifestyles (Astin, 1977; Carter & Sapp, 1990; Carter & Sapp, 1992; Goldstein, 1977; Smith, Locke, & Fenster, 1970; Vodicka, 1994).

Satisfaction Ratings / Complaints

With the contemporary focus on community policing, it is integral that police-community relations are held to the highest regard. Police and community relations have recently been strained, in part with the widespread use of social media promoting anti-police sentiment. Satisfaction ratings of police officers by police supervisors and the public are higher for police officers that are college educated compared to those who do not have a college education (Cascio, 1977; Cohen & Chaiken, 1973; Kappeler, Sapp, & Carter, 1992). Although this reflects, in part on racial relations, other issues often are cause for complaints against policing. Those issues include use of excessive force, unreasonable or illegal searches and seizures, along with perceived disparate and unsatisfactory treatment. Albeit the broad spectrum of the reasons associated with civilian complaints, college educated officers receive fewer overall citizen complaints than their non-college educated counterparts (Birzer, 2003; Carter & Sapp, 1989; Carter & Sapp, 1992; Cascio, 1977; Cohen & Chaiken, 1973; Finnegan, 1976; Lersch & Kunzman, 2001; Manis & Hassell, 2008; Mayo, 2006; Palombo, 1995; Ryberg & Terrill, 2010; Sanderson, 1977; Shernock, 1992; Trojanowicz & Nicholson, 1976; Tyre & Braunstein, 1992; White & Escobar, 2008; Wilson, 1999). College educated officers have a propensity to use less coercion in dealing with the public, an attribute that is often linked with higher satisfaction ratings from the public (Paoline & Terrill, 2007). A specific study by Sanderson (1977) reported that police officers that have obtained a four-year college education received civilian complaints at a rate of approximately one-third of those who did not have a college degree.

Community Policing

Community policing, also commonly referred to as community-oriented policing, is a

philosophy and strategy of policing that requires police departments to establish ties with communities to collaborate to identify and solve problems. Community policing prioritizes a different strategy of policing than what is commonly known as traditional policing, however it does not eliminate the need for reactive or other types of policing strategies. Although an instrumental impact in policing overall, the community policing strategy has redefined the role of police officers as collaborative partners with the public, not just peacekeepers. Community policing differs from traditional policing strategies such as ‘law-enforcer’ and requires a greater skill set from police officers not necessarily seen in previous eras of policing. That skill set largely requires a greater facility for innovation and complexities by the line-level police officer (Carter & Sapp, 1992). The requirements for successful community policing differs from other styles of policing in that a large responsibility is placed upon the police officer to identify community problems. This differs from strategies such as zero-tolerance policing or some designs of problem-oriented policing in that data collected from police reports are often the driving factors in police response and policy. In contrast, community policing relies on a partnership between the people and the police. This relationship is necessary to maintain a strong and open line of communication between the community and the police to address current issues faced by both. Skills such as critical thinking, open-mindedness, reflective judgment, cultural sensitivity and the ability to effectively communicate are essential to effectively interact with the public (Roberg & Bonn, 2004). Community policing has become more complex since its adoption, with variations existing in different models.

The philosophy of community policing can be traced back to Colonial America when certain members of different settlements (counties) were elected as the chief law enforcement officer of the area. This position often required no training or knowledge about the law. A

familiarity with local norms and community concerns was often the only prerequisites.⁴ This concept was a precursor in today's community policing philosophy in that, by knowing the needs specific to a community, a law enforcement officer is most effective in their role.

The 1800s gave birth to professional and organized policing models. One of the first developed in Britain was met with opposition, as people were suspicious of a large and possibly armed police force (Lentz & Chaires, 2007). A professional style of policing was developed by Sir Robert Peel, Home Secretary, in 1822. Several years later in 1829, Peel established a full-time organized police force in London known as the Metropolitan Police. Some of the nine principles established⁵ by Peel showed a foundational philosophy of policing that later reflected in modern-day community policing principles. Of Peel's nine principles, one-third speak to the importance of community policing. The first, "To recognize always that the power of the police to fulfill their functions and duties is dependent on public approval of their existence, actions and behavior, and on their ability to secure and maintain public respect." The second, "To recognize always that to secure and maintain the respect and approval of the public means also the securing of the willing cooperation of the public in the task of securing observance of laws." And lastly, "To maintain at all times a relationship with the public that gives reality to the historic tradition that the police are the public and that the public are the police, the police being only members of the public who are paid to give full-time attention to duties which are incumbent on every citizen in the interests of community welfare and existence" (The National Archives, Corporation of London Guildhall Library). Recognizing the importance and influence of the public to establish police authority and effectiveness in society was a focus by Peel that was extensively studied and

⁴ In many cases, the local law enforcement officer often also reflected the political goals of elected officials that later fostered organizational corruption in policing.

⁵ Although debates exist that Robert Peel himself actually wrote the commonly referred to as "The Nine Peelian Principles," these principles were adopted and instructed to the members of the Metropolitan Police Force.

supported nearly 150 years later.

In the early 20th century, technology greatly altered the course of policing with the rise of telecommunications and automobiles. Policing benefited greatly as they developed more of an omnipresence and were able to serve with better efficiency (Kelling & Wycoff, 2002). With the rapid growth of American communities throughout the century, the need for efficient and effective policing strategies grew and the reliance on reactive policing became widespread. Reactive policing was sought after as an efficient mean of responding to citizens' requests for service and reported emergencies. Global position systems and computer-aided dispatching became common in many police agencies that promoted better response times and efficiency of service when responding to calls.

Though the reactive policing strategy has greatly benefitted modern policing, it is not lacking criticism. When a department relies largely on reactive policing strategies, they often limit citizens' contact with police. Often, exposure to the police is limited to having exposure as a crime victim or offender. A victim's interaction with police can be largely based on the solvability of their crime. Solvability factors that are beyond an officer's control can cause a case to go unsolved, hence hindering a victim's satisfaction or confidence in the police. These factors can include a lack of evidence, prosecutors' decision not to prosecute, etc., which an officer has little to no influence upon. Similarly, offenders who have contact with the police often view police as the party responsible for their arrest. This is contrary to reality in that officers initiate arrests based off of a criminal complaint, supporting evidence or court order. The standard to which an officer arrests a suspect is based on probable cause, a burden that is far less than what is required for a conviction in court. When an offender is arrested and processed

through the criminal justice system based on a police officer's assumption of probable cause, and is later found not guilty, a lack of faith in police competence, judgment, knowledge of the law, fairness, or professionalism can easily develop. This interaction is similar in another situation where citizen and police interaction is further limited in reactive based policing. Citizens call upon the police for assistance with medical emergencies, fires, car accidents, etc. Most of these 'services' that police are called upon to address are often not fully the responsibility of the police. Policing often relies on ancillary services in the community and when those services fail, it is often the police who are blamed as they were the initial contact in the complaint. These services also extend to the many social services that police refer cases to, not limited to just housing issues, child and adult protective services, and mental health referral services. The reputation of the local police officer assisting citizens is often based on the effectiveness, or lack thereof, of other governmental services.

Lastly, exposure to the police via media reports often increases the level of misunderstanding of the police profession and provides some with the only basis to judge policing (Bain, et al., 2014). Although reactive police can be cost effective (Bain, et al., 2014) other avenues need to be explored to better serve the public. Additionally, bridging the gap between the roles of a police officer versus the perceived roles was one of the key aspects in police reform.

As the need for police reform grew in the late 1960s and early 1970s, the philosophy of community policing was revisited with various studies and experiments. In Kansas City (1972), an experiment was conducted that largely focused on the effectiveness of routine patrol upon crime rates. The experiment revealed that routine patrol in marked police vehicles did not

significantly impact crime rates or the public's fear of crime (Kelling, 1974). The implications were not to eliminate routine patrol preventative strategies, but to explore more effective strategies to reduce crime as well as the public's fear of crime (Kelling, 1974).

Shortly thereafter, a landmark study by the Police Foundation that built upon the Kansas City experiment, was directed towards studying the impact of police foot patrol on crime, rather than the presence of marked vehicles. In 1978, the Newark Foot Patrol Experiment sought to find the effects of maximizing the number of police foot patrols within the City of Newark, New Jersey. Researchers recorded the differences not only in reported crime and victimization rates, but citizen satisfaction ratings of the police as well as the public's fear of crime (The Police Foundation, 1981). The findings of the study revealed that foot patrol in fact did not have an impact on crime or victimization, other than less thefts from residences when the residents were not at home. These findings were not substantial enough to concentrate on deploying foot patrol units, however one particular finding did support the need for foot patrol officers. The Newark Foot Patrol Experiment did conclude that citizens' fear of crime decreased with the presence of foot patrol officers. The fear of crime, although more difficult to analyze, is often a more important issue than actual crime itself (Greer & Reiner, 2012). Public confidence in policing is impacted more by neighborhood stability and the fundamental role of police in society when compared to actual individual crime statistics (Jackson, Bradford, Hohl, & Farrall, 2009). This finding was an important factor in the future development of community policing as the fear of crime was controlled largely by the presence of police officers on foot. This gave rise to the idea that officers ought to be interacting with the public on a greater and more intimate capacity than just routine patrol or reactive policing.

Foot patrols and the concept of the fear of crime was further explored by Wilson and Kelling's 1982 study of 'Broken Windows' that became a widely used basis for preventative policing in the early 1980's. This study primarily addressed the concept that if smaller neighborhood concerns were not addressed, those concerns would grow into bigger problems. The analogy of an unaddressed broken window leading to a crime-ridden neighborhood was used to stress the importance of the maintenance of order as a precursor to preventing criminal activity. This study also redirected the priority of the police role as law-enforcers to include being able to address the concerns that are associated with, and lead to the causes of crime. Another aspect that was brought into the limelight of policing by the Broken Windows article, expanding on the Newark Foot Patrol Experiment, was the concept of public fear.

Public fear can lead towards public discourse (Wilson & Kelling, 1982), therefore another responsibility of police officers is to recognize and address those situations that can cause such fear and lack of social cohesion. Public discourse and the lack of social cohesion have been associated with neighborhood deterioration and deviant behavior (Gottfredson & Hirschi, 1990). To help alleviate this, community policing was further explored and received nationwide support in the 1990s. The Clinton Administration promoted community policing with the 1994 Violent Crime Control and Law Enforcement Act, which established the Office of Community Oriented Policing Services (COPS) within the Justice Department (James, 2010). The Office of Community Oriented Policing was charged with the promotion of community policing programs nationwide along with providing funding.

Community policing bears many variations and is not without criticism. Most community policing programs focus on officers' relationships with the community. These

relationships are fostered through the ‘beat patrol,’ which involves the daily and intimate interactions between police officers and the communities in which they serve. The face-to-face interactions are two-fold, in that the purpose in part is to humanize the police officer to the community and vice-versa. Additionally, enabling patrol officers as the front line in information gathering as to the specific problems that affect the community is essential, as this information is then shared throughout the department. Partnerships with local community centers, schools, religious institutions and neighborhood watch programs also help to foster the flow of information to the police department (James, 2010).

Community policing’s focus also differs from the focus of traditional policing. The goal of community policing, although having a focus on justice and order, has a primary goal to collaborate with the public to maintain a safe and orderly social environment (Mastrofski & Warden, 1995). Traditional patrol, or ‘beat’ officers prioritized gathering information in the form of evidence to solve crimes as quickly as possible, whereas, in the era of community policing, officers seek to gather information from the community in efforts to prevent crime and maintain order. The former often served as a quick fix and addition to the revolving door in the criminal justice system (Travis, 2008). Community policing influences the modern-day police officer to change their approach from traditional reactive policing type strategies. It also influences organizational restructuring as police department policies in the community policing era, stipulate better problem solving skills and more discretion to line-level police officers (Cordner, 2010).

Several other challenges are faced by police who have or attempted to have adopt community-policing principles. One such challenge is defining the definition of ‘community.’

As diversity prevails in most crime-ridden neighborhoods across the nation, sub-communities often express different interests and needs that often overwhelm policing resources. To effectively address widespread concerns can be impractical and can lead towards alienation of some communities over other larger ones. This can be counter-intuitive and force police departments to neglect the needs of smaller sub-communities. Most current police practices concentrate on resource allocation. High demand areas receive the most police resources in time and attention, whereas those with less crime and demand, receive less attention (Bain, et al., 2014). This reality leads to alienation of some communities and stigmatizes others, as more police in a particular area often equates to more arrests, based on opportunity alone. Additionally, a widespread measurement of police productiveness became a 'numbers game' where more summonses were viewed as 'better policing'. This strategy created more gaps between the police and the community, as the larger picture of service and community relations was not prioritized.

Addressing community concerns is a prime factor in the community-police relationship and the willingness of the community to partner with law enforcement without fear of the police is essential. The lack of community support for community policing programs can cause negative feelings towards the community by the police (Shernock, 1988) in part because policing must rely on community support in order for these programs to be fully productive. This often requires a voluntary commitment of time and resources from the community and the police to work together that cannot be evaluated as easily as crime statistics. The lack of involvement and commitment from the community can be a source of animosity by the police, which might manifest itself in friction from the police towards the community.

Despite the abundance of new programs studied and implemented in policing, addressing the concerns of effective training of police officers to implement new programs have often been overlooked. To adapt to these changes and learn skills that are need for successful implementation of these programs required and still require, many attributes that are associated with college-educated police officers such as experience in learning, especially complex academic principles.

The complexities of community police work / community oriented policing, encompass dealing with the diverse societal norms, varying public perceptions, and evolving community needs as well as changing philosophies in policing. Furthermore, community policing philosophies posit that officers need to embrace collaboration with citizens. College educated officers have been best suited to fill that requirement (Carter & Sapp, 1992; Paoline & Terrill, 2007; Sherwood, 2000). The challenges faced by communities not only differ between communities, they often change with time. To keep current with these changes, officers must continue to learn from communities as well as offer insight to the community on behalf of the role of the police in community policing. As many new variations of community policing are being explored, the police officer is often the main component in their implementation and responsible party for the program's effectiveness. Collaborative policing philosophies often require problem-solving skills that are derived from higher education (Miller & Fry, 1976; Roberg & Bonn, 2004; Regoli, 1976).

Conceptual Skills

Conceptual skills are not just a key component of other factors used to assess police officer skill sets, they are a foundational skill set that has a snowball effect in most aspects of

policing. The complexities of contemporary policing require better problem solving abilities that are more abundant in college-educated officers (Worden, 1990). More so, conceptual and managerial skills of college-educated officers surpass those officers lacking such education (Carlan, 2007). College educated officers possess better critical thinking skills than less educated officers (Pascarella & Terenzini, 1991, 2005; White & Escobar, 2008). These skills, as addressed earlier, are necessary in the implementation of new policing programs and adaptation to the changes in society. Lastly, college educated officers show better reflective judgment skills over their less educated colleagues (Pascarella & Terenzini, 1991, 2005).

Communication Skills

College educated officers have been reported to have a greater likelihood of better performance in the police academy (Lester, 1979; Sanderson 1977) as well as a greater likelihood of attaining promotions (Cohen & Chaiken, 1972; Sanderson, 1977). Researchers agree that college educated officers have greater success in police academies and chances of promotions due largely in part to the fact that college-educated officers show better communication skills (Pascarella & Terenzini, 1991, 2005; Smith & Aamodt, 1997); both verbally (Carter & Sapp, 1989; Carter & Sapp, 1992; Mayo, 2006; Sterling, 1974; Vodicka, 1994; White & Escobar, 2008; Worden, 1990) and in writing (Carter & Sapp, 1992; Smith & Aamodt, 1997; Vodicka, 1994) than non-college educated officers. The communication skills of a police officer are essential in interacting with the public. As many avenues have led to crime prevention and community-based avenues of policing, a police officer is expected to be a problem solver as well as social worker (Black, 1980). Lacking in good communication skills can undoubtedly hinder that role.

Complexity of Law Enforcement

The complexity of law causes it to evolve on a regular basis and officers ought to be equipped with the tools to understand and adapt to these changes. Complexities include, but are not limited to evolving police philosophies, technology advances and changing community needs. A college education affords police officers with the increasing capabilities to handle these complexities, as compared to their less-educated counterparts (Carter & Sapp, 1992; Hawley, 1998; Lussier, 2004; Smith & Aamodt, 1997; White, 2008; White & Escobar, 2008). A study by Carlan (2007) reported that 92 percent of college-educated police officers perceived that their criminal justice degree afforded them a reasonable level of knowledge and understanding of the law as well as 83% reported a better understanding of the criminal justice system.

Chapter 3: Theoretical Framework

Several criminological theories are often used as a foundation when researching policing. The Differential Association Theory is one of the best suited when addressing police behavior based on current police training techniques. Policing subculture has been a topic of research that has over time gained notoriety. The subculture of policing tends to be rigidly structured, hetero-normative, and hyper-masculine. It has been traditionally shown that police officers, like others, develop their motivations largely from learning from their colleagues and surroundings. The traditional learning methods in policing, specifically a large reliance on field-training are not often suitable because this avenue of learning, while potentially beneficial, is not necessarily balanced with the theories and academic learning that support more efficient and effective police techniques and ideologies. Field Training Police Officers often overwhelms the overall training a police officer receives and police actions can often be a product of what is learned in this atmosphere rather than academic or academy training. Additionally, organizational deviance, which is developed through employee socialization, is another factor affecting contemporary policing nationwide. Because of the lack of standardization of police training, often department's policies dictate police action. Adherence or lack of adherence to those policies is an essential factor in controlling police behavior. The policies and practices learned in field training and employee socialization often can often be contrary as to the policies and practices established by police management. Police training can be often corrupted as officers tend to follow the lead of other officers or imitate what has been traditionally been done in the past.

Differential Association Theory

A general social-psychological theory that addresses an explanation for deviant and criminal behavior is Differential Association Theory. Introduced in 1939, then revised in 1947,

Edwin Sutherland attempted to explain criminal and deviant behavior regardless of the presence of other factors previously outlined in other criminology theories. This theory also applies broadly to the cognitive process that takes place in learning behavior by observation, expanding on traditional behavioral theories. Sutherland was instrumental in bringing forward the impact of sociology in the study of criminology. Differential Association Theory has since been subjected to theoretical refinements, empirical research and adjustments to provide policy and program applications.

In order to understand the impact of Differential Association Theory, it is important to first understand the principles behind Social Learning Theory. Some of the foundational principles of Social Learning Theory was first introduced in the 1940s by B.F. Skinner who posited that operant conditioning and echoic responses were a form of development and learning within the family structure (Skinner, 1947). Even though he denied in his research that imitation was a key component of learning, his behaviorist theories help give rise to Social Learning Theory.

Building on Skinner's findings, Albert Bandura studied learning behaviors that were a result of interpersonal relationships. His focus was on behaviors that could not necessarily be explained by other theories or existing rudimentary social learning studies. One of Bandura's famous experiments, collectively known as the *Bobo Doll Experiments* (1961) intended on studying the effects of social aggression, specifically if aggression can be acquired by observation and imitation. The study was aimed at testing 36 boys and 36 girls in situations where they were exposed to aggression to test if imitation occurred. The findings supported what later was known to be termed Bandura's Social Learning Theory (1977). Those findings

confirmed that children learn behavior from their social environment. Specifically, aggression is imitated when one was exposed to aggression, controlling for other factors such as previous aggression traits or characteristics.

This was an important and impactful finding for the Social Learning Theory in that it created a baseline for the key tenets as described by Bandura (1971), which stated that learning was not a purely behavioral concept, rather it is a cognitive process that takes place in, and is also controlled by, social context. Learning is also a result of not just observing behaviors, but also observing the consequences of those behaviors. Additionally, learning is often influenced by analyzing information learned from others' behaviors and making decisions based on the performance of such behaviors. Lastly, reinforcement, although not fully responsible for learning, does play a role in the cognitive process in which one learns.

These tenants, along with the important other findings of the Social Learning Theory gave rise to a multitude of theories intent on studying specific behaviors that are learned through one's environment. One such theory is Akers' Social Learning Theory of Crime, which posits that criminal behavior is learned through socialization. Although an important theory to consider when addressing police behavior as often the definitions between criminal and deviant behavior can have a fine line. The Differential Association Theory developed by Sutherland focused on deviant behavior, however it can help to explain police misconduct, a form of deviant behavior, past and present.

Differential Association Theory was developed through a systematic study influenced by the Chicago School of Sociologists. Sutherland's major influences were from three major developments in criminology. The first was from the studies of Shaw and McKay (1929) who

found that delinquency rates decrease as one moves away from inner cities, rates of delinquency were constant over generations despite ethnic composition turnover and social disorganizations explained delinquency rates primarily within inner cities. Sutherland also studied the work of Sellin (1938), which detailed that crime is a result of the conflict in competing cultures in modern societies. This ideology of socialization has become a key element in Differential Association Theory. Lastly, through his own work, Sutherland concluded that not everyone has the ability to become a professional thief and that one must be accepted into a group of thieves.

Sutherland's theory was finalized in the fourth revision of his book, *Principles of Criminology*, and separated into nine propositions consisting of three interrelated concepts. The first, normative (culture) conflict states how a segmented society has conflicts over fragmented norms and values. Simply stated, certain groups justify violations of rules amidst certain circumstances, whereas others do not. The situation of normative conflict in contemporary society is a key element resulting in high crime rates contrary to primitive homogenous societies which have shown to have low crime rates. Furthermore, conflict is seen in society when the parent culture supports a political structure in the formation of laws. An inherent conflict is set in that the less influential group is forced to subscribe to a specific set of regulations.

The second concept in Sutherland's theory is the process of differential association that affects the micro-level individual in that criminal and deviant behavior is learned. This learning process is at its most substantive state when observations and reinforcements of behavior are within small intimate groups. The learned behavior consists of two aspects. The first is the attainment of certain skill sets that are distinct to only certain individuals in society. The second is the observed, or learned rationalizations, justifications and attitudes towards behaviors.

Defining behaviors and attitudes are crucial in this aspect. When an individual learns an excess of definitions that are favorable to deviant behavior over those that are considered unfavorable, deviant acts are likely to occur (Sutherland, 1947). Furthermore, other factors associated with the nature of the learned behavior impacts the likelihood one will adapt to such behavior. Such factors include the origin, intensity, duration, and frequency.

Lastly, the rate of crime or deviance is determined by an organization's acceptance of such behaviors. This process of differential social organization refers to the propensity of deviant behavior within an organization when such behaviors are supported by the members overall. Conversely, organizational behaviors can support definitions contrary to deviant behavior supporting an atmosphere of anti-criminal behavior. Such deviance can vary amongst organizations, as well as the type of deviance. Differential social organization relates closely to differential association, and addresses the broader level of the organization structure itself as a consequence of its member's deviant influences. These deviant influences are often at the forefront in police behavior.

Upon graduation from a police academy, a recruit is often subjected directly to the influences of a field-training officer which often has not experienced the same training as the recruit, due to changes and evolution in training, and often is influenced by their own experiences. Although experience plays a large factor in learning the police craft, those experiences are not universal to every officer. Personal influences play a big role in police experiences and they do not necessarily cross over and relate to another officer. Summarily, in order to pass field training, an officer is often evaluated by the same field-training officer, which reinforces that their way is the acceptable way of handling situations. This is contrary to

academia in that although theories can be conflicting, the presentation of different thoughts and ideas that can promote better decision making by an officer, rather than the one 'right way to do things' often instilled by the field training or senior officers. This type of learning might prove beneficial in certain aspects as far as tactics, first aid, or other objective scenarios, but those do not represent all of the situations faced by police officers on a regular basis.

Differential Association Theory has been vastly studied throughout life course events, both personal and professional, and due to its high level of relevance to the reality of the function of police subculture in the United States, it is important to view it in the context of the training in police recruits. As previously discussed, an integral part of police training occurs in the field-training phase, subsequent to academy training. It is this timeframe that largely impacts the ethos and attitudes of individuals entering the police field.

Differential Association Theory has also identified the impact a group has upon the development of a person's identity within that group. An appreciation is necessary for this concept as policing is structured in a pseudo-military structure, however often varied between agencies. This variation causes the organizational structure of policing to be subjected to both positive and negative influences. An example of such influences that impact police subculture attitudes are the 'blue wall of silence' and the 'us versus them mentality.' Both of these attitudes posit that the police are a distinct group separate from the public that ought to be unified as having specific needs and commitments.

Theoretical Perspective in Policing

Police academy training is essential for police recruits, their job performance and promotion of positive policing attitudes. Such positive attitudes dissipate throughout time, more so when the recruits are exposed to socialization from a senior officer during the field-training phase of their training (Haarr, 2001). One particular aspect of police attitudinal changes has been extensively studied in the support of community based policing strategies. Although, pre-academy attitudes of recruits have an impact on post-academy attitudes, socialization factors of field training have negatively influenced police officers views (Haarr, 2001). Additionally, Haarr (2001) concluded that education, specifically police officers with a bachelor's degree, have increased officer support for the community-policing model (Haarr, 2001).

Policing in America has experienced much reform since its inception. The Political Era of Policing named after the intense influences of politics, dates back from the inception of American policing through the early 1900s. The problems of overarching political influence on policing forced the Reform Era of Policing from the 1930s to the late 1970s. The 1980s until present day policing saw the concentration of community based policing also known as the Community Era of Policing. All three eras consisted of major evolutions from ideologies, approaches and innovations that were specific to each era. Many of those evolutions however were thwarted or delayed in their acceptance, as they required a foundational attitudinal 'change' of the police officers that dealt directly with the public. As these changes were substantive in the mission of policing, the vast levels of experienced officers' influences upon younger less experienced ones was detrimental to overall organizational change. Organizational environmental factors have contributed to the change of police recruits' attitudes towards not only skill changes, but attitudes towards the public and policing programs (Haarr, 2001). Lack of funding, staff shortages, lack of promotions and many other factors can lead towards an

officer's opinion, and dedication to their job. These issues can produce mal-contentment, resulting in an officer's lack of desire to overcome negatively within the workplace, ultimately affecting the communities they serve. A small, but relatable example could be work shortages and 'sick-outs', which are common when contracts go unsettled, or officer complaints that do not get addressed. This type of behavior can not only be supported by the organization, but promoted by unions or fellow officers, disregarding the bigger impact to the community.

Studies show that police recruits who have family and acquaintances in the policing profession experience socialization that shapes an officer's attitudes towards management, community and police culture (Phillips, Sobol & Varano, 2010). There are significant differences found in attitudes towards policing of police recruits with, compared to those without, this familial socialization. Recruits subject to this socialization appear have a predisposition to aggressiveness in patrol tactics as well as viewing citizens as uncooperative when dealing with crime (Phillips, et al., 2010). In contrast to the performance of police management, attitudes taught through socialization can be deemed negative towards organizational and the hierarchal structure of police management. Another significant difference found in pre-hire police officers with police officer associations is their predisposition to question to commitment of their supervisors towards officers (Phillips, et al., 2010). Apprenticeship has been strongly supported in many professions as an integral part of job training and although evidence supports the combination of both aspects of training, the current structure in police officer education methods ought to be re-evaluated. Additionally, reliance on a formal education rather than learning through socialization can promote disconnects from adherence to the police subculture, which is often associated with negative challenges.

As many changes and studies throughout history in policing attempted to improve policing, it is often challenging, as policing in America is as diverse as America itself. College education can be just one of the many factors that can lead to improvements, although not a ‘cure-all’ for the problems faced in policing today. The positive benefits can overcome the drawbacks to requiring an education, but the evaluation of college education and its effects on policing must be analyzed in a way to produce substantial confidence in their relationship. Furthermore, setting a good foundation of training and knowledge for police officers to individually build upon is essential as to not be corrupted by the negative effects of Differential Association Theory.

Chapter 4: Methods

Introduction

This study primarily examined the association of police officer college education to the level of force used to gain compliance of a suspect in arrest situations. Other factors that were included as independent variables have been previously researched to show their effects on the level of force used. Furthermore, contextual measurements were determined through the use of survey questions to further explain the context of not only the police officer's view of their education, but the situation to which force was or was not used while making an arrest, specifically, the level of crime associated with the arrest. The dependent variable, the level of force was determined as an ordinal measurement, however was treated as a nominal one as this study is concerned with which force level was used, and the order of severity of force as mentioned earlier, is not consistent across all police departments. To explore multiple independent variables and their association to the dependent variable, which was measured as a nominal measurement, a multinomial logistic regression was used to analyze the data from the surveys.

Research Questions and Hypotheses

Most previous literature concludes that the college education of a police officer has a positive relationship to the skill sets associated with positive police performance (Bittner, 1970; Carlan, 2007; Carter & Sapp, 1992; Chapman, 2012; Fogelson, 1977; Paoline & Terrill, 2007; Truxillo, et al., 1998). The focus of this study was police officer college education and its association to police officer use of force in modern day policing with an analysis of other factors that might affect the association. Several research questions were developed to determine if an

association between police officer college education and their use of force used to gain compliance in arresting a suspect existed. Several other variables, such as crime level, perception of college education in policing, age, race and gender were analyzed to show their impact on the association between the college education of a police officer and police use of force. Lastly, these variables were studied to show their associations and impact with police officer college education and the frequency in which force was used. The research questions posed in this study primarily addressed the impact of college credits earned and the college degree earned by a police officer compared to the level of, and frequency of force used by that police officer to gain compliance of a suspect in arrest situations.

Research Questions

RQ₁ : Is there an association between the number of college credits earned by a police officer and the level of force used against a suspect to gain compliance while arresting them?

RQ₂ : Is there an association between the college degree earned by a police officer and the level of force used against a suspect to gain compliance while arresting them?

RQ₃ : Is there an association between the number of college credits earned by a police officer and the number of times physical force was used against a suspect to gain compliance while arresting them?

RQ₄ : Is there an association between the college degree earned by a police officer and the number of times physical force was used against a suspect to gain compliance while arresting them?

Hypotheses

H₁ : There is an association between the number of college credits earned by a police officer and the level of force used against a suspect to gain compliance while arresting them.

H₂ : There is an association between the college degree earned by a police officer and the level of force used against a suspect to gain compliance while arresting them.

H₃ : There is an association between the number of college credits earned by a police officer and the number of times physical force was used against a suspect to gain compliance while arresting them.

H₄ : There is an association between the college degree earned by a police officer and the number of times physical force was used against a suspect to gain compliance while arresting them.

Research Design

This study used a cross-sectional research design that collected quantitative data through the use of a survey questionnaire. The quantitative data consisted of closed-ended questions derived from variables identified from past studies and previous literature. The instrument developed for this survey also included contextual questions to gather information that might have an impact on the dependent variable. Although these questions were limited, it was important to show the police officer's perceptions of their college education as an influencing factor and if it was associated to the level of force they used in arrest situations. The survey used in this study utilized two separate sampling strategies.

Operationalization of Variables

The research questions in this study addressed the association of the college education of a police officer to the level and frequency of force used by that police officer in arrest situations. Other variables that were identified in previous literature were added as additional contextual variables.

Dependent Variables

The specific job skill of a police officer that was measured in this study is the level of force (least to lethal) used by a police officer to gain compliance in an arrest situation. Although most law enforcement departments provide specific policies regarding the use of force continuum, there is no universally adopted use of force continuum set by law, practice or policy. The United States Department of Justice along with the International Association of the Chiefs of Police detail recommendations for risk management and addressing the use of force, however neither specifies a detailed scale to classify the severity of force or what is defined specifically as an escalation of force. This lack of uniformity has been addressed in this study as well as previous literature. The scale adopted for this study was derived from the National Institute of Justice (NIJ). The NIJ provides a model for law enforcement departments and acknowledges that most police departments' policies commonly use a force continuum where the use of chemical weapons or conducted electronic devices are positioned within the continuum vary. The levels of force (from least to most severe/lethal as per NIJ are identified as: Verbalization (verbal orders/commands – no force), Soft Techniques (use of grabs, holds and joint locks), Hard Techniques (use of punches and kicks), Blunt Impact (use of a baton or non-lethal projectile), Chemical Weapon (use of chemical sprays or projectiles imbedded with chemicals), Conducted Energy Device CED (Taser), and Lethal Force (use of a deadly weapon). Although tactical training and common sense dictate that an officer may escalate and 'skip' a level of force if

necessary, there is a consensus amongst law enforcement agencies that the least severe level of force should be used to obtain the compliance of a suspect.

Upon the analysis of the collected data, the variation of the placement of chemical weapons and conducted energy devices was not a concern as these categories received low responses along with other use of force responses. This led to the grouping of the response categories for analysis purposes. These new groups were identified as no force, soft techniques and hard techniques/non-lethal weapons (which included chemical weapons and controlled energy devices in the same group). This grouping is further explained later in this chapter. The use of physical force was further defined as whether no physical force was used or physical force was used to gain compliance in an arrest situation. This was done through the use of a dummy variable.

The questionnaire specifically, with the intent to support accurate memory recall, asked the participant to refer to their last five arrests individually and what the highest level of force was used to gain compliance of the arrested suspect. Each arrest was referred to in a separate question, and a list indicating the levels of force used was supplied. The responses were mutually exclusive and exhaustive as each question asked for only the highest level of force used and all of the possible levels were listed. This method reduced the cognitive load of the participant as well as minimized the chances of cognitive error by asking the participants to think about one incident at a time and subsequently report on it.

Independent Variables

The goal of this study was to uncover the factors that might also be associated to the dependent variable, the level of force and the frequency of force an officer used to gain

compliance in conducting an arrest. The focus was primarily upon the college education of the police officer. This study ascertained the participants' level of college education in two ways. First, the number of college credits earned and second, the type of degree earned: Associates Degree, Bachelors Degree, Masters Degree, Juris Doctorate Degree or PhD. The level of education was also further described by a dummy variable in the analysis to indicate whether or not the participant did not earn a college degree, earned a graduate level degree or earned an undergraduate level degree only.

Other characteristics were also important to assess, as previous literature has shown their association or lack of association with police performance. The variables used to further describe the sample were: age (Carlan, 2007; Chapman, 2012), gender (Carlan, 2007; Chapman, 2012; Paoline & Terrill, 2007), and race (Carlan, 2007; Chapman, 2012; Paoline & Terrill, 2007).

Control Variables

As seen in previous literature, varying situations could influence an officer's use of force. To address every possible context of a police officer's encounter in an arrest situation would be problematic. One contextual measure that was measured in this study was the type of crime committed by the suspect as the cause for the arrest. Each arrest encounter specifying the level of force used (the dependent variable) was associated with the level of crime presented in that encounter. The level of crime was analyzed as a control variable. The level of crime was categorized as a petty offense / violation, non-violent misdemeanor, violent misdemeanor, non-violent felony, or violent felony. These categories are mutually exclusive and exhaustive and represent the levels of crimes to which all arrest charges can be categorized.

To address the contextual aspect of the participants' views of college education in policing, three additional questions were asked in the survey. Those questions were: does a college education afford police officers with better communication skills (Pascarella & Terenzini, 1991, 2005; Smith & Aamodt, 1997), is a college education beneficial to police officers in deescalating volatile situations, and has the education you received from college been useful to you as a police officer? The last answer choice of these questions gave an option of answering 'not applicable,' as all of these questions were posed to all participants (both college educated and non-college education). These attitudes towards education and policing were also analyzed in conjunction with the independent variables in this study.

Sampling Strategy

As of 2011, the Federal Bureau of Investigation reported 1,001,984 sworn municipal/state/local police officers in the United States (FBI, 2011). Ascertaining a representative sample of police officers in the United States can be problematic. The sampling methods from previous studies involving police behavior vary in size and strategies. For example, Carlan (2007) acquired data from 16 police agencies across the State of Alabama resulting in a sample of 1,114 officers. Smith & Aamodt (1997) utilized data from 12 police departments in the State of Virginia which resulted in 299 participants.

The sample for this study was sworn law enforcement officers, either actively employed or retired from a municipal/state/local law enforcement agency. The sample also included sworn law enforcement sheriff deputies. None of the organizations studied restricted employment based on race, nationality, or other factors that will prevent their membership from portraying an accurate representation of police officers nationwide. To widen the participant pool and account

for departmental differences in assignments, the survey ascertained data from the last five arrests by the participant. The data from these incidents were directly related to the dependent variable and were not constrained by a time frame. This eliminated potential issues from the participants' position or role within the police department (including but not limited to: assignment, rank, sick leave, etc.). This proved to be beneficial as several police chiefs have contacted the researcher and based their responses by looking up previously filed reports as memory recall was difficult for some participants who have been in assignments that have not involved public contact for a lengthy period of time.

The survey was administered via an online setting to offer convenience for the participants. The sampling methods covered a broad selection of police officers throughout the United States. Although a 70% to 80% response rate might have been a standard norm in past decades (Maguire, 2002), the response rate for surveys have dramatically decreased for those inquiring about sensitive issues in policing such as citizen complaints, lawsuits, use of force, etc. (Terrill & Paoline, 2012). This finding, in part, was the justification for a large number of officers to be invited to this survey. Furthermore, two sampling methods were used to ensure reaching the participant response goal of $n = 250$.

In the first sampling method, police chiefs were contacted and given a brief explanation of the study as well as an invitation to participate in this study. The agencies that they represented were distinct from each other with no overlapping members. All of the departments that agreed to participate in the study were provided with a distinct web-link to distribute to their officers. The invitation to participate in the study was based on a randomization of the 539 police departments in the State of New York (excluding the New York City Police Department).

The New York City Police Department (NYPD) was excluded for several reasons. The membership of the NYPD lacks diversity in policy, leadership and training as the 30,000 plus officers are governed by the same set of rules and directives. This is considerably different as compared to police officers from 526 individual police departments that are substantially smaller and more organizationally diverse. Additionally, the NYPD has certain characteristics that greatly differ from other police departments, such as two-officer response units, that can have a great impact in arrest situations.

The original study design intended to solicit departments until $n = 250$ valid and complete surveys were collected. Due to initial low response rates, every police department in New York State, with the exception of NYPD, was solicited for the study. A total of 526 invitations were delivered to police departments in New York State. This represents 13 departments less than the potential pool of 539 departments. Thirteen invitations to the study were returned due to insufficient contact information. Of the 526 departments solicited, 64 departments (12.17%) responded with an average of 3.11 participants per department with a standard deviation of 3.10. This represented an overall response rate from the first sampling method (Police Departments in New York State) of $n = 199$.

The second sampling method was developed from a convenience sample of officers from various states throughout the United States. Each participant was employed by distinct police agencies with no overlapping membership which avoided duplicate solicitations and responses. This sampling method used a convenience sample of police officers and police agencies that agreed to participate in the study. The intent of this method was to acquire responses from officers outside of New York State. Officers from Arizona, California, Connecticut, New Jersey

and Washington were surveyed. The distribution of these surveys was sent to 1,520 police departments and 226 valid and complete surveys were collected from 79 distinct departments representing a departmental response rate of 5.20%. The average response per department for these five states was 2.86 with a standard deviation of 3.61. The dual sampling methods were established due to concerns regarding a suitable response rate. This approach proved necessary as the first sampling strategy only resulted in 199 responses and the second approach was instrumental to reach the goal of $n = 250$ participants. It surpassed it in obtaining a total of $n = 425$ participants.

The total of both sampling methods resulted in a solicitation of 2046 departments with responses from 143 departments (6.99%), averaging 2.97 participants per department with a standard deviation of 3.38. Furthermore, the breakdown of responses by state are: New York – 64 departments, 199 participants, Arizona – 11 departments (5.64% of 195 solicited, 35 participants averaging 3.18 responses per department), California – 17 departments (3.17% of 536 solicited, 61 participants averaging 3.69 per department), Connecticut - 6 departments (4.14% of 145 solicited, 31 participants averaging 5.17 per department), New Jersey – 38 departments (8.14% of 467 solicited, 76 responses averaging 2.00 per department), and Washington – 7 departments (3.96% of 177 solicited, 23 responses averaging 3.29 per department). It is not possible to report on the participant response rate, as the number of officers within each department was unobtainable. Furthermore, the number of officers within each department who actually received the study was not reported by the individual agencies distributing them.⁶

⁶ Since a second sampling method was needed, it was important to determine if the responses from the second sampling group (states outside of New York) had a difference from the first group. To test for this difference, a t-test was used. The result showed that there was not a statistical significant difference between the responses of the sampling groups.

The surveys were distributed after approval from the Institutional Review Board (IRB) starting on January 7, 2018 and ending June 7, 2018. The surveys were distributed through the software company ‘Survey Monkey’ which offered the option of distributing the survey via email or a web link. Web links were used and each web link had the capability of personalization. This personalization enabled the research to identify the response by state, department and participant number. These distinctions were necessary to allow controls for nested and clustered data as well as a descriptive analysis of the data. The software also offered an option of not recording Internet Protocol addresses that was utilized to ensure anonymity of the participant. Furthermore the software provided the survey responses in Microsoft Excel format that allowed coding of the variables and export into SPSS for statistical computations.

To further ensure anonymity, the agencies cooperating in the study were not listed amongst the results, however the agency information was distinguished in a separate database to prevent duplicate solicitations. The agencies were first coded by their state, then their order in the solicitation process and lastly with the participant number from the department. Each department was then assigned a distinct web-link that was created before the department was solicited. This list containing the referencing web-link was kept by the researcher on a password protected encrypted file stored on the researcher’s computer.

Data Instrument

The survey instrument utilized for this study captured a diverse sample that required each participant to have police academy training and law enforcement experience/employment. The only other required criterion of the sample was that the participant was a sworn law enforcement

officer with the power of arrest. The instrument designed was a computerized list of survey questions and answers that were closed-ended which resulted in an analysis of multiple variables including, but not limited to: the participant's primary dimensions of diversity (age, gender, and race) and secondary diversity levels (college credits earned and college degree earned), the number of arrests within the past six months, the number of times the participant used physical force to gain compliance in making an arrest, and the level of force used to gain compliance while making an arrest. The survey questions and definitions were modeled from previous studies and literature.

Previous studies vary in their collection of data, which were largely from direct surveys to police officers (majority) or obtaining data from police department personnel records (minority). During the development of this study, a preliminary survey of multiple police chiefs revealed numerous complications in choosing the latter of the two most common means of obtaining data on police officers. Some general concerns and reasons for the refusal from the departments to supply data included: the anonymity/confidentiality of officers, the reputation of the department and the police profession overall, liability based on the disclosure of the education level of the department members, and lastly, state laws which prohibits the disclosure of certain aspects of police officer personnel files. To alleviate these concerns, a direct participant survey was utilized. Most of the requested information on the survey involved information that was required to have been previously reported to the agency by the officer; therefore it was reasonable to assume that the participants submitted truthful and adequate responses.

The survey contained 21 questions using variables from existing literature. The

estimated time for a participant to have completed this survey was less than five minutes. A test survey was sent to a focus group prior to the sample participants to ensure technical operations of the survey dynamics. This also provided an opportunity to elicit feedback to alter the survey questions in the event there was vagueness or confusion. The focus group unanimously supported the survey as it was written and did not recommend any changes. This ‘pre-test’ was critical in that it intended to ensure quality, clarity and validity of the data instrument (Czaja & Blair, 2005).

Certain survey questions can be challenging due to memory recall. Specifically, the level of force used in the past five arrests/the type of crime in the last five arrests, the number of arrests within the past six months, and the number of injuries incurred in the last five arrests. The participants had the ability to exit and re-enter the survey to alleviate concerns of memory recall and promote more accurate and complete information. This option was presented to the participant during the introduction to the survey. In order to keep the survey anonymous, a logistical issue arose with this option. To avoid the recording of duplicate or unfinished submissions, the participant was required to select “yes” to a final question that asked them if their survey was complete. If the participant failed to do so, the software automatically marked the entry as incomplete. The researcher reviewed the 18 surveys that were marked incomplete and all 18 had no answers for any of the survey questions. This led to the assumption that some participants either exercised this option, or entered and exited the survey without answering any of the questions for another reason. Regardless of the reason, there were no surveys that were partially filled out and recorded.

Data Collection

A passive observation design was used. The survey included general questions intent on identifying the independent variable of college education and its association to the level of force used to gain compliance in arresting a suspect. The level of education was delineated in this study to include the number of college credits earned along with the type of degree earned. Other variables from previous literature that have been associated to a police officer's use of force were also included. Those variables were race, gender, and age. Additionally, the number of arrests in the past six months, and the number of injuries to the officer/suspect in the past five arrests were also questioned in the survey. These questions, although not directly impacting this study's primary research questions, were used in anticipation of data analysis. Contextual research questions were asked of the participant to determine their opinions of college education in policing. These variables were used in the study as control variable to further describe contextual factors. All of the variables were coded to link officer demographics to their conduct.

The method of self reported surveys were used to increase sample size and was performed with a greater sample of police officers with varying demographics. Furthermore, with a larger sample size, the standard error will decrease. Other studies that are based on self-reported surveys posit that self-reported studies that involve educational achievement data and use of force are often a viable alternative to obtaining data through official records (Edwards, 2000; Garner & Maxwell, 1999; Pate & Fridell, 1993). Furthermore, previous research based their findings on surveys distributed to officers (Carlan, 2007; Smith & Aamodt, 1997). The data from the survey is presented in Table 5.1 and has been further disaggregated in subsequent tables.

Conceptual Model / Statistical Methods

The variables in this study were characterized into the following levels of measurement and coded as follows:

The state in which the participant was employed as a police officer was measured as a nominal measurement (Arizona, California, Connecticut, New Jersey, New York and Washington). The department that the participant was employed by was measured as a nominal measurement and was coded with a distinct six-digit number. The participant was measured as a nominal measurement and was coded with a distinct eight-digit number. The level of force used was measured as ordinal (analyzed as nominal) and was coded on a scale of 0 – 6, least lethal/severe to most lethal/severe (0 = Verbalization/No Force, 1 = Soft Techniques, 2 = Hard Techniques, 3 = Blunt Impact, 4 = Chemical Weapons, 5 = Conducted Energy Device, 6 = Lethal Force). The level of crime was measured as ordinal (analyzed as nominal) and coded on a scale of 1 – 5, (1 = Petit Crime / Violation, 2 – Non-violent Misdemeanor, 3 – Violent Misdemeanor, 4 = Non-violent Felony, 5 = Violent felony). The college degree earned was measured as nominal and coded on a scale of 1 - 6, the highest level of education to the lowest/no college education, (1 = Phd, 2 = Juris Doctorate Degree, 3 = Masters Degree, 4 = Bachelors Degree, 5 = Associates Degree, 6 = No college degree). This coding sequence was necessary as when a multinomial logistic regression analysis in SPSS is preformed, the reference group in an independent variable is automatically set to the last value. Given the low frequencies of some of the responses, the college degree was recoded as three separate dichotomous variables. The first, “No Degree” (1 = No, 0 = Yes), indicated if the participant answered “None” for college degree versus selecting any other choice. The second, “Undergraduate Degree Only” (1 = No, 0 = Yes), indicated if the participant answered “Associate Degree” or “Bachelor Degree” versus selecting any other choice. Lastly, “Graduate Degree ” (1 = No, 0 =

Yes), indicated if the participant answered “Masters Degree”, “Juris Doctorate Degree”, or “Phd.” The number of college credits was measured as a continuous variable and was represented by the participants’ numerical answer. The participants’ age was measured as an ordinal measurement and grouped into blocks of 10 years and coded from 1 – 5 (1 = 20 – 29 years old, 2 = 30 – 39 years old, 3 = 40 – 49 years old, 4 = 50 to 59 years old, 5 = Over 59 years old). The participants’ gender was coded as a dichotomous variable, 0 = male and 1 = female. The participants’ race was originally coded as a nominal variable on a scale of 1 to 6 (1 = White, 2 = Black, 3 = Native American, 4 = Asian, 5 = Native Hawaiian / Pacific Islander, and 6 = Hispanic, 7 = other), however it was recoded based on zero responses for Native American / Pacific Islander and Other. The coding was revised to represent 1 = White, 2 = Black, 3 = Hispanic and 4 = Asian. The variables were further dummy coded into four separate dichotomous variables, one for each race. The participants’ answer to the three contextual questions (does a college education afford police officers with better communication skills, is a college education beneficial to police officers in deescalating volatile situations, and has the education you received from college been useful to you as a police officer) was measured as a nominal measurement and coded on a scale of 0 – 3 (0 = No opinion, 1 = Yes, 2 = No, and 3 = Not applicable). All three variables were further dummy coded into dichotomous variables.

The number of injuries sustained by a police officer and the number of injuries sustained by the suspect during the past five arrests was measured as ordinal and represented by the participants’ numerical answer 0 – 5. The number of arrests made by a participant in the last six months was measured as a nominal variable and coded on a scale of 0 to 10, (0 = 0, 1 = 1, 2 = 2, 3 = 3, 4 = 4, 5 = 5, 6 = 6-10, 7 = 11 – 15, 8 = 16 – 20, 9 = 21 – 25, 10 = more than 25).

To address the first two research questions (RQ1 – Is there an association between the number of college credits earned by a police officer and the level of force used against a suspect to gain compliance while arresting them; RQ2 – Is there an association between the college degree earned by a police officer and the level of force used against a suspect to gain compliance while arresting them) a multinomial logistic regression was used. To address the second two research questions, (RQ3 - Is there an association between the number of college credits earned by a police officer and the number of times physical force was used against a suspect to gain compliance while arresting them; RQ4 - Is there an association between the college degree earned by a police officer and the number of times physical force was used against a suspect to gain compliance while arresting them), a Poisson Regression model was used.

Multinomial Logistical Regression

A multinomial logistic regression model is an extension of logistic regression where multiple regressions are computed that can make specific comparisons to response categories. A multinomial logistic regression estimates the association between a set of predictors (the independent variables in this study) and a nominal outcome (the dependent variable, level of force used, in this study). It is a predictive analysis model that uses logarithmic odds to determine probability values. Most multinomial logistic regression models are based on the logit function as the logit assumes the log distribution (log odds) of the event. Furthermore, a multinomial logistic regression was the most appropriate test because the dependent variable in this study is not continuous, nor dichotomous. Although the dependent variable is ordinal, it was treated as a nominal variable for analysis purposes as it meets all of the assumptions of a nominal variable. A multinomial logistic regression model also shows the model chi-square test of independence that acted as an omnibus test to test all of the predictors at once.

Poisson Regression

A Poisson Regression was used to test the significance of the focal independent variables, earned college credits and earned degree, along with the other control variables to show their influence and impact on the number of times physical force was reported to be used in the last five arrests of the participant. The Poisson Regression was necessary as the dependent variable, number of times force used, was a count variable ranging from 0 to 5.

Data Analysis / Statistical Model

Step 1: The data from the surveys were reviewed for completeness. All of the surveys were completely filled out as reported by the survey software. Furthermore, the survey data tables were manually reviewed for missing cells, which were not present. This eliminated the concern for missing data. The total collected responses $n = 443$ was reduced to $n = 425$ as 18 responses were eliminated due to being completely blank.

Step 2: The survey software, SurveyMonkey provided the survey data in Microsoft Excel format (xls) which was downloaded and pasted directly into a Microsoft Excel Spreadsheet.

Step 3: A script was written in Microsoft Excel to transpose each survey into five separate entries (rows) to analyze each use of force incident in association with the other variables studied. This was done to analyze each use of force incident, however by doing so, all of the covariates (other variables studies) would be quintupled per participant. This replication proved to be problematic as well as inaccurate to measure with confidence and was addressed in Step 5. It was determined that analyzing the data based on each participant rather than each incident was more feasible and statistically appropriate.

Step 4: In analyzing the data, 15 inconsistent responses were identified. The inconsistencies were found in the responses to the earned college credits and college degree earned. Fifteen of the responses provided answers indicating earned college credits that were not equivalent to the college degree earned that they selected. It is unknown if one or both of the questions were answered incorrectly and re-interviewing the participant would not be possible as the survey was anonymously submitted. Given that both variables were focal independent variables in the research questions and that the questionable responses represent less than 4.0% of the overall responses, the 15 responses were removed from the analysis. This resulted in a sample size of $n = 410$.

Step 5: The focal dependent variable (use of force) for each participant was determined by the highest reported use of force used across the five reported incidents. This method was to establish the largest variation for the most robust analysis. This variable was labeled, “Highest Force Used”. In analyzing this variable, it was discovered that there were low cell counts for Hard Techniques, Blunt Impact, Chemical Weapons and Controlled Energy Devices. This finding was similar to the literature which previously found that the majority of force used by police officers is at the lower (less lethal) end of the spectrum. The responses for this variable in turn were collapsed into three distinct categories to allow for accurate analysis. The new variable, “Highest Reported Force Used” represented three reported force levels, 0 = No Force / Verbalization, 1 = Soft Techniques, 2 = Hard Techniques/Non-Lethal Weapons (which includes the responses for Blunt Impact, Chemical Weapons and Controlled Energy Devices).

Similarly, the variable “Highest Reported Force Crime Level” was created to correlate with the incident that the highest force level was used by each participant (last, second-to-last,

etc.). Additionally, three of the remaining 410 participants indicated that they used lethal force. This represented less than one percent of the participants. Analyzing this low scoring frequency was problematic; however grouping lethal force into the collapsed categories was not an option as lethal force represents a level of force distinctly distant from all other use of force levels. Additionally, the use of lethal force represents an extreme case of using force. The three cases where lethal force was reported were removed from the analyses. They were instead articulated in the descriptive analysis section. The remaining cases, $n = 407$ participants which was 163% of the anticipated study of 250 participants, were used for the final analysis.

Step 6: The focal dependent variable (level of force used) for each participant was also determined by randomly selecting one of the five incidents of each participant. This method showed an unbiased selection of reported force levels. This variable was labeled, “Randomized Use of Force”. In analyzing this variable, it was discovered that there were low cell counts for Hard Techniques, Blunt Impact, Chemical Weapons and Controlled Energy Devices. This finding was similar to the literature which previously found that the majority of force used by police officers is at the lower (less lethal) end of the spectrum. The responses for this variable in turn were collapsed into three distinct categories to allow for accurate analysis. The new variable, “Randomized Force Used Collapsed” represented three reported force levels, 0 = No Force / Verbalization, 1 = Soft Techniques, 2 = Hard Techniques/Non-Lethal Weapons (which includes the responses for Blunt Impact, Chemical Weapons and Controlled Energy Devices). Similarly, the variable “Randomized Use of Force” was created to correlate with the incident number that the randomized force level was used by each participant (last, second-to-last, etc.).

Step 7: The responses to the three contextual questions were analyzed. Question #13, “Has the education you received from college been useful to you as a police officer”, was contingent on the participant having a college education. Since 125 participants reported not having a college education, only 282 participants (69.3% of sample) were able to answer this question. Given that the response rate of college-educated participants was less than three-quarters of the entire sample, the variable was removed from the final model, however it was included in the descriptive analysis chapter. The two other contextual questions, “Does a college education afford police officers with better communication skills?” and “Is a college education beneficial to police officers in deescalating volatile situations?” were dummy coded as 0 = ‘no’ or ‘no opinion’ and 1 = ‘yes’. This was to determine whether or not there was an impact of the participants’ positive view of a college education upon their level of force used. (As mentioned previously this coding method was opposite from the normal identifiers, but necessary as SPSS version 25 analyzes the first category when dichotomous variables are entered as factors in regression models.

Step 8: To analyze whether or not physical force was used, a dummy variable was created based off of the data collected. This dichotomous variable indicated whether or not physical force was used by the participant to gain compliance in an arrest situation. To create this variable, the answers to survey questions 1 – 5 were analyzed. If a participant chose “Verbalization / No Force,” the dummy variable would indicate ‘0’. If a participant chose any other selection, other than leaving the answer blank, the variable indicated a value of ‘1’ representing that some level of physical force was used. This variable was addressed in the descriptive analysis chapter.

Step 9: For Research Questions 1 and 3, earned college credits, the focal independent variable was measured as a continuous variable and labeled “Earned College Credits”. For Research Questions 2 and 4, the focal independent variable was “Earned College Degree”. Although the responses ranged from ‘None’ to ‘Phd’, there were low frequency responses for ‘Juris Doctorate’ and ‘Phd’. The frequency responses were two for each, which caused difficulty in analyses. As a result, the responses to the earned college degree variable was collapsed into three categories, ‘None’, ‘Undergraduate’ and ‘Graduate’ (which included masters, juris doctorate and Phd degrees). The three categories were dummy coded into two variables ‘Earned Graduate Degree’ to show participants that have reported to have a highest degree earned as either a Masters Degree, Juris Doctorate Degree or Phd, represented by ‘0’ for yes and ‘1’ for no. The second variable, ‘Earned UnderGraduate Degree’ represented participants that earned their highest degree as either, and only, an associates degree or bachelors degree that was represented by ‘0’ for yes and ‘1’ for no.

Step 10: An SPSS variable table was constructed to represent the variables, the name of each variable, the codes for each response, the coded name of each response and the level of measurement for each variable.

Step 11: A descriptive analyses consisting of a frequency distribution was performed. This analysis showed both the existence of missing data (coded as ‘999’) and the n values of the total frequencies for each variable. Zero values of ‘999’ were found, indicating that there was no missing data. The total columns of each variable also confirmed no missing data as all of them equaled the $n = 407$ sample size.

Step 12: The race variable contained four categories that had participant responses for each. They were: White, Black, Hispanic and Asian. No other races were selected, nor was the ‘other’ fill in the blank option. Both White and Black races were reported as the most common and second most common, respectively. To avoid multicollinearity issues where one independent variable has an impact on another independent variable, holding all other factors constant, the variable “Race = White” was removed from the analysis for better interpretation of the data parameters.

Step 13: For Research Question #1, two multinomial logistic regressions were used to assess the association of the focal independent variable, earned college credits and the influence of the control variables versus the dependent variable, the level of force used. The multinomial logistic regression models provided estimated predictive regression coefficients that were used to articulate the relationships, if any, as well as the effect of the independent and focal variables upon the dependent variable. The dependent/reference variable for the first model for Research Question #1 was the highest level of force reported and the reference category was the “0 – Verbalization/No Physical Force” response.

The formula that was used was:

$$\log \frac{\Pr(Y = j)}{\Pr(Y = j^1)} = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9$$

j = The level of force identified in the analysis (each level 0 - 2)

j^1 = The referenced level of force (in each formula) which is “0 – Verbalization/No Physical Force”

The equation that was computed for Research Question 1 included the following variables:

j = ‘Highest Reported Force Used’ for the dependent variable.

X_1 = Age (Group)

X_2 = Gender: (dummy coded as 0 = ‘male’ and 1 = ‘female’)

Race: Dummy coded as:

X_3 = Race = Black: (dummy coded as 1 = ‘not-black’ and 0 = ‘black’)

X_4 = Race = Hispanic: (dummy coded as 1 = ‘not-Hispanic’ and 0 = ‘Hispanic’)

X_5 = Race = Asian: (dummy coded as 1 = ‘not-Asian’ and 0 = ‘Asian’)

X_6 = Does the participant state a college education affords police officers with better communication skills?

Participant states college provides better communication skills (dummy coded for 1 = “no” or “no opinion”, 0 = ‘yes’)

X_7 = Does the participant state a college education is beneficial to police officers in deescalating volatile situations?

Participant states college deescalates volatile situations (dummy coded for 1 = “no” or “no opinion”, 0 = ‘yes’)

X_8 = Highest Reported Force Incident Crime Level

X_9 = ‘Earned College Credits’

The dependent/reference variable for the second model for Research Question #1 was a randomized level of force reported and the reference category was the “0 – Verbalization/No Physical Force” response.

The formula that was used was:

$$\log \frac{\Pr(Y = j)}{\Pr(Y = j^1)} = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9$$

j = The level of force identified in the analysis (each level 0 - 2)

j^1 = The referenced level of force (in each formula) which is “0 – Verbalization/No Physical Force”

The equation that was computed for Research Question 1 included the following variables:

j = ‘Randomized Reported Force Used’ for the dependent variable.

X_1 = Age (Group)

X_2 = Gender: (dummy coded as 0 = ‘male’ and 1 = ‘female’)

Race: Dummy coded as:

X_3 = Race = Black: (dummy coded as 1 = ‘not-black’ and 0 = ‘black’)
 X_4 = Race = Hispanic: (dummy coded as 1 = ‘not-Hispanic’ and 0 = ‘Hispanic’)
 X_5 = Race = Asian: (dummy coded as 1 = ‘not-Asian’ and 0 = ‘Asian’)

X_6 = Does the participant state a college education affords police officers with better communication skills?
 Participant states college provides better communication skills (dummy coded for 1 = “no” or “no opinion”, 0 = ‘yes’)

X_7 = Does the participant state a college education is beneficial to police officers in deescalating volatile situations?
 Participant states College deescalates volatile situations (dummy coded for 1 = “no” or “no opinion”, 0 = ‘yes’)

X_8 = Randomized Reported Force Incident Crime Level

X_9 = ‘Earned College Credits’

Step 14: For Research Question #2, two multinomial logistic regressions were used to assess the association of the focal independent variable, earned college degree and the influence of the control variables versus the dependent variable, the level of force used. The multinomial logistic regression models provided estimated predictive regression coefficients that were used to articulate the relationships, if any as well as the effect of the independent and focal variables upon the dependent variable. The dependent/reference variable for the first model for Research Question #2 was the highest level of force reported and the reference category was the “0 – Verbalization/No Physical Force” response.

The formula that was used was:

$$\log \frac{\Pr(Y = j)}{\Pr(Y = j^1)} = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10}$$

j = The level of force identified in the analysis (each level 0 - 2)

j^1 = The referenced level of force (in each formula) which is “0 – Verbalization/No Physical Force”

The equation that was computed for Research Question 2 included the following variables:

j = 'Highest Reported Force Used' for the dependent variable.

X_1 = Age (Group)

X_2 = Gender: (dummy coded as 0 = 'male' and 1 = 'female')

Race: Dummy coded as:

X_3 = Race = Black: (dummy coded as 1 = 'not-black' and 0 = 'black')

X_4 = Race = Hispanic: (dummy coded as 1 = 'not-Hispanic' and 0 = 'Hispanic')

X_5 = Race = Asian: (dummy coded as 1 = 'not-Asian' and 0 = 'Asian')

X_6 = Does the participant state a college education affords police officers with better communication skills?

Participant states college provides better communication skills (dummy coded for 1 = "no" or "no opinion", 0 = 'yes')

X_7 = Does the participant state a college education is beneficial to police officers in deescalating volatile situations

Participant states college deescalates volatile situations (dummy coded for 1 = "no" or "no opinion", 0 = 'yes')

X_8 = Highest Reported Force Incident Crime Level, coded as 1 = "violent felony", 2 = "non-violent felony", 3 = "Violent Misdemeanor", 4 = "Non-violent misdemeanor" or 5 = "Violation / Petty Offense"

X_9 = Earned Graduate Degree (dummy coded as 0 = "yes" and 1 = "no")

X_{10} = Earned Undergraduate Graduate Degree (dummy coded as 0 = "yes" and 1 = "no")

The dependent/reference variable for the second model for Research Question #2 was a randomized level of force reported and the reference category is the "0 – Verbalization/No Physical Force" response.

The formula that was used was:

$$\log \frac{\Pr(Y = j)}{\Pr(Y = j^1)} = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10}$$

j = The level of force identified in the analysis (each level 0 - 2)

j^1 = The referenced level of force (in each formula) which is "0 – Verbalization/No Physical Force"

The equation that was computed for Research Question 2 included the following variables:

j = 'Randomized Reported Force Used' for the dependent variable.

X_1 = Age (Group)

X_2 = Gender: (dummy coded as 0 = 'male' and 1 = 'female')

Race: Dummy coded as:

X_3 = Race = Black: (dummy coded as 1 = 'not-black' and 0 = 'black')

X_4 = Race = Hispanic: (dummy coded as 1 = 'not-Hispanic' and 0 = 'Hispanic')

X_5 = Race = Asian: (dummy coded as 1 = 'not-Asian' and 0 = 'Asian')

X_6 = Does the participant state a college education affords police officers with better communication skills?

Participant states college provides better communication skills (dummy coded for 1 = "no" or "no opinion", 0 = 'yes')

X_7 = Does the participant state a college education is beneficial to police officers in deescalating volatile situations?

Participant states college deescalates volatile situations (dummy coded for 1 = "no" or "no opinion", 0 = 'yes')

X_8 = Randomized Reported Force Incident Crime Level, coded as 1 = "violent felony", 2 = "non-violent felony", 3 = "Violent Misdemeanor", 4 = "Non-violent misdemeanor" or 5 = "Violation / Petty Offense"

X_9 = Earned Graduate Degree (dummy coded as 0 = "yes" and 1 = "no")

X_{10} = Earned Undergraduate Graduate Degree (dummy coded as 0 = "yes" and 1 = "no")

Step 15: For Research Question #3, two Poisson Regressions were performed as the dependent variable was a count variable, specifically, the number times physical force was used (0-5) by each participant during the last five arrests performed by the participant. The focal independent variable earned college credits, was analyzed to show its influence, if any, upon the number of times physical force was used to gain compliance of a suspect in an arrest situations.

The formula that was used was for the first model was:

$$\mu = t \exp (\beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9)$$

μ = the mean incidence rate of a event per unit of exposure, t = the exposure

X_1 = Age (Group)

X_2 = Gender: (dummy coded as 0 = 'male' and 1 = 'female')

Race: Dummy coded as:

X_3 = Race = Black: (dummy coded as 1 = 'not-black' and 0 = 'black')

X_4 = Race = Hispanic: (dummy coded as 1 = 'not-Hispanic' and 0 = 'Hispanic')

X_5 = Race = Asian: (dummy coded as 1 = 'not-Asian' and 0 = 'Asian')

X_6 = Does the participant state a college education affords police officers with better communication skills?

Participant states college provides better communication skills (dummy coded for 1 = "no" or "no opinion", 0 = 'yes')

X_7 = Does the participant state a college education is beneficial to police officers in deescalating volatile situations?

Participant states college deescalates volatile situations (dummy coded for 1 = "no" or "no opinion", 0 = 'yes')

X_8 = Highest Reported Force Incident Crime Level, coded as 1 = "violent felony", 2 = "non-violent felony", 3 = "Violent Misdemeanor", 4 = "Non-violent misdemeanor" or 5 = "Violation / Petty Offense"

X_9 = 'Earned College Credits'

The second Poisson Regression with the focal independent variable earned college credits, was analyzed to show its influence, if any, upon the number of times physical force was used to gain compliance of a suspect in an arrest situations.

The formula that was used was for the second model was:

$$\mu = t \exp (\beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9)$$

μ = the mean incidence rate of a event per unit of exposure, t = the exposure

X_1 = Age (Group)

X_2 = Gender: (dummy coded as 0 = 'male' and 1 = 'female')

Race: Dummy coded as:

X_3 = Race = Black: (dummy coded as 1 = 'not-black' and 0 = 'black')

X_4 = Race = Hispanic: (dummy coded as 1 = 'not-Hispanic' and 0 = 'Hispanic')

X_5 = Race = Asian: (dummy coded as 1 = 'not-Asian' and 0 = 'Asian')

X_6 = Does the participant state a college education affords police officers with better communication skills?

Participant states college provides better communication skills (dummy coded for 1 = “no” or “no opinion”, 0 = ‘yes’)

X_7 = Does the participant state a college education is beneficial to police officers in deescalating volatile situations?

Participant states college deescalates volatile situations (dummy coded for 1 = “no” or “no opinion”, 0 = ‘yes’)

X_8 = Randomized Reported Force Incident Crime Level, coded as 1 = “violent felony”, 2 = “non-violent felony”, 3 = “Violent Misdemeanor”, 4 = “Non-violent misdemeanor” or 5 = “Violation / Petty Offense”

X_9 = ‘Earned College Credits’

Step 16: For Research Question #4, two Poisson Regressions were performed as the dependent variable was a count variable, specifically, the number times physical force was used (0-5) by each participant during the last five arrests performed by the participant. The focal independent variable earned college degree (Graduate Degree, or Undergraduate Degree Only) was analyzed to show its influence, if any, upon the number of times physical force was used to gain compliance of a suspect in an arrest situations.

The formula that was used was for the first model was:

$$\mu = t \exp (\beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_{10} + \beta_{10})$$

μ = the mean incidence rate of a event per unit of exposure, t = the exposure

X_1 = Age (Group)

X_2 = Gender: (dummy coded as 0 = ‘male’ and 1 = ‘female’)

Race: Dummy coded as:

X_3 = Race = Black: (dummy coded as 1 = ‘not-black’ and 0 = ‘black’)

X_4 = Race = Hispanic: (dummy coded as 1 = ‘not-Hispanic’ and 0 = ‘Hispanic’)

X_5 = Race = Asian: (dummy coded as 1 = ‘not-Asian’ and 0 = ‘Asian’)

X_6 = Does the participant state a college education affords police officers with better communication skills?

Participant states college provides better communication skills (dummy coded for 1 = “no” or “no opinion”, 0 = ‘yes’)

X_7 = Does the participant state a college education is beneficial to police officers in deescalating volatile situations?

Participant states college deescalates volatile situations (dummy coded for 1 = “no” or “no opinion”, 0 = ‘yes’)

X_8 = Highest Reported Force Incident Crime Level, coded as 1 = “violent felony”, 2 = “non-violent felony”, 3 = “Violent Misdemeanor”, 4 = “Non-violent misdemeanor” or 5 = “Violation / Petty Offense”

X_9 = Earned Graduate Degree (dummy coded as 0 = “yes” and 1 = “no”)

X_{10} = Earned Undergraduate Graduate Degree (dummy coded as 0 = “yes” and 1 = “no”)

The second Poisson Regression with the focal independent variable earned college degree (Graduate Degree, or Undergraduate Degree Only) was analyzed to show its influence, if any, upon the number of times physical force was used to gain compliance of a suspect in an arrest situations.

The formula that was used was for the second model was:

$$\mu = t \exp (\beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_{10} + \beta_{10})$$

μ = the mean incidence rate of a event per unit of exposure, t = the exposure

X_1 = Age (Group)

X_2 = Gender: (dummy coded as 0 = ‘male’ and 1 = ‘female’)

Race: Dummy coded as:

X_3 = Race = Black: (dummy coded as 1 = ‘not-black’ and 0 = ‘black’)

X_4 = Race = Hispanic: (dummy coded as 1 = ‘not-Hispanic’ and 0 = ‘Hispanic’)

X_5 = Race = Asian: (dummy coded as 1 = ‘not-Asian’ and 0 = ‘Asian’)

X_6 = Does the participant state a college education affords police officers with better communication skills?

Participant states college provides better communication skills (dummy coded for 1 = “no” or “no opinion”, 0 = ‘yes’)

X_7 = Does the participant state a college education is beneficial to police officers in deescalating volatile situations?

Participant states college deescalates volatile situations (dummy coded for 1 = “no” or “no opinion”, 0 = ‘yes’)

X_8 = Randomized Reported Force Incident Crime Level, coded as 1 = “violent felony”, 2 = “non-violent felony”, 3 = “Violent Misdemeanor”, 4 = “Non-violent misdemeanor” or 5 = “Violation / Petty Offense”

X_9 = Earned Graduate Degree (dummy coded as 0 = “yes” and 1 = “no”)

X_{10} = Earned Undergraduate Graduate Degree (dummy coded as 0 = “yes” and 1 = “no”)

These computations were performed through the statistical software SPSS version 25.

Step 17: The results from all analyses are presented in Chapters 5 and 6 and further discussed in Chapter 7.

Chapter 5: Descriptive Analysis

Introduction

This chapter shows a descriptive analysis of the data obtained from the survey used in this study. Frequency distributions of the variables were tabulated to show the number of occurrences of each variable for each participant. Furthermore, this chapter includes a cross-tabulation of certain variables to further describe the findings from the data obtained. Due to inconsistent responses by 15 participants, those 15 responses were removed from this section (with the exception of Table 5.1), reducing the sample size to $n = 410$. This was explained in Chapter 4. (The frequency percent totals in several of the tables in this chapter do not sum to 100 due to rounding of individual percentages.)

Frequency Distributions

The data was collected from 425 participants from 143 police departments throughout 6 states (New York, Arizona, California, Connecticut, New Jersey and Washington). The number of responses from New York State was the highest departmental response rate of 12.17% (64 departments responded out of 526 solicited). Table 5.1 represents the total department response rate by state. The largest number of responses was also obtained from New York State (199 responses), representing 46.8% of the total responses in the survey. The least, Connecticut (31 responses) represented 7.3% of the total responses in the survey. Table 5.1 also represents the number of participants from each state.

Table 5.1 Collected Data Frequencies

	Participant Frequency n = 425	Participant Percent of Study Sample	Department Frequency n = 143	Department Percent of Study Sample	Department Invitations	Department Response Rate
Arizona	35	8.2	11	7.7	195	5.64
California	61	14.4	17	11.9	536	3.17
Connecticut	31	7.3	6	4.2	145	4.14
New Jersey	76	17.9	38	26.6	467	8.14
New York	199	46.8	64	44.8	526	12.17
Washington	23	5.4	7	4.8	177	3.96
Totals:	425	100	143	100	2046	6.99

Table 5.2 shows the measures of central tendency and range for the responses for earned college credits. The method used to gather this information allowed the participant to enter any numerical value to represent the amount of college credits they earned. The variable was measured as a continuous variable. To list each credit amount chosen along with its respective frequency would be too cumbersome, however this variable was further analyzed in Chapter 6.

Table 5.2 Earned College Credits Frequency Table

Earned College Credits	
Mean	96.49
Median	120.00
Mode	120
Std. Deviation	62.389
Minimum	0
Maximum	280

Participants were asked to select the highest degree that they earned in college. Of the 410 participants, 127 (31.0%) indicated that they did not earn a college degree whereas 283 (69.1%) indicated that they earned some type of college degree. Two hundred and twenty nine participants reported earning an undergraduate only degree (Associates or Bachelors), representing 55.9% of the total participants. Fifty-four participants (13.2%) reported earning a

graduate degree. The majority of participants reported earning a bachelor's degree (177 participants, 43.2%). A breakdown of degrees earned is represented in Table 5.3.

Table 5.3 Earned Degree Level Frequency Table

Earned Degree Level	Frequency	Percent
PhD	2	.5
Juris Doctorate	2	.5
Masters Degree	50	12.2
Bachelors Degree	177	43.2
Associates Degree	52	12.7
None	127	31.0
Total	410	100.0

Table 5.4 represents the highest reported level of force from the last 5 arrests of the participant. The use of force scale, 0 = none through 6 = most severe (lethal force) was used. Of the 410 participants, 145 (35.4%) reported that their highest level of force was '0' indicating that they did not use any form of physical force for any of their past five arrests. The most common, was '0' no force, followed by '1' indicating soft techniques (136 participants, 33.2%). The least common was lethal force (3 participants, 0.7%).

Table 5.4 Highest Level of Force Reported (per participant) Frequency Table

Highest Level of Force Reported	Frequency	Percent
Verbalization / No Physical Force	145	35.4
Soft Techniques	136	33.2
Hard Techniques	49	12.0
Blunt Impact	20	4.9
Chemical Weapons	20	4.9
Controlled Energy Device	37	9.0
Lethal Force	3	.7
Total	410	100.0

The number of times physical force was used based on the last five arrests was the focal independent variable in research questions 3 and 4. Table 5.5 shows the breakdown by frequency. The highest percentage resulted in 35.4% of the participants (145) indicating that no physical force was used in all of their last 5 arrests. Only 10.5% (43) of the participants indicated that physical force was used in all five of their past five arrests.

Table 5.5 Number of Times Physical Force Reported (per participant) Frequency Table

Number of Times Force Used	Frequency	Percent	Cumulative Percent
0	145	35.4	35.4
1	109	26.6	62
2	45	11.0	73
3	23	5.6	78.6
4	45	11.0	89.6
5	43	10.5	100.1
Total	410	100.1	

Table 5.6 represents the responses to the question posed to each participant asking if they felt their college education was beneficial to policing. This variable was later removed from the analyses (explained further in Chapter 6), as the answer was contingent on the participant having a college education, which only allowed approximately 69% of the sample to adequately answer. The findings however showed that 77.3% of participants felt that a college education is beneficial to policing.

Table 5.6 College Beneficial to Policing

College Beneficial to Policing	Frequency	Percent
No Opinion	15	4.7
Yes	245	77.3
No	57	18
Total	317	100

Table 5.7 represents the opinion of the participant regarding the college education level of a police officer affording better communication skills. The majority of the participants, 60% (246) reported that they agree.

Table 5.7 College Education Affords Police Officers Better Communication Skills Response Frequency Table

College = Better Communication Skills	Frequency	Percent
No Opinion	46	11.2
Yes	246	60.0
No	118	28.8
Total	410	100.0

Table 5.8 represents the participants' opinion of whether or not a college education is beneficial to a police officer in deescalating volatile situations. A small majority, 41.7% (171) of participants supported the opinion that a college education was useful in deescalating a volatile situation whereas 40.0% (164) participants stated it does not.

Table 5.8 College Education Beneficial in Deescalating Volatile Situations Responses Frequency Table

Deescalate Volatile Situations	Frequency	Percent
No Opinion	75	18.3
Yes	171	41.7
No	164	40.0
Total	410	100.0

Table 5.9 describes the study sample with three demographic variables to further describe the participant. The first is the participant's age was represented by 5 groups of a 10-year range (20 – 29, 30 – 39, 40 – 49, 50 – 59) and a sixth group representing an age over 59 years old. The largest age group that responded to the survey was from the age group, 30 – 39 years old, representing 44.4% (182 participants) of the sample. The least represented age group was the

'Over 59 years old' that represented 1.0% (4 participants) of the total sample. The second demographic was gender. The sample was contained 373 (91.0%) male and 37 (9.0%) female participants. Although several responses for race were given as options to the participants, only four races were selected to represent the sample. The most frequent occurring race was White that represented 86.6% of the sample (355 participants), followed by Black, 7.8% (32 participants), Hispanic 3.4% (14 participants) and lastly, Asian, 2.2% (9 participants).

Table 5.9 Participant Sample Demographics Frequency Table

Sample Demographics	Frequency	Percent
Age 20 – 29 Years Old	54	13.2
Age 30 – 39 Years Old	182	44.4
Age 40 – 49 Years Old	133	32.4
Age 50 – 59 Years Old	37	9.0
Over 59 Years Old	4	1.0
Male	373	91.0
Female	37	9
Race = White	355	86.6
Race = Black	32	7.8
Race = Hispanic	14	3.4
Race = Asian	9	2.2

Table 5.10 represents the results from a cross-tabulation of the earned degree level versus the highest level of force used. Officers with a Masters Degree had high reported levels of force in the 'no force' category at 54.0% of all reported levels for that degree. The second highest force level used by officers with a Masters Degree was 32.0%. The higher levels of force used (hard techniques, blunt impact, chemical weapons, controlled energy devices and lethal force) represented only 14% of the levels of force used by officers with a Masters Degree. Conversely,

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officers with no degrees only showed 15.7% in the use of no force compared to other force levels. This association is analyzed further in Chapter 6.

Table 5.10 Cross-tabulation Highest Force Used x Earned Degree

Highest Force Used		Earned Degree Level						Total
		Phd	Juris Doctorate	Masters Degree	Bachelors Degree	Associates Degree	None	
Verbalization / No Physical Force	<i>Count</i>	1	0	27	74	23	20	145
	% within Highest Force	0.7%	0.0%	18.6%	51.0%	15.9%	13.8%	100.0%
	% within Degree	50.0%	0.0%	54.0%	41.8%	44.2%	15.7%	35.4%
Soft Techniques	<i>Count</i>	0	1	16	83	15	21	136
	% within Highest Force	0.0%	0.7%	11.8%	61.0%	11.0%	15.4%	100.0%
	% within Degree	0.0%	50.0%	32.0%	46.9%	28.8%	16.5%	33.2%
Hard Techniques	<i>Count</i>	1	0	4	10	9	25	49
	% within Highest Force	2.0%	0.0%	8.2%	20.4%	18.4%	51.0%	100.0%
	% within Degree	50.0%	0.0%	8.0%	5.6%	17.3%	19.7%	12.0%
Blunt Impact	<i>Count</i>	0	0	1	1	1	17	20
	% within Highest Force	0.0%	0.0%	5.0%	5.0%	5.0%	85.0%	100.0%
	% within Degree	0.0%	0.0%	2.0%	0.6%	1.9%	13.4%	4.9%
Chemical Weapons	<i>Count</i>	0	1	0	3	0	16	20
	% within Highest Force	0.0%	5.0%	0.0%	15.0%	0.0%	80.0%	100.0%
	% within Degree	0.0%	50.0%	0.0%	1.7%	0.0%	12.6%	4.9%
Controlled Energy Device	<i>Count</i>	0	0	1	6	4	26	37
	% within Highest Force	0.0%	0.0%	2.7%	16.2%	10.8%	70.3%	100.0%
	% within Degree	0.0%	0.0%	2.0%	3.4%	7.7%	20.5%	9.0%
Lethal Force	<i>Count</i>	0	0	1	0	0	2	3
	% within Highest Force	0.0%	0.0%	33.3%	0.0%	0.0%	66.7%	100.0%
	% within Degree	0.0%	0.0%	2.0%	0.0%	0.0%	1.6%	0.7%
Total	<i>Count</i>	2	2	50	177	52	127	410
	% within Highest Force	0.5%	0.5%	12.2%	43.2%	12.7%	31.0%	100.0%
	% within Degree	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 5.11 represents the results from a cross-tabulation of the earned degree level versus the number of times force was used in the last five arrests of the participant. Officers who have no college degree used force the highest two number of times (4 and 5) at a rate of more than half of officers with no degree (57.4%). Officers with a Masters Degree used no force 54.0% compared to other force levels used by those with a Masters Degree. Officers with a Bachelors Degree used force zero times or one time 78.5% compared to two or more times within their last five reported arrests. Officers who reported not earning a degree used force four or five times in their last five arrests at a rate of 57.4% as compared to three times or less. This relationship is explored further in Chapter 6.

Table 5.11 Number of Times Force Used x Earned Degree

Number of Times Force Used		Earned Degree Level					None	Total
		Phd	Juris Doctorate	Masters Degree	Bachelors Degree	Associate s Degree		
0	<i>Count</i>	1	0	27	74	23	20	145
	% within Number of Times Force Used	0.7%	0.0%	18.6%	51.0%	15.9%	13.8%	100.0%
	% within Degree	50.0%	0.0%	54.0%	41.8%	44.2%	15.7%	35.4%
1	<i>Count</i>	1	1	11	65	14	17	109
	% within Number of Times Force Used	0.9%	0.9%	10.1%	59.6%	12.8%	15.6%	100.0%
	% within Degree	50.0%	50.0%	22.0%	36.7%	26.9%	13.4%	26.6%
2	<i>Count</i>	0	1	8	21	9	6	45
	% within Number of Times Force Used	0.0%	2.2%	17.8%	46.7%	20.0%	13.3%	100.0%
	% within Degree	0.0%	50.0%	16.0%	11.9%	17.3%	4.7%	11.0%
3	<i>Count</i>	0	0	1	10	1	11	23
	% within Number of Times Force Used	0.0%	0.0%	4.3%	43.5%	4.3%	47.8%	100.0%
	% within Degree	0.0%	0.0%	2.0%	5.6%	1.9%	8.7%	5.6%
4	<i>Count</i>	0	0	2	4	2	37	45
	% within Number of Times Force Used	0.0%	0.0%	4.4%	8.9%	4.4%	82.2%	100.0%
	% within Degree	0.0%	0.0%	4.0%	2.3%	3.8%	29.1%	11.0%
5	<i>Count</i>	0	0	1	3	3	36	43
	% within Number of Times Force Used	0.0%	0.0%	2.3%	7.0%	7.0%	83.7%	100.0%
	% within Degree	0.0%	0.0%	2.0%	1.7%	5.8%	28.3%	10.5%
Total	<i>Count</i>	2	2	50	177	52	127	410
	% within Number of Times Force Used	0.5%	0.5%	12.2%	43.2%	12.7%	31.0%	100.0%
	% within Degree	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Chapter 6: Statistical Analysis Results

Research Question 1 (Part 1): A multinomial logistic regression analysis was conducted and resulted in the following output with the focal independent variable of college credits and the dependent variable measured as the highest level of force used from the last reported five arrests of each participant. The Pseudo R-Squared (Cox and Snell = .428) explained approximately half of the variation in the dependent variable.

Table 6.1 Parameter Estimates / Multinomial Logistic Regression College Credits (focal IV) versus Force Level (focal DV) – based on highest reported use of force.

Parameter Estimates				
Highest Reported Force Used (per participant)	B	Std. Error	Sig.	Exp(B)
Soft Techniques				
Intercept	.249	.584	.670	
Age	.020	.149	.895	1.020
Earned College Credits	-.005	.003	.053	.995
Gender = Male	-.156	.420	.709	.855
Race = Black	1.907	.670	.004	6.735
Race = Hispanic	.775	.674	.250	2.171
Race = Asian	-1.260	1.125	.263	.284
State College provides better communication skills	.540	.395	.172	1.715
State College deescalates volatile situations	.359	.384	.350	1.432
Incident = Violent Felony	.431	.846	.610	1.539
Incident = Non-Violent Felony	-.726	.429	.091	.484
Incident = Violent Misdemeanor	.659	.517	.203	1.933
Incident = Non-Violent Misdemeanor	-.394	.330	.233	.674
Hard Techniques / Non-Lethal Weapons				
Intercept	.851	.790	.282	
Age	.248	.191	.193	1.282
Earned College Credits	-.026	.003	.000	.974
Gender = Male	.080	.612	.895	1.084
Race = Black	2.382	.776	.002	10.824
Race = Hispanic	-1.148	1.064	.281	.317
Race = Asian	-.920	1.009	.362	.398
State College provides better communication skills	1.026	.428	.016	2.791
State College deescalates volatile situations	-1.069	.477	.025	.344
Incident = Violent Felony	3.079	.823	.000	21.736
Incident = Non-Violent Felony	-.380	.521	.466	.684
Incident = Violent Misdemeanor	1.779	.623	.004	5.923
Incident = Non-Violent Misdemeanor	-.195	.453	.667	.823

As seen in Table 6.1, denoted by an asterisk, there were statistically significant relationships between the focal and other predictor variables compared to the highest reported level of force used to gain compliance in arrest situations. An increase of one in college credit, decreased the probability of the use of soft techniques as compared to no force by 0.5% ($p = .053$).

In testing the model effects of earned college credits to the highest level of force used, Black officers used soft techniques versus no physical force to gain compliance in arrest situations 6.74 times more often than non-black officers ($p < .01$).

In analyzing the use of hard techniques/non-lethal weapons, for every one increase in earned college credits, the probability of the use of hard techniques/non-lethal weapons as compared to no force decreased by 2.6% ($p < .001$).

In testing the model effects of earned college credits to the highest level of force used, Black officers used hard techniques/non-lethal weapons versus no physical force to gain compliance in arrest situations 10.82 times more often than non-black officers ($p < .01$).

In testing the model effects of earned college credits to the highest level of force used, those officers who stated a college education provides police officers with better communication skills used hard techniques/non-lethal weapons versus no physical force to gain compliance in arrest situations 2.79 times more often compared to officers who stated they do not, or have no opinion ($p < .05$). Officers who stated a college education deescalates volatile situations used hard techniques/non-lethal weapons versus no physical force to gain compliance in arrest

situations 65.6% less often compared to officers who stated it does not, or have no opinion ($p < .05$).

The level of crime associated with the arrest where the highest level of force used analyzed also had a significant impact on the level of force used. When the crime was a violent felony, officers used hard techniques/non-lethal weapons as compared to no force 21.74 times more often ($p < .001$). When the crime was a violent misdemeanor, officers used hard techniques/non-lethal weapons as compared to no force 5.92 times more often ($p < .01$).

Research Question 1 (Part 2): A multinomial logistic regression analysis was conducted and resulted in the following output with the focal independent variable of earned college credits and the dependent variable measured as the level of force used from a randomized incident from the last reported five arrests of each participant. The Pseudo R-Squared (Cox and Snell = .287) explained approximately one-third of the variation in the dependent variable.

Table 6.2 Parameter Estimates / Multinomial Logistic Regression College Credits (focal IV) versus Force Level (focal DV) – based on a randomized incident reported.

Parameter Estimates				
Randomized Use of Force	B	Std. Error	Sig.	Exp(B)
Soft Techniques				
Intercept	-.317	.689	.645	
Age	-.035	.166	.832	.965
Earned College Credits	-.016	.003	.000	.984
Gender = Male	.280	.503	.578	1.322
Race = Black	.551	.522	.291	1.734
Race = Hispanic	-.644	.830	.438	.525
Race = Asian	-.009	1.004	.993	.991
State College provides better communication skills	.465	.376	.216	1.591
State College deescalates volatile situations	-.221	.411	.591	.802
Incident = Violent Felony	1.260	.698	.017	3.525
Incident = Non-Violent Felony	-.549	.511	.283	.578
Incident = Violent Misdemeanor	1.185	.522	.023	3.272
Incident = Non-Violent Misdemeanor	.310	.367	.397	1.364
Hard Techniques / Non-Lethal Weapons				
Intercept	-1.829	1.257	.146	
Age	.000	.224	.999	1.000
Earned College Credits	-.025	.004	.000	.976
Gender = Male	1.433	1.080	.185	4.191
Race = Black	1.011	.616	.101	2.749
Race = Hispanic	-.813	1.133	.473	.444
Race = Asian	-.535	1.389	.700	.586
State College provides better communication skills	.484	.449	.280	1.623
State College deescalates volatile situations	-.233	.572	.683	.792
Incident = Violent Felony	2.468	.798	.002	11.797
Incident = Non-Violent Felony	.123	.633	.846	1.131
Incident = Violent Misdemeanor	1.714	.644	.008	5.551
Incident = Non-Violent Misdemeanor	.336	.523	.521	1.399

As seen in Table 6.2, denoted by an asterisk, there were statistically significant relationships between the focal and other predictor variables compared to a randomized reported level of force used to gain compliance in arrest situations. For every one increase in earned college credits, the probability of the use of soft techniques as compared to no force decreased by 1.6% ($p < .001$).

In testing the model effects of earned college credits to a randomized level of force used, the level of crime associated with the arrest where a randomized level of force is measured also had a significant impact on the level of force used. When the crime was a violent misdemeanor, officers used soft techniques as compared to no force 3.27 times more often ($p < .05$).

In analyzing the use of hard techniques/non-lethal weapons, for every one increase in earned college credits, the probability of the use of hard techniques/non-lethal weapons as compared to no force decreased by 2.4% ($p < .001$).

In testing the model effects of earned college credits to the highest level of force used, the level of crime associated with the arrest where a randomized level of force used was measured also had a significant impact on the level of force used. When the crime was a violent felony, officers used hard techniques/non-lethal weapons as compared to no force 11.80 times more often ($p < .005$). When the crime was a violent misdemeanor, officers used hard techniques/non-lethal weapons as compared to no force 5.55 times more often ($p < .01$).

Research Question 2 (Part 1): A multinomial logistic regression analysis was conducted and resulted in the following output with the focal independent variable of earned college degree and the dependent variable measured as the highest level of force used from the last reported five

arrests of each participant. The Pseudo R-Squared (Cox and Snell = .400) explained approximately half of the variation in the dependent variable.

Table 6.3 Parameter Estimates / Multinomial Logistic Regression College Degree (focal IV) versus Force Level (focal DV) – based on highest reported use of force.

Parameter Estimates				
Highest Reported Force Used (per participant)	B	Std. Error	Sig.	Exp(B)
Soft Techniques				
Intercept	-.044	.631	.945	
Age	.087	.155	.573	1.091
Gender = Male	-.180	.423	.671	.836
Race = Black	2.170	.687	.002	8.760
Race = Hispanic	.615	.683	.368	1.850
Race = Asian	-1.310	1.134	.248	.270
State College provides better communication skills	.524	.399	.190	1.688
State College deescalates volatile situations	.493	.390	.207	1.637
Participant has Graduate Degree	-1.625	.532	.002	.197
Participant has Undergraduate Degree Only	-.413	.381	.279	.662
Incident = Violent Felony	.484	.846	.567	1.623
Incident = Non-Violent Felony	-.817	.432	.058	.442
Incident = Violent Misdemeanor	.814	.527	.123	2.258
Incident = Non-Violent Misdemeanor	-4.22	.334	.206	.656
Hard Techniques / Non-Lethal Weapons				
Intercept	.635	.770	.410	
Age	.135	.184	.464	1.145
Gender = Male	.182	.587	.756	1.200
Race = Black	2.302	.754	.002	9.997
Race = Hispanic	-1.498	1.054	.155	.224
Race = Asian	-.976	.948	.303	.377
State College provides better communication skills	.977	.402	.015	2.657
State College deescalates volatile situations	-1.404	.457	.002	.246
Participant has Graduate Degree	-3.163	.633	.000	.042
Participant has Undergraduate Degree Only	-2.359	.367	.000	.094
Incident = Violent Felony	2.483	.803	.002	11.973
Incident = Non-Violent Felony	-.626	.499	.210	.535
Incident = Violent Misdemeanor	1.780	.600	.003	5.932
Incident = Non-Violent Misdemeanor	-.300	.436	.491	.741

As seen in Table 6.3, denoted by an asterisk, there are statistically significant relationships between the focal and other predictor variables compared to the highest reported level of force used to gain compliance in arrest situations. Participants with a graduate degree used soft techniques versus no physical force to gain compliance in arrest situations 80.30% more often compared to participants without a graduate degree ($p < .005$).

In testing the model effects of earned college degree to the highest level of force used, Black officers used soft techniques versus no physical force to gain compliance in arrest situations 10 times more often compared to non-black officers ($p < .005$).

In analyzing the use of hard techniques/non-lethal weapons, officers with a graduate degree used hard techniques/non-lethal weapons versus no physical force to gain compliance in arrest situations 95.8% less often as compared to officers without a graduate degree ($p < .001$). Officers with only an undergraduate degree only used hard techniques/non-lethal weapons versus no physical force to gain compliance in arrest situations 90.6% less often compared to officers without only an undergraduate degree ($p < .001$).

In testing the model effects of earned college degree to the highest level of force used, Black officers used hard techniques/non-lethal force versus no physical force to gain compliance in arrest situations 10 times more often as compared to non-black officers ($p < .005$).

In testing the model effects of earned college degree to the highest level of force used, Officers who stated a college education provides police officers with better communication skills used hard techniques/non-lethal weapons versus no physical force to gain compliance in arrest situations 2.66 times more often compared to officers who stated they do not, or have no opinion

($p < .05$). Officers who stated a college education deescalates volatile situations used hard techniques/non-lethal weapons versus no physical force to gain compliance in arrest situations 75.4% less often compared to officers who stated it does not, or have no opinion ($p < .005$).

The level of crime associated with the arrest where the highest level of force used also had a significant impact on the level of force used. In testing the model effects of earned college degree to the highest level of force used, when the crime was a violent felony, officers used hard techniques/non-lethal weapons compared to no force 11.97 times less often ($p < .005$). When the crime was a non-violent felony, officers used hard techniques / non-lethal weapons compared to no force 46.5% less often ($p < .001$).

Research Question 2 (Part 2): A multinomial logistic regression analysis was conducted and resulted in the following output with the focal independent variable of college degree and the dependent variable measured as a randomized level of force used from the last reported five arrests of each participant. The Pseudo R-Squared (Cox and Snell = .284) explained approximately one-third of the variation in the dependent variable.

Table 6.4 Parameter Estimates / Multinomial Logistic Regression College Degree (focal IV) versus Force Level (focal DV) – based on a randomized incident reported.

Parameter Estimates				
Randomized Use of Force	B	Std. Error	Sig.	Exp(B)
Soft Techniques				
Intercept	-.313	.702	.656	
Age	-.094	.170	.579	.910
Gender = Male	.222	.504	.660	1.248
Race = Black	.448	.518	.387	1.565
Race = Hispanic	-.914	.869	.293	.401
Race = Asian	-.083	.996	.934	.921
State College provides better communication skills	.539	.376	.152	1.714
State College deescalates volatile situations	-.369	.400	.357	.692
Participant has Graduate Degree	-2.171	.571	.000	.114
Participant has Undergraduate Degree Only	-1.806	.335	.000	.164
Incident = Violent Felony	.949	.692	.170	2.582
Incident = Non-Violent Felony	-.534	.514	.299	.586
Incident = Violent Misdemeanor	1.302	.516	.012	3.678
Incident = Non-Violent Misdemeanor	.346	.369	.348	1.414
Hard Techniques / Non-Lethal Weapons				
Intercept	-1.641	1.258	.192	
Age	-.194	.225	.390	.824
Gender = Male	1.399	1.071	.192	4.051
Race = Black	.797	.586	.174	2.219
Race = Hispanic	-1.264	1.205	.294	.283
Race = Asian	-.570	1.346	.672	.566
State College provides better communication skills	.588	.445	.186	1.801
State College deescalates volatile situations	-.831	.558	.136	.436
Participant has Graduate Degree	-1.787	.650	.006	.167
Participant has Undergraduate Degree Only	-2.919	.477	.000	.054
Incident = Violent Felony	1.850	.776	.017	6.362
Incident = Non-Violent Felony	.094	.637	.883	1.098
Incident = Violent Misdemeanor	1.893	.639	.003	6.642
Incident = Non-Violent Misdemeanor	.406	.528	.441	1.501

As seen in Table 6.4, denoted by an asterisk, there were statistically significant relationships between the focal and other predictor variables compared a reported randomized level of force used to gain compliance in arrest situations. Officers with a graduate degree used soft techniques versus no physical force to gain compliance in arrest situations 88.6% less often compared to participants without a graduate degree ($p < .001$). Officers who earned only an undergraduate degree used soft techniques versus no physical force to gain compliance in arrest situations 83.6% less often compared to participants who did not only earn an undergraduate degree ($p < .001$).

The level of crime associated with the arrest where a randomized reported level of force used was measured had the only statistically significant impact on the level of force used. In testing the model effects of earned college degree to a randomized level of force used and when the crime was a violent felony, officers used hard techniques/non-lethal weapons as compared to no force 6.36 times more often ($p < .05$). When the crime was a violent misdemeanor, officers used hard techniques / non-lethal weapons as compared to no force 6.64 times more often ($p < .01$).

In analyzing the use of hard techniques/non-lethal weapons, officers with a graduate degree used hard techniques/non-lethal weapons versus no physical force to gain compliance in arrest situations 99.4% less often compared to officers without a graduate degree ($p < .01$). Officers who earned only an undergraduate degree used hard techniques/non-lethal force versus no physical force to gain compliance in arrest situations 94.6% less often compared to participants who did not only earn an undergraduate degree ($p < .001$).

The level of crime associated with the arrest where a randomized level of force used had a significant impact on the level of force used. When the crime was a violent felony, officers used hard techniques/non-lethal weapons 6.63 times more often compared to no force ($p < .05$). When the crime was a violent misdemeanor, officers used hard techniques / non-lethal weapons as compared to no force 6.64 times more often ($p < .005$).

Research Question 3 (Part 1): A Poisson Regression was performed to test the significance of the focal independent variable, college credits earned by the officer, along with other variables that impact the number of times physical force was used by the officer to gain compliance during arrest situations. The crime level associated with the highest level of force reported was used as a predictor variable. The Goodness of Fit value was 1.346 indicating values in the model were not overly dispersed. The Omnibus Test showed a significance of $p < .001$ indicating that the model fit was a significant improvement over the null.

Table 6.5 Poisson Regression Results, Independent Variables (focal IV = College Credits, predictor variable = crime level associated with the highest level of force reported) versus the Number of Times Force Used.

Parameter Estimates				
Parameter	B	Std. Error	Sig.	Exp(B)
(Intercept)	.984	.1594	.000	2.676
Earned College Credits	-.010	.0008	.000	.990
Race = Black	.384	.1229	.002	1.468
Race = Hispanic	.007	.2367	.975	1.008
Race = Asian	-.021	.2657	.937	.979
State College provides better communication skills	.250	.0970	.010	1.284
State College deescalates volatile situations	-.154	.1246	.217	.858
Age	.035	.0496	.477	1.036
Incident = Violent Felony	.391	.1778	.028	1.479
Incident = Non-Violent Felony	-.086	.1368	.527	.917
Incident = Violent Misdemeanor	.141	.1292	.275	1.151
Incident = Non-Violent Misdemeanor	-.010	.1094	.925	.990

In testing the model effects, the number of college credits earned showed a significant relationship to the number of times physical force was used in arrest situations. A one-credit increase in the college credits earned corresponds to a 1% decrease in the number of times force was used ($p < .001$).

In testing the model effects of earned college credits to the highest level of force used, Black officers used force a greater number of times, 1.47 times more often compared to non-black officers ($p < .005$).

Those incidents that related to the highest level of force used show a statistical significance. Incidents that involved violent felonies had force used a greater number of times, 1.5 times more often ($p < .05$).

Research Question 3 (Part 2): A Poisson Regression was performed to test the significance of the focal independent variable, college credits earned by the participant, along with other variables that impact the number of times physical force was used by the officer to gain compliance during arrest situations. The crime level associated with a randomized level of force reported was used as a predictor variable. The Goodness of Fit value was 1.358 indicating values in the model were not overly dispersed. The Omnibus Test showed a significance of $p < .001$ indicating that the model fit was a significant improvement over the null.

Table 6.6 Poisson Regression Results, Independent Variables (focal IV = College Credits, predictor variable = the crime level associated with a randomized level of force reported) versus the Number of Times Force Used.

Parameter Estimates				
Parameter	B	Std. Error	Sig.	Exp(B)
(Intercept)	1.063	.1617	.000	2.896
Earned College Credits	-.009	.0008	.000	.991
Race = Black	.382	.1230	.002	1.465
Race = Hispanic	.011	.2355	.963	1.011
Race = Asian	-.053	.2677	.842	.948
State College provides better communication skills	.216	.0957	.024	1.241
State College deescalates volatile situations	-.186	.1248	.136	.830
Age	.038	.0493	.444	1.038
Incident = Violent Felony	.075	.1890	.693	1.077
Incident = Non-Violent Felony	-.246	.1434	.086	.782
Incident = Violent Misdemeanor	.089	.1348	.510	1.093
Incident = Non-Violent Misdemeanor	-.072	.1065	.498	.930

In testing the model effects, the number of college credits earned showed a significant relationship to the number of times physical force was used in arrest situations. A one-credit increase in the college credits earned corresponds to a 0.9% decrease in the number of times force was used ($p < .001$).

In testing the model effects of earned college degree to a randomized level of force used, Black officers used force a greater number of times, 1.47 times more often compared to non-black officers ($p < .005$).

In testing the model effects of earned college degree to a randomized level of force used, officers who stated that college provides better communication skills used force a greater number of times, 1.24 times more often compared to officers who stated they do not, or have no opinion, ($p < .05$).

Research Question 4 (Part 1): A Poisson Regression was performed to test the significance of the focal independent variable, college degree earned by the officer, along with other variables that impact the number of times physical force was used by the officer to gain compliance during arrest situations. The crime level associated with the highest level of force reported was used as a predictor variable. The Goodness of Fit value was 1.318 indicating values in the model were not overly dispersed. The Omnibus Test showed a significance of $p < .001$ indicating that the model fit was a significant improvement over the null.

Table 6.7 Poisson Regression Results, Independent Variables (focal IV = College Degree, predictor variable = crime level associated with the highest level of force reported) versus the Number of Times Force Used.

Parameter Estimates				
Parameter	B	Std. Error	Sig.	Exp(B)
(Intercept)	.978	.1600	.000	2.659
Race = Black	.426	.1238	.001	1.532
Race = Hispanic	-.131	.2372	.581	.877
Race = Asian	-.014	.2658	.958	.986
State College provides better communication skills	.315	.0975	.001	1.370
State College deescalates volatile situations	-.316	.1202	.008	.729
Age	-.003	.0497	.957	.997
Incident = Violent Felony	.182	.1765	.302	1.200
Incident = Non-Violent Felony	-.169	.1364	.215	.844
Incident = Violent Misdemeanor	.131	.1299	.680	1.140
Incident = Non-Violent Misdemeanor	-.045	.1100	.680	.956
Has Graduate Degree	-1.234	.1768	.000	.291
Has Undergraduate Degree Only	-1.030	.0970	.000	.357

In testing the model effects, the college degree earned showed a significant relationship to the number of times physical force was used in arrest situations. Officers with a graduate degree used force a greater number of times, 70.9% less often compared to officers who did not earn a graduate degree ($p < .001$). Officers with only an undergraduate degree used force a greater number of times, 64.3% less often compared to officers who did not earn an undergraduate degree ($p < .001$).

In testing the model effects, the college degree earned showed a significant relationship to the number of times physical force was used in arrest situations. Black officers used force a greater number of times, 1.53 times more often compared to non-black officers were ($p < .005$).

Officers who state that college provides better communication skills used force a greater number of times, 1.37 times more often compared to officers who stated they do not, or have no opinion ($p < .005$). Officers who state a college education deescalates volatile situations used force a greater number of times, 27.1% less often compared to officers who stated it does not, or have no opinion ($p < .01$).

Research Question 4 (Part 2): A Poisson Regression was performed to test the significance of the focal independent variable, college degree earned by the officer, along with other variables that impact the number of times physical force was used by the officer to gain compliance during arrest situations. The crime level associated with a randomized level of force reported was used as a predictor variable. The Goodness of Fit value was 1.337 indicating values in the model were not overly dispersed. The Omnibus Test showed a significance of $p < .001$ indicating that the model fit was a significant improvement over the null.

Table 6.8 Poisson Regression Results, Independent Variables (focal IV = College Degree, predictor variable = crime level associated with a randomized level of force reported) versus the Number of Times Force Used.

Parameter Estimates				
Parameter	B	Std. Error	Sig.	Exp(B)
(Intercept)	1.012	.1630	.000	2.750
Race = Black	.421	.1234	.001	1.523
Race = Hispanic	- .143	.2364	.546	.867
Race = Asian	- .074	.2674	.781	.929
State College provides better communication skills	.277	.0962	.004	1.319
State College deescalates volatile situations	- .317	.1213	.009	.728
Age	.003	.0493	.958	1.003
Incident = Violent Felony	- .064	.1885	.735	.938
Incident = Non-Violent Felony	- .255	.1435	.076	.775
Incident = Violent Misdemeanor	.172	.1345	.200	1.188
Incident = Non-Violent Misdemeanor	- .059	.1066	.580	.943
Has Graduate Degree	- 1.197	.1770	.000	.302
Has Undergraduate Degree Only	- 1.104	.0974	.000	.363

In testing the model effects, the college degree earned showed a significant relationship to the number of times physical force was used in arrest situations. Officers with a graduate degree used force a greater number of times, 69.8% less often compared to officers without a graduate degree ($p < .001$). Officers with only an undergraduate degree used force a greater number of times, 63.7% less often compared to officers without only an undergraduate degree ($p < .001$).

In testing the model effects, the college degree earned showed a significant relationship to the number of times physical force was used in arrest situations. Black officers used force a greater number of times, 1.52 times more often compared to non-black officers ($p < .005$).

Officers who stated that college provides better communication skills used force a greater number of times, 1.32 times more often compared to officers who stated they do not, or have no opinion ($p < .005$). Officers who stated a college education deescalates volatile situations used force a greater number of times, 27.2% less often compared to officers who stated it does not, or have no opinion ($p < .01$).

In summary, Table 6.9 represents the findings from the four Multinomial Regression Models that show the predictors of the level of force used in gaining compliance during arrest situations that show statistical significance.

Table 6.9 Combined Results of Multinomial Regression Tests (Exp(B)/p values)

	Measurement Highest Level of Force		Measurement Randomized Level of Force	
	DV = Soft Techniques	DV = Hard Techniques / Non- Lethal Weapons	DV = Soft Techniques	DV = Hard Techniques / Non- Lethal Force
Earned College Credits	.995 <i>p</i> = .053	.974 <i>p</i> < .001	.984 <i>p</i> < .001	.976 <i>p</i> < .001
Earned College Degree (Graduate)	.197 <i>p</i> = .002	.042 <i>p</i> < .001	.114 <i>p</i> < .001	.167 <i>p</i> = .006
Earned College Degree (Undergraduate)	Not Significant	.094 <i>p</i> < .001	.164 <i>p</i> < .001	.054 <i>p</i> < .001
<i>Focal IV =></i> Race = Black	<u>Credits</u> 6.735 <i>p</i> = .004	<u>Degree</u> 8.760 <i>p</i> = .002	<u>Credits</u> 10.824 <i>p</i> = .002	<u>Degree</u> 9.997 <i>p</i> = .002
<i>Focal IV =></i> Better Communication Skills		<u>Credits</u> 2.791 <i>p</i> = .016	<u>Degree</u> 2.657 <i>p</i> = .015	
<i>Focal IV =></i> Deescalate Volatile Situations		<u>Credits</u> .344 <i>p</i> = .025	<u>Degree</u> .246 <i>p</i> = .002	
<i>Focal IV =></i> Crime Level Violent Felony		<u>Credits</u> 21.735 <i>p</i> < .001	<u>Degree</u> 11.973 <i>p</i> = .002	<u>Credits</u> 11.797 <i>p</i> = .002 <u>Degree</u> 6.362 <i>p</i> = .017
<i>Focal IV =></i> Crime Level Violent Misdemeanor		<u>Credits</u> 5.923 <i>p</i> = .004	<u>Degree</u> 5.932 <i>p</i> = .003	<u>Credits</u> 3.272 <i>p</i> = .023 <u>Degree</u> 3.678 <i>p</i> = .012 <u>Credits</u> 5.551 <i>p</i> = .008 <u>Degree</u> 6.642 <i>p</i> = .003

In summary, Table 6.10 Represents the collective findings for the four Poisson Regression Analyses that show the influence of the predictor variables upon the dependent variable, the number of times force was used to gain compliance in arrest situations.

Table 6.10 Combined Results of Poisson Regression Tests

	Measurement: DV = Number of Times the Highest Level of Force was Used		Measurement DV = Number of Times a Random Level of Force was Used	
	<u>Credits</u>		<u>Credits</u>	
Earned College Credits	.990 $p < .001$.991 $p < .001$	
		<u>Degree</u>		<u>Degree</u>
Has Graduate Degree		.291 $p < .001$.302 $p < .001$
		<u>Degree</u>		<u>Degree</u>
Has Undergraduate Degree		.357 $p < .001$.363 $p < .001$
	<u>Credits</u>	<u>Degree</u>	<u>Credits</u>	<u>Degree</u>
Race = Black	1.468 $p = .002$	1.532 $p = .001$	1.465 $p = .002$	1.523 $p = .001$
		<u>Degree</u>	<u>Credits</u>	<u>Degree</u>
Better Communication Skills		1.370 $p = .001$	1.241 $p = .024$	1.319 $p = .004$
		<u>Degree</u>		<u>Degree</u>
Deescalate Volatile Situations		.729 $p = .008$.728 $p = .009$
	<u>Credits</u>			
Crime Level Violent Felony	1.479 $p = .028$			

Summary of Research Question Variables:

The number of earned college credits by a police officer has an effect on the level of force they used in gaining compliance in arrest situations. When the earned college credits were analyzed based on the highest level of force reported, for every one increase in earned college

credits, the probability of the use of soft techniques as compared to no force decreased by 0.5% ($p = .053$). When the earned college credits were analyzed based on the highest level of force, for every one increase in earned college credits, the probability of the use of hard techniques/non-lethal weapons compared to no force decreased by 2.6% ($p < .001$). When the earned college credits were analyzed based on a randomized reported level of force, for every one increase in earned college credits, the probability of the use of soft techniques as compared to no force decreased by 1.6% ($p < .001$). When the earned college credits were analyzed based on a randomized reported level of force, for every one increase in earned college credits, the probability of the use of hard techniques/non-lethal weapons as compared to no force decreased by 2.4% ($p < .001$).

The number of earned college credits by a police officer has an effect on the amount of times physical force was used to gain compliance in arrest situations. When the earned college credits were analyzed using a predictor variable of a crime level based on the highest level of force used, a one credit increase in earned college credits corresponds to a 1.0% decrease in the number of times force was used ($p < .001$). When the earned college credits were analyzed using a predictor variable of a crime level based on a randomized level of force used, a one credit increase in earned college credits corresponds to a 0.9% decrease in the number of times force was used ($p < .001$).

The earned college degree of a police officer had an effect on the level of force they used in gaining compliance in arrest situations. When the effects were analyzed based on the highest level of force reported, officers that earned a graduate degree were 80.3% less likely to used soft techniques versus no physical force to gain compliance during arrest situations 80.3% less often

($p < .005$) and officers that earned an undergraduate degree only had no statistically significant relationship in using soft techniques versus no physical force when compared to officers without an undergraduate degree only. When the effects were analyzed based on the highest level of force reported, officers that earned a graduate degree used hard techniques/non-lethal weapons versus no physical force 95.8% less often ($p < .001$) and officers that earned an undergraduate degree only used hard techniques/non-lethal weapons versus no physical force were 90.6% times less often ($p < .001$). When the effects were analyzed based on a randomized level of force reported, officers who earned a graduate degree used soft techniques versus no physical force to gain compliance in arrest situations 88.6% less often compared to officers who did not earn a graduate degree ($p < .001$). Officers who earned an undergraduate degree only used soft techniques compared to no force to gain compliance of a suspect in arrest situations 83.6% less often compared to officers who did not earn only an undergraduate degree ($p < .001$). In analyzing the use of hard techniques/non-lethal weapons, officers with a graduate degree used hard techniques/non-lethal weapons as compared to no force to gain compliance of a suspect in arrest situations as compared to officers without a graduate degree 99.4% less often ($p < .01$). Officers who earned only an undergraduate degree used hard techniques/non-lethal weapons versus no physical force to gain compliance of a suspect in arrest situations 94.6% less often compared to officers who did not earn only an undergraduate degree ($p < .001$).

The earned college degree by a police officer had an effect on the amount of times physical force was used to gain compliance in arrest situations. When the earned college degree was analyzed using a predictor variable of a crime level based on the highest level of force used, officers with a graduate degree used force a greater number of times, 70.9% less often compared to officers without a graduate degree ($p < .001$) and officers with an undergraduate degree only

used force a greater number of times, 64.3% less often compared to officers without only an undergraduate degree ($p < .001$). When the earned college degree was analyzed using a predictor variable of a crime level based a randomized level of force used, officers with a graduate degree used force a greater number of times, 69.8% less often compared to officers without a graduate degree ($p < .001$) and officers with only an undergraduate degree used force a greater number of times, 63.7% less often compared to officers without only an undergraduate degree ($p < .001$).

Chapter 7: Discussion and Conclusion

The findings of this study yielded results that were consistent with previous research. As this study used a different method in collecting data, specifically, recalling the last five arrests of the participants, additional associations were able to be presented that show the positive impact of college education upon police officer use of force. Analyses of the data resulted in support for all four hypotheses (H_1 : There is an association between the number of college credits earned by a police officer and the level of force used against a suspect to gain compliance while arresting them, H_2 : There is an association between the college degree earned by a police officer and the level of force used against a suspect to gain compliance while arresting them, H_3 : There is an association between the number of college credits earned by a police officer and the number of times physical force was used against a suspect to gain compliance while arresting them, H_4 : There is an association between the college degree earned by a police officer and the number of times physical force was used against a suspect to gain compliance while arresting them.)

When analyzing the college credits earned by police officers, both a multinomial logistical regression test and Poisson regression test confirmed the results of the previous literature published over a decade ago. These results however were more specific, showing that for every one-college credit earned increase, the result was a decrease in the use of physical force. Specifically, this decrease equated to 0.5% in the use of soft techniques as compared to no force and a decrease of 2.6% in the use of hard techniques/non-lethal weapons compared to no force. Furthermore, for every one-college credit earned increase, there was a 1.0% decrease in the number of times force was used in the last five reported arrests when based on the highest level of force reported. (A 0.9% decrease was reported when the force level was measured based on a randomized level of force reported). This is an important finding in that many police

departments vary in their applicant requirements, some requiring an earned credit amount, regardless of degree.

The findings for the impact of the college degree level earned also was in line with the results of the impact of college credits earned. Officers that earned a graduate level degree used soft techniques versus no physical force to gain compliance of a suspect 80.3% less often than those officers without a graduate degree based on the highest level of force used, and 88.6% less often when based on a randomized level of force. More importantly, officers that earned a graduate level degree used hard techniques/non-lethal force versus no physical force 95.8% less often than those officers without a graduate degree based on the highest reported level of force, and 99.4% less often when based on a randomized level of force. Similarly, officers with an undergraduate degree used soft techniques compared to no force 83.6% less often than those without an undergraduate degree when based on a randomized level of force. Officers with an undergraduate degree used hard techniques compared to no force 90.6% less often than officers without an undergraduate degree when based on the highest level of force used and 94.6% less often when based off a randomized level of force. When the earned college degree was analyzed using a predictor variable of a crime level based on the highest level of force used, officers with a graduate degree used force a greater number of times, 70.9% less often compared to officers without a graduate degree and officers with an undergraduate degree, used force a greater number of times, 64.3% less often compared to officers without an undergraduate degree. When the earned college degree was analyzed using a predictor variable of a crime level based on a randomized level of force used, officers with a graduate degree used force a greater number of times, 69.8% less often compared to officers without a graduate degree and officers with an undergraduate degree used force a greater number of times, 63.7% less often compared to

officers without an undergraduate degree. The impact and effect of a college degree on police officer use of force is a significant finding in this study in contemporary policing.

Limitations

Every study inevitably has limitations that must be identified. Truthful responses from the participants and the willingness of police departments to conduct a survey, are factors that need to be addressed. Immediately preceding the survey, participants received a notice (Appendix II) detailing the steps taken in this research to ensure their anonymity. More so, participants had the option to take the survey at their convenience on a computer/smartphone/tablet of their choice. Details regarding the extent of the survey pool were also be explained to the participants to ensure the large sample size and lack of specific identifying factors as to the participants' identity. This was done in effort to elicit the cooperation of participants to alleviate hesitations. Even with this approach, only 143 departments out of 2,046 participated in the survey (6.99%). This is a considerable low response rate given the average of participants per department that responded was only 2.97 participants per department. If the total officers per department were calculated into this equation, the response rate would be extremely less. This is problematic in that research by self-reported surveys to police officers often yields the highest results, although those results are far below other self-reported studies. Less than an average of three participants per department can also be a cause of concern that the sample in this study was not an accurate representation of police officers throughout the six states, or nationwide. To address overall concerns in studies involving self-reported police officer data, this can be problematic to obtain an appropriate, robust and representative sample. Other factors such as when the degree was earned in relation

to the use of force incidents were not deciphered, which if addressed, might show a different relationship.

Another key limitation in this study is related to the method of analysis used. In order to properly show the statistical analyses issues seen in this study, it is necessary to first address the method that was used to analyze the variables. Although the majority of previous studies measured the independent variables' influence on the level of force used (dependent variable), the manner in which the dependent variable was measured, varied. Some studies, as discussed earlier, measured the dependent variable of the level of force as an interval or ratio measurement on a scale from 0 (no force) to 6 (lethal force). The intent behind using this level of measurement, allowed for simple linear regression to obtain predictive coefficients to describe the relationship, if any, between the independent and dependent variables. This method was dismissed by this researcher as the levels of force, although escalating and in order, do not have distinguishable differences between them. To say that level 2 use of force, (the use of hard techniques) is twice as much as a level 1 use of force, (the use of soft techniques) does not convey the relationship properly. More so, to analyze a level 6 use of force as six times greater than a use of level 1 force is not congruent to finding that the use of deadly physical force is six times greater than or exponentially comparable to the use of soft techniques. This was the primary reason that a multiple linear regression model would not be an appropriate measurement for this study. Instead, and like a few other previous studies, a multinomial logistic regression model was deemed the best fitting model. Although the dependent variable was still referred to on a scalar measurement, it was best treated as an ordinal measurement that was measured as a nominal one, with the category of each force representing the level of force used. The reference

category was no force, as the analysis measured the use of force levels compared to using no force based on the associated influencing factors.

The second concern was the design of the study instrument. The survey questioned participants as to their last five arrests. For each arrest, the participant was asked the level of force used to gain compliance of an arrested suspect along with the level of crime the suspect was being arrested for as a contextual variable. The other variables identified by the participant, (earned college degree, earned college credits, opinion questions regarding college education in policing, age, race and gender) all remained constant. Analyzing the individual level of force for each arrest proved to be difficult, as when the five incidents were treated as five separate responses, the constants were quintupled, causing analysis issues. The option of addressing the average of the five levels of force used by each participant also proved to be problematic as they could not be correlated directly to the crime level associated with that particular arrest. The crime level was a key contextual variable that could not be overlooked. The next avenue explored was using the median value of the force level of each participant. This also proved problematic for several reasons. The first, the lack of association to the crime level variable as previously described, and the second, the accurate representation of the level of force used by the officer. For example, if an officer used no force four times out of their last five arrests and deadly physical force once, the value for the level of force correlating to that participant would be '0'. Even a scenario where an officer used no force three times and deadly physical force twice, the resulting median variable would be still be '0'. The multinomial regression model was still used to attempt to see if an association existed amongst the variables. Several problems were encountered in this process. Low cell counts for example was the most common, as the resulting median values ranged from 0 to 2. Although this was in line with previous literature

that the levels of force used in policing were widely at the lower end of the spectrum, this analysis prevented any resulting responses to be referenced at the level 3 use of force or higher unless at least three of the five arrests resulted in using level 3 force or higher. This study resulted in at least 20% of incidents that used force at level 3 or higher, which would have been not properly represented using this method of analyzing the dependent variable by its median value.

The third concern in the analysis of the data collected was that of 15 responses that were identified as inconsistent. The inconsistencies were found in the responses to the earned college credits and degree earned. Fifteen of the responses provided answers indicating earned college credits that were not equivalent to the degree earned that they selected. It is unknown if one or both of the questions were answered incorrectly and re-interviewing the participant would not be possible as the survey was anonymously distributed. An assumption could have been made that one inconsistent response did not necessarily relate to the rest of the participant's responses, however, given that both variables were focal independent variables in the research questions and that the questionable responses represent less than 4.0% of the overall responses, the 15 responses were removed from the analysis. Before the removal, several analyses were performed on the 15 inconsistent responses. Those analyses included creating a dummy variable to detail the interactions between the inconsistent response and the median use of force variable, as the median use of force was deemed the best measurement for measuring the use of force response per participant. The interaction variables, when added to the other variables in the study, did not fit the multinomial regression model as extreme lower and upper bounds resulted. This in part, could have been due to the median variable over-representing the '0' category of 'no force.'

Given the sampling method, the concern for nested data also played a role in the analysis. Due to the nature of the variables studied, clustered responses were a concern as to not lead to misleading results. A spurious correlation could exist when collecting data from multiple police departments. More so, a lack of independence between officer responses from the same department can result in inaccurate p values. The leadership of the department or the department's environment might have an impact on its officers regarding the use of force, or restrictions on the use of force. Although the literature made no mention of these concerns it was necessary to address. A variable indicating departments with two or more responses was created and analyzed through a Pearson Chi-Square test to see if there was a relationship between the department and response for the level of force used. The results were that no relationship existed, therefore the concern for nested data was in line with previous literature and the reasonable assumption that the 143 departments from six states from geographically different areas of the country did not have a common factor that would impact the level of force used in an arrest.

The focus of this study was to measure the impact of college education upon police officer use of force, however the focal independent variable and how it was measured was a cause of concern that ought to be addressed in future studies. As previously mentioned, when the officer received their degree as compared to their reported force, was not analyzed. The type of degree received was also not ascertained. More importantly, the knowledge that the officer learned in obtaining their degree was not identified in this study. This is an important aspect as curriculum varies within colleges as well as the retention of information by students. The ability to apply what has been learned in college to the practical aspects of police behavior is also a

necessary component to show if a relationship between college education and police conduct exists.

Measuring the knowledge that an officer received from college compared to the force used as a police officer is an integral aspect in understanding the relationship between education and use of force. Furthermore, interviewing officers as to the other benefits they received from college, such as social exposure, could benefit reaching the relationship between college and police officer use of force.

Lastly, another limitation was that this study failed to address the situation that was faced by the officer with completeness. Although the crime level was associated with the arrest, that crime could have been warrant-based or part of a multi-officer response. Furthermore, other factors such as time, location, suspect/officer characteristics, experience and number of officers present could have led to a better portrayal of the arrest situation as a contextual factor.

Ethical Considerations

Ethical considerations in any research involving human subjects must be identified and acknowledged. The design of the data instrument has minimized some ethical concerns, specifically the identification of the participant and/or their department. Questions as to the demographics of the participant were limited to age, race and gender to ensure a lack of an identifiable connection between the participant and survey answers. Anonymity in the collection of data was also paramount in protecting those who participated. Another concern was that police officer participants who did not believe that college education impacts policing, might have dismissed taking the study, leaving only those who might be supportive of college education, to take part in the study hence biasing the result.

Policy Implications

The policy implications of this research can influence police departments nationwide in their applicant process. As an association is shown to exist in this study, police administrators can consider college education in their applicant selection process based on the empirical evidence this study adds to existing literature. It is important that police agencies recognize the impact of college education on police officer skill sets, as a whole, as well upon the decision to use force. “Law enforcement is a demanding field which requires the ability to quickly apply retained knowledge, [and] engage in problem solving... Critical thinking has become increasingly important to policing, given the complexities of our modern society” (Paprotta, 2012, p. 131).

Police departments ought to consider the results of this study along with previous literature as they look towards programs that might incentivize their current officers to pursue college education. At a minimum, police departments can consider their own officer characteristics and evaluate the factors that lead towards use of force within their department, specifically college education, to determine if their department would be best suited with college educated officers.

Future Research

Given that the results supported the positive impact of police officer college education on the use and level of force used in arrest situations, future research can explore this relationship further. Other control or mediating variables can be identified such as continued education throughout an officer’s career, as well as the specific degree in which the police officer earned.

This could lead to a better understanding of what aspects in particular regarding a college education can relate to police behavior. Evaluating the education level in relationship to when the force was used can have an impact on the results of this study. If a policy implication from this study is to consider a college education as a factor in hiring police officers, then a study where a police officer received their education at the beginning of their career could be a stronger focal independent variable compared to the level of force used throughout their arrests. Additionally, the type of courses studied and/or degrees earned can identify if certain curriculum can be associated with police officer performance. Lastly, as mentioned in the limitations section, a better analysis of the arrest situation could prove to have added a more substantial conclusion as more contextual factors ought to be analyzed to show the influence between a college education and the level of force used.

Summary

Substantial research and literature support a positive benefit of college education in policing. However, most literature is more than a decade old. With the constant evolution of policing and society, it is imperative to continue research in policing to keep pace with these changes. Furthermore, many existing studies vary in their controlling for the abundant level of diversity in policing. This diversity includes variations in policing strategies, policing policies and community dynamics. It is important that future research recognizes and addresses these challenges as much as possible.

Researching the evolving police officer roles and required skills should continually be at the forefront of police administrators' objectives. As a college degree is a factor in promoting a more professional police officer, more specifically, one that is likely to use less physical force, or

have less instances of the use of physical force, we can hope to influence police department policies to improve policing universally and continue to research this phenomena regularly.

The prediction of police behavior is complex and it is necessary to explore the avenues to which we can predict behaviors, both positive and negative, in hopes of improving policing nationwide. Enacting new policies to improve policing and continual police reform is necessary while using academic research as foundational evidence. These methods of improvement ought to include raising the educational requirement of police officers to afford them with the enhanced abilities to apply to the growing set of job skills needed in policing. More so, identifying the relationship and positive impact that college education has on the use and level of force used, can lead to the elimination or at least, reduction of liable behavior. More importantly, equipping police officers with additional tools that can minimize excessive use of force, benefits policing and society as a whole. As the need for police reform is paramount, one avenue often overlooked is the assessment and reformation of police applicant policies to include college education requirements that this study posits that a college education for a police officer has a positive influence on the level and amount of force they use in gaining compliance in arrest situations.

APPENDICES

I. Department Solicitation Letter

<DATE>

<MERGE>Department
<MERGE>Address 1
<MERGE>Address 2
<MERGE>Address 3

Dear Chief <MERGE>:

I am seeking your assistance with a research project focusing on education in policing and its association to the amount of force used to gain compliance during an arrest.

As a doctoral student with the City University of New York - John Jay College of Criminal Justice, I have spent several years designing a research project to test a hypothesis that an association exists between police officer college education and police use of force.

In addition to extensive research on other studies, I am looking to conduct my own study based in part on distributing a questionnaire to police officers and deputy sheriffs.

- **The survey will be administered in an online setting (a paper copy has been attached for your review) and contains 21 questions that will take less than 10 minutes to complete.**

The only involvement needed from your office is to forward the questionnaire web link directly to your members. I have attached a letter that you can use which explains the details and provides the web link. If you want a digital copy to forward, please send me your email address. The web link also includes an introduction to the survey, notice regarding anonymity (both attached), instructions, consent statement and the actual survey.

- **The only required criteria to participate in the survey is that the survey taker must be, or have been, a sworn law enforcement officer, regardless of rank or educational background.**
- **To avoid temporal effects on survey responses, the survey will only be open from the dates below.**

Upon request, you will receive a complimentary copy of the final research in mid 2018 that you can use to propose, modify and/or enforce your current policies regarding education in policing.

This study is soliciting assistance from municipal law enforcement and sheriff agencies in New York State (other than NYPD). It is essential to have a large sample to ensure statistical accuracy. To that, it would be greatly appreciated if you are able to facilitate this survey to your agency and advise me via email, so there will be no future requests regarding this study.

Once again, I appreciate any assistance and look forward to your response. If you have any questions or concerns, do not hesitate to contact me at anytime.

Sincerely,

John Vespucci

jvespucci@jjay.cuny.edu
845-323-0440

Survey Link
(active until <DATE>)

www. 0000000.

II. Participant Letter

<Date>

Dear Participant,

You have been invited to participate in this survey because you are an active or retired sworn law enforcement officer. Your assistance would be greatly appreciated in this research project.

Policy makers and police administrators continually look for ways to improve policing and often research is a driving force. This study intends to identify different variables that might have an association on the level of force used to gain compliance in arrest situations, specifically the education of a police officer.

This survey contains **21** questions and should take less than 10 minutes to complete. You can take it any anytime from any computer or smartphone device.

The survey can be completed by clicking on the following link and is valid for 30 days from the date of this letter:

SURVEY LINK : [www. 0000000](http://www.0000000).

This study has several safeguards in place to ensure the anonymity of participants. There is no request for your name or department. There is no link between an officer's email and their questionnaire. Department names will be excluded from any publication or report. There will be no way to link a questionnaire response to an officer, as multiple officers from multiple departments will be taking the survey simultaneously. Internet Protocol addresses have been disabled to prevent any tracking attempts, by either the software or the researcher.

An Institutional Review Board governed by strict guidelines in human subject research has reviewed this survey to ensure ethical and academic guidelines for the protection of the research and participants.

Should you have any questions or concerns regarding this survey and/or study, do not hesitate to submit them to: **jvespucci@jjay.cuny.edu**

If you are interested in a final copy of the study, email a request to **jvespucci@jjay.cuny.edu**

III. Survey Consent / Confidentiality

THE CITY UNIVERSITY OF NEW YORK
The Graduate Center / John Jay College of Criminal Justice
Department of Criminal Justice

CONSENT STATEMENT

Title of Research Study: POLICE OFFICERS AND COLLEGE EDUCATION:
THE ASSOCIATION OF COLLEGE EDUCATION AND THE
LEVEL OF FORCE USED BY A POLICE OFFICER IN
GAINING COMPLIANCE IN ARREST SITUATIONS.

Principal Investigator: John Vespucci, John Jay College of Criminal Justice, Department of
Public Management, 445 West 59th Street, New York, NY 10019, jvespucci@jjay.cuny.edu,
845-393-1620.

You are being asked to participate in this research study because you currently are, or have been employed as a sworn law enforcement officer. The purpose of this research study is to identify different variables that might have an association on the level of force used to gain compliance in arrest situations, specifically, the education of a police officer.

If you agree to participate, you will be asked to complete 13 multiple choice survey questions which will take less than 5 minutes. Some of these questions will ask you to recall the level of force you have used in your last five arrests. If you have trouble answering a question, you can exit the survey and return to it at anytime. You may skip or refuse to answer any question. You will not receive any compensation for your participation. Your responses will not be shared with your department, however they might be stored for future research.

There are no risks for you in your participation, as your identity will remain anonymous. This study has several safeguards in place to ensure the anonymity of participants. There is no request for your name or department. There is no link between an officer's email and their questionnaire. Department names will be excluded from any publication or report. There will be no way to link a questionnaire response to an officer, as multiple officers from multiple departments will be taking the survey simultaneously. Internet Protocol addresses have been disabled to prevent any tracking attempts, by either the software or the researcher.

The results from this study may be published, however your name, your department, or any identifying characteristics will not be used in any publication.

An Institutional Review Board governed by strict guidelines in human subject research has reviewed this survey to ensure ethical and academic guidelines for the protection of the research and participants.

If you have any questions, you can contact the Principal Investigator above. If you have any questions about your rights as a research participant or if you would like to talk to someone other than the researchers, you can contact CUNY Research Compliance Administrator at 646-664-8918 or HRPP@cuny.edu.

*** Upon completion of the survey, be sure to select the ‘yes’ box indicating that you have completed the survey and your answers will be logged for submission. Be sure to close your window and exit your browser to ensure no other access to your submission.**

IV. IRB Approval – Initial Application



University Integrated Institutional Review Board
205 East 42nd Street
New York, NY 10017
<http://www.cuny.edu/research/compliance.html>

Approval Notice Initial Application

12/18/2017

John Vespucci, MPA
John Jay College of Criminal Justice

RE: IRB File #2017-1289

Police Officers and College Education: The Association of College Education and the Level of Force Used by a Police Officer in Gaining Compliance in Arrest Situations.

Dear John Vespucci,

Your Initial Application was reviewed and approved on 12/15/2017. You may begin this research.

Please note the following information about your approved research protocol:

Protocol Approval Period: 12/15/2017 - 12/14/2020
Protocol Risk Determination: Minimal
Expedited Categor(ies): (7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies. (NOTE: Some research in this category may be exempt from the HHS regulations for the protection of human subjects. 45 CFR 46.101(b)(2) and (b)(3). This listing refers only to research that is not exempt.)

Documents / Materials:

Type	Description	Version #	Date
Curriculum Vitae	CITI Certification	1	11/16/2017
Survey(s)	Questionnaire.pdf	1	11/17/2017
Informed Consent/Permission Document	Consent.pdf	1	12/01/2017
Other Data Collection Tools	Participant Letter (Chief to officer letter & Emailed text for second sample frame	1	12/06/2017



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New York, NY 10017
<http://www.cuny.edu/research/compliance.html>

Other Data Collection Tools	Letter to Police Chiefs	1	12/06/2017
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Please remember to:

- Use **the IRB file number** 2017-1289 on all documents or correspondence with the IRB concerning your research protocol.
- Review and comply with CUNY Human Research Protection Program [policies and procedures](#).

The IRB has the authority to ask additional questions, request further information, require additional revisions, and monitor the conduct of your research and the consent process.

If you have any questions, please contact:

Lynda Mules
212-237-8914
lmules@jjay.cuny.edu

V. IRB Approval – Amendment
For the addition of Questions 11, 12 & 13)



University Integrated Institutional Review Board
205 East 42nd Street
New York, NY 10017
<http://www.cuny.edu/research/compliance.html>

**Approval Notice
Amendment**

01/02/2018

John Vespucci, MPA
John Jay College of Criminal Justice
25 Mayer Drive
Suffern, New York 10901

RE: IRB File #2017-1289

Police Officers and College Education: The Association of College Education and the Level of Force Used by a Police Officer in Gaining Compliance in Arrest Situations.

Dear John Vespucci,

Your Amendment was reviewed and approved on 12/29/2017. You may implement the amendment.

Please note the following information about your approved research protocol:

Protocol Approval Period: 12/29/2017 - 12/14/2020
Approved Enrollment #: 250
Amendment Summary: Seven questions were added to the survey.

Documents / Materials:

Type	Description	Version #	Date
Informed Consent/Permission Document	Consent.pdf	1	12/27/2017
Survey(s)	Questionnaire Revised.pdf	1	12/27/2017
Other Data Collection Tools	Participant Letter (Chief to officer letter & Emailed text for second sample frame)	1	12/27/2017
Other Data Collection Tools	Letter to Police Chiefs	1	12/27/2017

Please remember to:

- Use **the IRB file number** 2017-1289 on all documents or correspondence with the IRB concerning your research protocol.



University Integrated Institutional Review Board
205 East 42nd Street
New York, NY 10017
<http://www.cuny.edu/research/compliance.html>

- Review and comply with CUNY Human Research Protection Program [policies and procedures](#).

The IRB has the authority to ask additional questions, request further information, require additional revisions, and monitor the conduct of your research and the consent process.

If you have any questions, please contact:

Lynda Mules

212-237-8914

lmules@jjay.cuny.edu

VI. Survey

Definition of terms:

Arrest – The seizure or restraint to deprive a person of his or her liberty by legal authority; taking into custody.

Physical Injury – Impairment of physical condition or complaint of pain.⁷

Questions:

Questions 1 – 5 will be displayed via the software in two formats, the first being:

1. What is the MAXIMUM level of force that you used against a suspect to gain compliance while arresting them?

	Verbalization (No Force)	Soft Techniques	Hard Techniques	Blunt Impact	Chemical Weapon	Controlled Energy Device	Lethal Force
Last Arrest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Second to last Arrest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Third to last Arrest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fourth to last Arrest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fifth to last Arrest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

This format has been tested in a focus group and was preferred 8 to 2 (of 10 participants) as the most effective for memory recall.

The questions displayed individually will appear as follows:

(The participant will have the option of either view based upon whether the survey is viewed in landscape or portrait orientation.)

Questions:

1. Based on your LAST arrest, what maximum level of force did you use against the suspect to gain compliance while arresting him/her?
 - (0) Verbalization / No Force
 - (1) Soft Techniques
 - (2) Hard Techniques
 - (3) Blunt Impact
 - (4) Chemical Weapon
 - (5) Conducted Energy Device (CED)
 - (6) Lethal Force

⁷ New York Consolidated Laws, Penal Law Section 10.00 Definitions

1a. Based on your LAST arrest, what category of crime (most severe) was the suspect arrested for?

- (1) Petit Crime / Violation / Traffic Offense
- (2) Non-violent Misdemeanor
- (3) Violent Misdemeanor
- (4) Non-violent Felony
- (5) Violent Felony

2. Based on your SECOND-TO-LAST arrest, what maximum level of force did you use against the suspect to gain compliance while arresting him/her?

- (0) Verbalization / No Force
- (1) Soft Techniques
- (2) Hard Techniques
- (3) Blunt Impact
- (4) Chemical Weapon
- (5) Conducted Energy Device (CED)
- (6) Lethal Force

2a. Based on your SECOND-TO-LAST arrest, what category of crime (most severe) was the suspect arrested for?

- (1) Petit Crime / Violation / Traffic Offense
- (2) Non-violent Misdemeanor
- (3) Violent Misdemeanor
- (4) Non-violent Felony
- (5) Violent Felony

3. Based on your THIRD-TO-LAST arrest, what maximum level of force did you use against the suspect to gain compliance while arresting him/her?

- (0) Verbalization / No Force
- (1) Soft Techniques
- (2) Hard Techniques
- (3) Blunt Impact
- (4) Chemical Weapon
- (5) Conducted Energy Device (CED)
- (6) Lethal Force

3a. Based on your THIRD-TO-LAST arrest, what category of crime (most severe) was the suspect arrested for?

- (1) Petit Crime / Violation / Traffic Offense
- (2) Non-violent Misdemeanor
- (3) Violent Misdemeanor
- (4) Non-violent Felony
- (5) Violent Felony

4. Based on your FOURTH-TO-LAST arrest, what maximum level of force did you use against the suspect to gain compliance while arresting him/her?

- (0) Verbalization / No Force
- (1) Soft Techniques
- (2) Hard Techniques
- (3) Blunt Impact
- (4) Chemical Weapon
- (5) Conducted Energy Device (CED)
- (6) Lethal Force

4a. Based on your FOURTH-TO-LAST arrest, what category of crime (most severe) was the suspect arrested for?

- (1) Petit Crime / Violation / Traffic Offense
- (2) Non-violent Misdemeanor
- (3) Violent Misdemeanor
- (4) Non-violent Felony
- (5) Violent Felony

5. Based on your FIFTH-TO-LAST arrest, what maximum level of force did you use against the suspect to gain compliance while arresting him/her?

- (0) Verbalization / No Force
- (1) Soft Techniques
- (2) Hard Techniques
- (3) Blunt Impact
- (4) Chemical Weapon
- (5) Conducted Energy Device (CED)
- (6) Lethal Force

5a. Based on your FIFTH-TO-LAST arrest, what category of crime (most severe) was the suspect arrested for?

- (1) Petit Crime / Violation / Traffic Offense

- (2) Non-violent Misdemeanor
 - (3) Violent Misdemeanor
 - (4) Non-violent Felony
 - (5) Violent Felony
6. Based on your last 5 arrests, how many times were you physically injured while gaining compliance of the arrested suspect?
- (0) 0
 - (1) 1
 - (2) 2
 - (3) 3
 - (4) 4
 - (5) 5
7. Based on your last 5 arrests, how many times was the arrested suspect physically injured while gaining compliance of them?
- (0) 0
 - (1) 1
 - (2) 2
 - (3) 3
 - (4) 4
 - (5) 5
8. In the last 6 months in your official capacity as a police officer, how many arrests have you made?
- (0) 0
 - (1) 1
 - (2) 2
 - (3) 3
 - (4) 4
 - (5) 5
 - (6) 6 – 10
 - (7) 11 – 15
 - (8) 16 – 20
 - (9) 21 – 25
 - (10) More than 25
9. How many college credits do you have?
- _____

10. What is the highest degree you earned in college?

- (6) None
- (5) an Associate Degree?⁸
- (4) a Bachelor Degree?⁹
- (3) a Masters Degree?¹⁰
- (2) a JD?¹¹
- (1) a Phd?¹²

11. Does a college education afford police officers with better communication skills?¹³

- (0) No Opinion
- (1) Yes
- (2) No

12. Is a college education beneficial to police officers in deescalating volatile situations?¹⁴

- (0) No Opinion
- (1) Yes
- (2) No

13. Has the education you received from college been useful to you as a police officer?

- (0) No Opinion
- (1) Yes
- (2) No
- (3) Not applicable

14. What is your Age?¹⁵

- (1) 20 – 29 years old
- (2) 30 – 39 years old
- (3) 40 – 49 years old
- (4) 50 – 59 years old
- (5) over 59 years old

⁸Chapman, 2012; Carlan, 2007; Lersch & Kunzman, 2001; White & Kane, 2013

⁹Chapman, 2012; Carlan, 2007; Lersch & Kunzman, 2001; White & Kane, 2013

¹⁰Chapman, 2012; Carlan, 2007; Smith & Aamodt, 1997; White & Kane, 2013

¹¹Telep, 2011; White & Kane, 2013

¹²Telep, 2011; White & Kane, 2013

¹³ Pascarella & Terenzini, 1991, 2005; Smith & Aamodt, 1997

¹⁴ Holbert & Rose, 2004; Kelly, 1998

¹⁵Carlan, 2007 (Age); Chapman, 2012

- (6) Over 69 years old

15. What is your Gender?¹⁶

- (0) Male
- (1) Female

16. What is your Race?¹⁷

- (1) White
- (2) Black
- (3) Native American
- (4) Asian
- (5) Native Hawaiian / Pacific Islander
- (6) Hispanic
- (7) Other

¹⁶Chapman 2012; Carlan, 2007; Paoline & Terrill, 2007

¹⁷Chapman 2012; Carlan, 2007; Paoline & Terrill, 2007

V. CITI Certification for research with human subjects

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)**COMPLETION REPORT - PART 1 OF 2****COURSEWORK REQUIREMENTS***

* NOTE: Scores on this Requirements Report reflect quiz completions at the time all requirements for the course were met. See list below for details. See separate Transcript Report for more recent quiz scores, including those on optional (supplemental) course elements.

- Name:
- Institution:
- Institution:
- Institution:
- Phone:

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)**COMPLETION REPORT - PART 1 OF 2****COURSEWORK REQUIREMENTS***

- Curriculum
- Course
- Stage:
- Description:

* NOTE: Scores on this Requirements Report reflect quiz completions at the time all requirements for the course were met. See list below for details. See separate Transcript Report for more recent quiz scores, including those on optional (supplemental) course elements.

- Record ID:
- Completion Date:
- Expiration Date:
- Minimum Passing:
- Reported Score*:

• Name: John Vespucci (ID: 3700261)
 • Institution Affiliation: City University of New York (CUNY) (ID: 535)
 • Institution Email: jvespucci@gc.cuny.edu
 • Institution Unit: Criminal Justice
 • Phone: 845-323-0440

• Curriculum Group: HSR for Social & Behavioral Faculty, Graduate Students & Postdoctoral Scholars
 • Course Learner Group: Same as Curriculum Group
 • Stage: Stage 2 - Refresher Course
 • Description: Choose this group to satisfy CITI training requirements for Investigators and staff involved primarily in Social/Behavioral Research with human subjects.

REQUIRED AND ELECTIVE MODULES ONLY

- SBE Refresher 1
- SBE Refresher 1
- SBE Refresher 1
- SBE Refresher 1
- SBE Refresher 1
- SBE Refresher 1
- SBE Refresher 1
- SBE Refresher 1
- SBE Refresher 1
- SBE Refresher 1

• Record ID: 20669579
 • Completion Date: 05-Jan-2017
 • Expiration Date: 05-Jan-2020
 • Minimum Passing: 80
 • Reported Score*: 100

For this Report identified above**Verify at: www.citi.org****Collaborative Institutional Training Initiative (CITI Program)**

Email: support@citi.org

Phone: 888-529-5929

Web: <https://www.citi.org>

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid Independent Learner.

Verify at: www.citi.org/verify/?kd627b75f-2e75-4602-aab0-866258ef240d-20669579

Collaborative Institutional Training Initiative (CITI Program)

Email: support@citi.org

Phone: 888-529-5929

Web: <https://www.citi.org>

REQUIRED AND ELECTIVE MODULES ONLY	DATE COMPLETED	SCORE
SBE Refresher 1 – Instructions (ID: 943)	04-Jan-2017	No Quiz
SBE Refresher 1 – History and Ethical Principles (ID: 936)	04-Jan-2017	2/2 (100%)
SBE Refresher 1 – Federal Regulations for Protecting Research Subjects (ID: 937)	04-Jan-2017	2/2 (100%)
SBE Refresher 1 – Informed Consent (ID: 938)	04-Jan-2017	2/2 (100%)
SBE Refresher 1 – Defining Research with Human Subjects (ID: 15029)	04-Jan-2017	2/2 (100%)
SBE Refresher 1 – Privacy and Confidentiality (ID: 15035)	04-Jan-2017	2/2 (100%)
SBE Refresher 1 – Assessing Risk (ID: 15034)	05-Jan-2017	2/2 (100%)
SBE Refresher 1 – Research with Prisoners (ID: 939)	05-Jan-2017	2/2 (100%)
SBE Refresher 1 – Research with Children (ID: 15036)	05-Jan-2017	2/2 (100%)
SBE Refresher 1 – Research in Educational Settings (ID: 940)	05-Jan-2017	2/2 (100%)
SBE Refresher 1 – International Research (ID: 15028)	05-Jan-2017	2/2 (100%)

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