RELATIONSHIP OF HIGHER EDUCATION AND LAW ENFORCEMENT PERFORMANCE

by

Christian A. Nanry, M.A., B.S.

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Committee Members:

Robert F. Reardon, Chair

Larry R. Price, Co-Chair

Joellen E. Coryell

Lance C. Villers

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DEDICATION

This dissertation is dedicated to a number of individuals in my life, many to which I will never know. It is my hope this work will provide each one a sense of accomplishment, as I would have never made it to this point without them.

To my parents, who strived to guide me through many difficult moments in my life and made decisions for my betterment, choosing in many instances the lesser of two evils. I will never forget these instances I am aware of, and I understand holistically why it does not matter to know the others. Thank you for believing in me when no one else did. Thank you for putting me first, and showing a true example of selflessness. Dad, thank you for adopting me, and giving me a second chance at life. Though I almost squandered this gift many times over. Mom, thank you for showing me the value of understanding why the decisions we make matter, and their consequences. There always are consequences which impact other individuals around us. Even if the decision can be construed as good. More importantly, your stoic stance of my ability to choose what path I walked has led me to defy those who have attempted to place me in a category. I am me. I will not be silent.

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TABLE OF CONTENTS

Page

LIST OF TABLES

Table **Page**

LIST OF FIGURES

Figure **Page**

ABSTRACT

The relationship between higher education and law enforcement performance is still under debate. Since the early 1900s policy makers have not come to a consensus to make college education a qualification for law enforcement employment nationally. The disagreement is not whether higher education has value, to the extent which it improves police performance is not held in consensus.

Policy makers cite a lack of substantial results to validate making a college degree a qualification of law enforcement employment. Researchers have unsuccessfully attempted to provide suggestive results for the benefits of law enforcement officers possessing a college education against those who do not. Historically, the inability to corelate a significant relationship between higher education and performance leaves the subject in quandary.

Using Negative Binomial Log Linear Regression, this researcher collected performance data from several police departments and certified police officers in the central Texas region. An electronic survey was provided to certified police officers to capture data on the independent variable professionalism. The study's collected data was cross referenced, and the officers badge numbers were replaced with a generic identifier to protect their identities. The names of the police departments were also removed from this study.

Setting the significance level at .05, the three research questions for this study were answered: Is there a significant statistical relationship between higher education and

police performance, does the type of degree matter, and is performance statistically significant to police performance? The results of the study suggest levels of education predicts a positive relationship with law enforcement officer performance, degree types do not matter, and professionalism is not statistically significant to police performance.

CHAPTER I: INTRODUCTION

Currently no sheriff departments and only one percent of police departments in the United States require a college degree for employment, and 82% of police departments and 89% of sheriff's departments require a high school diploma. Minnesota is currently the only state which requires at least an associate's degree for employment as a law enforcement officer (Gardiner, 2015, p. 651). These statistics prompt us to ask why departments are reluctant to mandate higher education for their initial applicants to increase law enforcement performance as a greater whole; and if higher education has bearing on police performance.

The measurement of law enforcement performance and which mandatory qualifications law enforcement officers should possess are ideological concepts researchers, government entities, and citizens have debated for over a century. Scholars in this area see August Vollmer as the progenitor to the ideal of increasing the level of education for police officers in the early 1900s, gaining a national stage on the Wickersham Commission (Paoline & Rossler, 2015, p. 51). Vollmer, as well as members of the commission, believed the law enforcement community needed to change their image by increasing their overall intelligence and utilizing their education to handle the evolving complexity of criminal activity (Paoline & Rossler, 2015, p. 51). Despite the efforts of Vollmer and several government attempts to mandate higher education in the hopes of improving general police performance, this correlation is still under debate.

Standardizing minimum requirements for entry is thought to provide agencies recruits with enhanced cognitive processing abilities who can engage their diverse missions effectively. In theory, society would benefit as well; law enforcement officers

with higher education have a distinct advantage in problem solving, empathy, communication, and other measurable traits over their counterparts who do not have a degree (Loftus & Price, 2016, pp. 54-55). Citizens also desire a departure from a physical-first response to interaction with constituents, minimizing use-of-force. Rydberg and Terrill (2010) suggest officers who are more educated can deescalate potentially violent engagements and avoid use-of-force situations (Rydberg & Terrill, 2010, p. 107).

A thorough review of the literature did not identify substantial evidence which would overcome hesitations by officials to change recruiting and training emphases. Researchers have collected information which gives credence to arguments both for and against making higher education a requirement for position entry. However, the direct benefit higher education has on a police officer's performance has not been conclusively determined by researchers, public citizens, political officials, or law enforcement agencies.

Significance of the Study

Presently, the contribution(s) of higher education on law enforcement performance are inconclusive. Despite social outcry for an increase in police performance which, would potentially reduce inappropriate use-of-force incidents, studies on this phenomenon have been historically sporadic. Several progenitors have advocated for law enforcement officers to obtain higher education to acquire evolving skills sets required to fulfill enhanced responsibilities of law enforcement. Administrators and policy makers in law enforcement are reluctant to create an educational standard for law enforcement officers, stating a lack of conclusive or significant evidence which illustrates a rise in performance by police with higher education.

Literature regarding standardization of college education for potential law enforcement officials is inconsistent. Conflicting viewpoints originate from administrators (Rydberg & Terrill, 2010, p. 97) police officers and recruiters (Heuy et al., 2018, p. 400), and screeners (Weiss et al., 2013, pp. 125-125). This discourse has created several branches of research focusing on the impact of higher education on police performance.

Additionally, the level of education is paired with the making of a professional. The definition of professionalism is not standardized, making it difficult to determine if law enforcement is a profession, a calling, or a trade. I collected survey results from current employees in the field of law enforcement concerning professionalism.

The data collected for this study was confidentially secured. Personally Identifiable Information (PII) was not collected, and I ensured the information was accurate. Each participant was initially identified by their badge number. The badge number was removed once the results were reported. Participating police departments in this study provided officer performance data and results from the survey. I used an approved industry standard survey to collect data on professionalism.

Problem Statement

Law enforcement agencies are often reluctant to mandate higher education for officers. Results from prior studies do not indicate a strong relationship between higher education attainment and enhanced officer performance. Empirical studies are needed to determine if higher education improves police officer performance.

Research Questions and Hypotheses

This study aimed to discover if a relationship exists between higher education attainment and enhanced police officer performance. Dependent or outcome variables in this study (See Appendix D) include disciplinary actions, time in service, commendations, use-of-force incidents, firearms discharge, promotional achievements, and professionalism. Due to the nature of a non-static definition of professionalism, I used an industry standard survey, which I provided to line officers, managers, and recruiters. I used the following research questions and hypothesis:

Research Question 1

Is there a statistically significant relationship between Level of Education (X) and job Performance (Y) for law enforcement officers?

Hypothesis 1a: Null Hypothesis H_0: $b_1 = 0$. Levels of Education (X) will not predict a positive relationship with law enforcement officer Performance (Y).

Hypothesis 1b: Alternative Hypothesis H_1: $b_1 > 1$. Levels of Education (X) will predict a positive relationship with law enforcement officer Performance (Y).

Research Question 2

Does the major of a degree (X) increase the job Performance (Y) of law enforcement officers?

Hypothesis 2a: Null Hypothesis H_0: $b_1 = 0$. Specific Degree Types (X) will not increase a law enforcement officer's overall job Performance (Y).

Hypothesis 2b: Alternative Hypothesis H_1: $b_1 > 1$. Specific Degree Types (X) will increase a law enforcement officer's overall job Performance (Y).

Research Question 3

Is job Performance a function of Professionalism?

Hypothesis 3a: Null Hypothesis H_0: $b_1 = 0$. The relationship between level of Professionalism (X) and Performance in the field (Y) is not statistically significant.

Hypothesis 3b: Alternative Hypothesis H_1: $b_1 > 1$. The relationship between level of Professionalism (X) and Performance in the field (Y) is statistically significant.

Purpose of the Study

The primary aim of this research is to examine the relationship between police performance and participation in higher education. Data collected from personnel records, and surveys from line employees and managers provided the necessary information to evaluate the aim and test the associated hypothesis.

Theoretical Framework

I selected a pragmatic framework for this study. Pragmatism is efficiency in practical application, or what works out most effectively guided by truth of statements, actions which are guided by rightness, and a desire to hold value in appraisals (Crotty, 1998, p. 73). The theoretical framework aligned with this study in several different ways, especially in the means and methods of gathering data. Within this framework, I chose the best "methods, techniques, and procedures of research that best meets the needs and purposes" (Creswell, 2018, p. 27).

Pragmatists are concerned with where they are going with their research (Creswell, 2018, p. 27). Using this approach, a quantitative approach was necessary to answer the research questions. Multiple linear regression (and nonlinear variations)

served as the analytic techniques to examine the existence and magnitude of any relationship between the variables. Although qualitative research methodology may have been used, quantitative methods provides policy makers the essential data they seek to justify a change in standardization of higher education as a qualification for law enforcement officials.

Researchers Perspective

I am affected subjectively and objectively by this study. I understand my own nature, biases, and interest in this study. I have been in the field of law enforcement for over 23 years, and have developed a system of beliefs from this experience in the field. I advocate for higher education in the law enforcement field, and believe higher education should be standardized for law enforcement. I believe the field of law enforcement is a profession, and many professionalized fields require a college education. A profession is "an occupation with a body of recognized knowledge and a developed intellectual technique" (Kornblum, 2008, p. 491). I believe law enforcement officers should be well rounded, and gather from different funds of knowledge in order to be able to serve the community effectively.

Maintaining impartiality to the design of the study is crucial to obtaining accurate data to address the problem statement. I have experience in several different specialties in two separate agencies. My experience in law enforcement is rooted in basic and advanced occupational training, special assignments, and professional development.

Academic accomplishment has not been a requirement for hire or advancement in either of my agencies. Recently, these agencies have promoted managers with college education, including master's degrees. This trend has not been enforced by a change in

policy requirements, rather a change in individuals making the selections. This trend is not absolute, as several individuals have been promoted to upper managerial positions without a degree outside of a high school diploma or a GED. This change has sparked a debate within my own agency about the validity of mandating higher education for applicants. Objectors of this change believe college education still has no bearing on performance; citing the need for specific skill sets and "that experience is the greatest teacher for law enforcement" (Loftus & Price, 2016, p. 55). Supporters of this trend feel it is necessary to mandate a permanent change in qualifications for hiring and granting promotion. Currently association studies do not exist to support either position significantly.

I am hoping to provide a vehicle with this study to determine if a relationship exists between higher education and law enforcement performance quantitatively. I used Poisson and Negative Binomial Log Linear Regression to establish a relationship between the variables.

Positionality

I am aware of my positionality in this study, and I believe this study represents avenues for productive change for both the law enforcement and public communities to form an effective symbiont relationship. I must remain vigilant to avoid clouding the results of the study with my own perception. This can be managed with self-reflection and measurement of how much of the research is me; did I allow the research to direct what is needed? This inclusiveness of my position has great advantages and disadvantages, and by controlling preconceived notions my positionality can prove to be beneficial to this research.

Key Terms

Adherence: A commitment to a set of rules, policy, or guidelines.

Akaike Information Center (AIC): Data analysis which combines statistical estimation and model selection in a single framework (Kline, 2016, p.287).

Autonomy: The ability or right to self-govern.

Bayes Information Criterion (BIC): A direct account of sample size (Kline, 2016, p. 287).

Criterion: Name used to describe the dependent variable in this case study.

Effect Size (ES): The size of the treatment effect the researcher wishes to detect with respect to a given level of power (Mertler, & Reinhart, 2017, p. 361).

General Education Development (GED): Equivalency degree to a high school diploma.

Higher Education: Any level of education beyond high school which is accredited, such as colleges and universities that provide bachelor's degrees, master's, and doctoral degrees. Associates degrees also fall into this category.

IBM SPSS: Statistical software program used to analyze inputted data.

Level of Significance: "In hypothesis testing, the pre-established probability of being incorrect; also known as the *alpha level"* (Mertler, & Reinhart, 2017, p. 1363).

Law Enforcement Personnel (LEP): These are members of local, city, state, or federal agencies within the United States. All of these members are able to enforce laws within the purview of their jurisdiction. This includes performing arrests, issuing citations, and controlling traffic patterns.

Mann-Whitney U Test: "A nonparametric (ordinal data) test for two independent samples" (Hurlburt, 2012, p. 609).

Multiple Regression: Multiple regression is a technique which "identifies the best combination of predictors (IVs) of the dependent variables" (Mertler, & Reinhart, 2017, p. 14).

Negative Binomial Log Linear Regression: Similar to Poisson Regression, "negative binomial distribution provides "an additional parameter such that the variance can exceed the mean" (Agresti, 2018, p. 220).

Odds Ratio: Use of the odds ratio (OR) provides a way to detect how likely or unlikely an outcome occurs in each situation. The OR represents the change in odds of an outcome while controlling for the other variables in the model (Pett, 2016, p. 329).

Parallel Example: An example of similarity to a law enforcement mission, training, or meaning existing in another field.

Path Coefficient: The standardized regression correlations associated with causal paths in a causal model (Mertler, & Reinhart, 2017, p. 365).

Poisson Regression: Poisson is a Generalized Linear Model used to compare the likelihood that a number of events 's (X) could occur during a fixed interval.

Power: The capability of rejecting Ho when Ho is in fact false: equal to 1-β (Mertler, & Reinhart, 2017, p. 365).

Personal Identifiable Information (PII): Information on an individual or group of individuals consisting of Dates of Birth, Social Security Numbers, Names (Partial of Full), Employee Numbers, Phone Numbers, and Home Address.

Practitioner: An individual actively engaged in his or her life situation; art, profession, or in most cases a medical position. For this research, this term applies to the law enforcement field.

Predictor: Name used to describe the independent variable in this case study.

Profession: "an occupation with a body of recognized knowledge and a developed intellectual technique" (Kornblum, 2008, p. 491).

Professionalism: "Professionalism as the conduct or qualities that characterize a profession, further defined as a calling requiring specialized knowledge and long, intensive academic preparation" (Dilday et al., 2017, p. 601).

Self-Regulation: The ability to control human behavior though long-term goals. In this study's case police officers. (See Appendix H for Law Enforcement Code of Ethics).

Study Definition of Professionalism

In this present study, I explored the definition of professionalism as it pertains to the law enforcement career field. As discussed further in this research, a standardized definition does not exist for professionalism in this field. I hoped this explanatory study will provide a sense of the intrinsic professionalism reported by law enforcement officers using an industry- standard- survey.

This study used the following definition of professionalism: "Professionalism as the conduct or qualities that characterize a profession, further defined as a calling requiring specialized knowledge and long, intensive academic preparation" (Dilday et al., 2017, p. 601). This definition was located while conducting the literature review, from an article defining professionalism in the medical field. This definition came from a parallel

field similar to law enforcement, which requires regulatory certifications and qualifications to fulfill employment standards.

Delimitations and Limitations

I collected the data for this study from police performance records and a survey provided to law enforcement personnel on professionalism. Certified sworn police officers from three city departments formed the population for this study. I created a list of performance measures which I provided to each department to measure the independent and dependent variables (See Appendix E). The selected survey was of an industry standard, and contained demographic information. The selected abbreviated survey for this study was originally developed by Hall in 1967. The original survey has been consistently used in multiple studies and career fields. My methodology for the study is quantitative and I used Poisson and Negative Binomial Log Linear Regression to reflect the findings.

The proposed research study had several limitations. The first is a general reluctance to participate from the police departments. By nature, law enforcement organizations and their personnel are not normally introspective, and hesitate to question their own legitimacy. I hoped the law enforcement community would embrace this opportunity to review their legitimacy critically, and would be willing to participate in this study to improve occupational performance.

Trust and willingness of participants to accurately complete the survey with their personal experiences and opinions is also a limitation. Some individuals do not trust easily and many find it difficult to think altruistically beyond their emotional responses

due to a lack of change from past initiatives and past negative reactions from management and fellow officers.

Two major unforeseen events occurred at the time of this research; COVID-19 and the numerous national civil disturbances. These events occurred almost simultaneously, limiting the ability of the officers in each department to participate. I used an electronic survey (See Appendix I) to provide a means for police officers to participate in this study. Several departments who were originally interested in participating in this study were greatly affected by COVID-19, and had to decline.

Police departments and officers have a duty and responsibility to protect civilians and property from the civil disturbances, and are first responders mandated to work during COVID-19 to enforce state and national health regulations. Police departments and officers also have the responsibility to protect the rights of protesters to exercise their rights safely, while enforcing COVID-19 regulations. Therefore, many of the police departments and officers who were projected to participate in this study had to attend to these responsibilities over a long period of time, from March 2020 to the completion of this study.

The final limitation was the human resources department in each law enforcement agency, who could be unwilling to provide any information to support this study. The data sought from personnel files are essential for this study to provide realistic and historical baseline of data of law enforcement and higher education. I hoped the possible results of this study could motivate police departments to render the needed support this study seeks.

Summary

This research aims to examine the relationship between higher education and law enforcement performance. I utilized Poisson and Negative Binomial Log Linear Regression in order to collect measurable data to discover the relationships between the dependent and independent variables.

I collected data from law enforcement agencies in the form of performance statistics to complete the analysis. Surveys were provided to managers and staff members on the nature of professionalism in the field of law enforcement. I inputted the collected data into IBM SPSS to construct the model.

The association between higher education and law enforcement performance has been heavily debated, as a majority of agencies do not see concrete results which would provoke a change in policy and standards. I hope this research will provide contributing results to mitigate the deadlock between stakeholders and administrators on higher education's contributions to law enforcement performance.

CHAPTER II: LITRATURE REVIEW

Since the early 1900s the concept for standardizing higher education for law enforcement has ebbed and flowed from civic discourse and official oversight. Reasoning for a change in hiring practice and emphasis is primarily drawn from a desire to professionalize law enforcement. Many critics believe law enforcement is a trade, craft, or an occupation (Hilal et al., 2013, p. 463), maintained by learned skills developed from non-formal training and experience. Supporters of professionalism believe law enforcement has evolved into a profession (McClellan & Gustafson, 2012, p. 104). Understanding Professionalism will help establish a baseline for the rationale in making higher education a requirement for law enforcement officers and therefore contributes to this proposal. In the preliminary research of higher education in law enforcement, this research has not found conclusive evidence to substantiate either position. However, the value of higher education is not in question; rather the extent to which it improves police officer performance is not held in consensus (Gardiner, 2017, p. 25). In order to cultivate improvement in law enforcement performance, a deep and analytical analysis focusing on a multitude of contributing factors is necessary to foster changes in law enforcement organizations.

Problem statement: Law enforcement agencies are often reluctant to mandate higher education for officers. Results from prior studies do not indicate a strong relationship between higher education attainment and enhanced officer performance. Empirical studies are needed to determine if higher education improves police officer performance.

Origins of Higher Education and Law Enforcement

McClellan and Gustafson professional fields as the following: “Professions are characterized by specified levels of education aligned with specific bodies of scholarly knowledge as a necessary, but insufficient, condition” (McClellan & Gustafson, 2012, p. 104). This argument has spurred a debate and then prompted August Vollmer, a progenitor of higher education in law enforcement to action. Vollmer was the police chief in Berkley California from 1905 to 1932 (Rydberg & Terrill, 2010, p. 94). Vollmer supported the use of new technical methods to assist law enforcement in detecting and prosecuting criminal activity. Vollmer believed these new advances would require skill sets unobtainable from traditional organizational training, and that college education was essential to provide officers the fundamental background to successfully integrate this need in a rapidly evolving landscape (Rydberg & Terrill, 2010, p. 94).

Vollmer’s vision motivated government officials to create a variety of commissions over time, including the Wickersham Commission (Paoline & Rossler, 2015, p. 51). The commission’s final report revealed a belief that higher education will play a crucial role in elevating the quality of law enforcement as a whole, and it asked departments to consider making higher education a requirement for employment (Rydberg & Terrill, 2010, p. 95). In 1973, the National Advisory Commission on Criminal Justice and Goals set up a target goal of 35 years for all police officers to have a four-year degree. In 1982, the year of the deadline, only one percent of law enforcement agencies require a four-year degree (Cordner, 2019, p. 226). The low percentage of agencies requiring college education does not reflect the number of institutions who offer a degree in the criminal justice field. There are 18,000 colleges and universities who

offer a degree in criminal justice. The majority of these institutions are trade schools or community colleges, leaving an estimated 800 colleges and universities who offer a four-year degree (Cordner, 2019, p. 226).

The concept of requiring higher education for law enforcement resurfaced due to civic unrest and the public's overall dissatisfaction with police performance: "as the police became caught up in fierce and often bitterly politically contested issues such as civil rights, race relations, anti-war protests, and industrial conflict, it was predictable that they would attract scholarly attention" (Bradley & Nixon, 2009, p. 426).

In September 2017, Gardiner concluded the largest and most comprehensive non-government examination of the role higher education plays in policing on a national level. This study was the first in 40 to provide "substantial information about higher education policy and practice in small departments" (Gardiner, 2017, p. 2). A total of 958 agencies participated in the survey, a combination of small and large departments from every state across the United States. This survey did not seek to examine the difference in officers' performance with and without a college degree to determine which officer is better. Nor did the study seek to enter the higher education debate. What it did was provide data necessary "to begin to understand how higher education might be relevant to the practice of policing" (Gardiner, 2017, p. 2). This study reviewed minimum standards of education, field and specific training, Community Orienting Policing (COP), and politics which affect agency practice. The information gleaned from this study is disseminated throughout this literature review.

Law Enforcement as a Profession

Law enforcement is a diverse field through which individuals from different backgrounds serve a specified community or mission. Each law enforcement organization has its own mission statement and organization structure. Because each law enforcement organization holds its own version of mission statement and structure, forming a singular definition of professionalism is difficult.

Law enforcement is a field orchestrated through specified requirements: age, physical fitness, medical availability, education, certifications, and continuous in-service training. In order to maintain employment in their departments, police officers must meet regulatory requirements occurring quarterly, semiannually, and annually. For the last two decades, police departments have sought to establish professionalism through accountability, national coherence, innovation, and legitimacy (Stone & Travis, 2011, p. 21). In a similar way, the parallel field of medicine has not attempted to abandon its identity as professionals. Workers in the medical field have shifted their emphasis to create deeper rapport with their patients in order to cultivate innovation for improved practices. Law enforcement has embraced this methodology, and looks to improve its rapport with the community they serve (Stone & Travis, 2011, p. 20).

Law enforcement officers must also maintain a level of ethical and moral behavior in order to preserve their positions. Expectations for officer conduct are stated in each organization's policies, which are too vast to cite here. All police agencies share several similar expectations for their employees: to personally remove themselves from domestic disputes, to not drink and drive, to not consume alcohol while possessing a firearm, and to avoid any expression of political stances on social media and public

interactions (Levett et al., 2015, p. 69). Any one of these violations can result in termination.

Some will define a career in law enforcement more of an occupation or a calling than a profession, similar to priesthood (Loftus & Price, 2016, p. 57). The responsibilities and qualifications mandated for individuals who choose a career in law enforcement fulfill the normative definition of professionalism of this research: "Professionalism as the conduct or qualities that characterize a profession, further defined as a calling requiring specialized knowledge and long, intensive academic preparation" (Dilday et al., 2017, p. 601). If an individual is unable to meet agency specifications, nor maintain mandated qualifications, they will not be hired or they will be unable to maintain their employment. Therefore, I identified law enforcement as a profession.

Professionalism

This literature review reveals a need to identify a consistent definition of professionalism in order to measure the effects of higher education on law enforcement performance. Egon Bittner stated 50 years ago that, organizational leaders within a profession should be in charge of developing "an intellectually creditable version of their work" (Bittner, 1970, p. 81), which includes ensuring an educational foundation is in character with the organization. The study's definition is: "Professionalism as the conduct or qualities that characterize a profession, further defined as a calling requiring specialized knowledge and long, intensive academic preparation" (Dilday et al., 2017, p. 601). Though this definition provides a starting point for professionalism, it is unclear what is needed to meet this standard (McClellan & Gustafson, 2012, p. 108). Is the

pinnacle qualification an academic achievement, a selfless desire to enter the field, relevant training, or all of the above?

Scholars have conducted studies in several fields of employment attempting to gauge what qualities and education are needed in a position in order to make it a profession. In the medical field, workers are expected to serve patients from positions of knowledge, as well as engage in continuous learning to maintain competence throughout their careers, and empathize with patients. However, participation in educational programs directly focused on professionalism is not viewed as important to the medical field (Dilday et al., 2017, p. 604).

Studies attempting to connect professionalism to law enforcement and whether higher education is essential has had similar results. Despite various 10-year studies showing law enforcement officers who have higher education are more dependable and effective, no correlation can be attributed to professionalism and higher education. In contrast, officers with higher education actually show a decrease in feelings of professionalism (Loftus & Price, 2016, p.65). Studies show professionalism may be connected to a calling rather than qualifications. For example, “professionalism is viewed more accurately in terms of attitudinal attributes that reflect the manner in which practitioners view their work” (Loftus & Price, 2016, p.57).

The concept and definitions of professionalism are subject to change based on whom is defining it. Organizational needs normally dictate the viewpoint on what an employee must possess in order to be a professional. “New” professionalism is now conceptualized as an occupational value or a discourse (Evetts, 2011, p.407). This mode

of definition supports a managerial standpoint providing flexibility for staffing models and standardization for qualifications, changing based on needs and focus.

Each of these viewpoints shows distinct value, but does not provide a clear answer or definition of what being a professional is. The similarities of all three viewpoints exist in real time, specifically the attributes needed in each field to maintain a certain level of competence. Only one group looked at an intrinsic calling as a measurable element for professionalism. Further research is needed to provide a basis of understanding of what being a professional constitutes.

Autonomy, Self-Regulation, Adherence & Police Code of Ethics

In order to satisfy the public's demand for accountability and the pursuit of autonomy for police, organizations have attempted to develop a code of ethics to preserve trust and mitigate liability (Frankel, 1989, p. 110). The status of a profession's ability to self-regulate and remain autonomous, is directly linked to the public's perception about the motives and performance quality of the organization (Frankel, 1989, p. 110). The strategic value of ethical codes resides in their ability to function as a device "designed to privatize conflict or to restrict the scope or to limit the use of public authority" (Frankel, 1989, p.112). A code of ethics protects both the community and the organization by providing support and promotion for professionals (Frankel, 1989, p. 114). Professionals see adherence to a code of ethics as an obligation within an organization to remain consistent with public policy objectives, and therefore increasing social deference (Frankel, 1989, p. 115). In the case of law enforcement, a code of ethics is created to establish trust through excellence in performance, and an assurance of an officers'

commitment to the public who has granted them substantial power (Cawthray, et al., 2013, p.190).

Codes of ethics go beyond the law, whether written or conceptualized in spirit. Codes of ethics specifically address the behaviors of organizational members. A code of ethics, at a minimum, reduce negative or harmful behavior, and promote good behavior (Schwartz, 2002, p.29). A code of ethics in law enforcement provides clarity to both superiors and officers about what is acceptable behavior and what is not in ethical dilemmas and predicaments (Cawthray, et al., 2013, p.190). Adherence by members of managerial ranks is important, as employees must perceive their own superiors are following the code of ethics themselves (Schwartz, 2002, p. 35). For the code to effectively regulate behaviors of the organization, clear consequences for violating their principles must occur. Failure to properly discipline violators will undermine the code and leave it ignored (Cawthray, et al., 2013, p.203).

The International Association of Chiefs of Police (IACP) has created a code of ethics to preface and encapsulate the mission and commitment that law enforcement agencies within the United States make in service to the public (See Appendix H). The intent of making an overarching code of ethics was to provide a baseline ethics code for the numerous agencies operating in this country, which may have had unique ethics codes or none at all. The last iteration of the code was created in 2009 (See Appendix H). Although the IACP aimed to provide guidance to law enforcement to address ethical issues in policing, the code may need to be updated. Many changes have occurred over the landscape of policing since the code's inception, and updates are necessary to ensure the code is relevant to current ethical and moral issues (Cawthray, et al., 2013, p.190).

Theory of Higher Education and Performance

The question of whether higher education indeed improves law enforcement performance needs logistical support from colleges and universities and law enforcement agencies. Although colleges and universities have taken on this endeavor with haste, law enforcement agencies are normally reluctant to create educational standards as a requirement for employment. Currently only one percent of police departments in the United States require a degree for employment (Gardiner, 2015, p. 651; Gardiner, 2017, p. 12). Not having a standardized requirement for applicants to possess higher education negatively affects recruiting, and reinforces a reputation of employing workers of low quality (McClellan & Gustafson, 2012, p. 106). The first university to create a full-time-five-year-preservice curriculum for law enforcement was Michigan State in 1935 (Rydberg & Terrill, 2010, p. 95).

Unless gains from an initiative, can produce measured value, police organizations traditionally are resistant to change. Research has demonstrated higher education has the ability to foster improvements in police officers' situational awareness and problem-solving skills and techniques. However, the evidence is inconclusive about the direct impact higher education has on the performance of law enforcement officers (Paterson, 2011, p. 289). In many instances conflicting results have assisted in clouding an undeniable answer for its cause. The Missouri Police Department conducted a study to determine if a correlation exists between higher education and police performance, but found no correlation between officer education and discharging a firearm after considering assignment, age, and time in service (Rydberg & Terrill, 2010, p. 95). This

example illustrates the gap in research conducted on higher education and law enforcement.

Traditionally, a degree in criminal justice or criminology is the degree of choice when seeking employment in law enforcement. According to a study in Ontario, Canada, researchers found while employers in law enforcement preferred degree holders, criminal justice and criminology degree holders do not have privilege in the hiring and promotion process (Heuy et al., 2018, p. 399). The researchers interviewed 32 individuals from the Ontario Police Department, including recruiters, senior officers, and police recruits. They asked participants if having a degree in the criminal justice discipline is a benefit to them as law enforcement officers. The majority of the group responded either “not significantly” or “no”. Recruiters and administrators believe that an education focused in criminology was not beneficial in the current law enforcement environment. Rather, departments are in need of officers who understand finances, because the responsibilities of police officers have evolved into understanding budgeting and financial accounts (Heuy et al., 2018, p. 407). Research findings are mixed concerning degree specialization and individual behaviors, attitudes, and career development (Heuy et al., 2018, p. 401). According to researchers, the sampling has been insufficient due to the size and quantity of officers possessing a variety of degrees (Paoline et al., 2015, p. 55). The correlation of degree type to law enforcement performance is still being researched.

Although the impact higher education has on law enforcement performance is inconclusive, the perception of having a degree provides law enforcement a substantial level of credibility. The responsibilities and skills have evolved for today’s law enforcement officials by design or demand. Law enforcement agencies are also seeking

degrees which provide specific skills to applicants in the hope of addressing the increasing complexity of police work.

Training Merger with Higher Education

With the intent of providing law enforcement officers with the cognitive and skill-based knowledge necessary to engage complex situations, universities and police organizations have collaborated to create a streamlined training program. European agencies are adopting partnerships with universities to create curricula involving skill-based training with theoretical knowledge known as cross-cultural sub competence (Zuzeviciute et al., 2017, p. 126). Both organizations in this program believe social fabric will inevitably change and officers who are competent and confident in this approach will be able to adjust successfully (Zuzeviciute, et al., 2017, p. 126). This approach to educating law enforcement recruits does not rest solely on decision making by the university, limiting law enforcement's contributions to consultation, but rather, it emphasizes a joint decision-making process (Zuzeviciute et al., 2017, p. 127). I did not discover any police agency in the United States which has a program interfacing at this level.

Professional policing is designed to combine the aspects of practical knowledge and skills used for daily application while including research and scientific theory (Janusauskas, 2011, p. 7). Officers must be trained to be independent, competent, and make expeditious decisions in conditions of risk (Janusauskas, 2011, p. 7). Police officers who can function efficiently have the potential of reducing litigation and liability to the agency. "The impact of even a single instance of inappropriate police aggression has the potential to damage citizens' trust in police officers" (Koepfler et al., 2012, p. 141). The

implementation of this combined approach of skills and theory can be presented as essential information for each law enforcement officer. “Higher education has been treated, even by police reformers, more as advance training, or as remedial development than as means of critically revisiting policing” generally and police management particularly (Janusauskas, 2011, p. 10).

In the United States approximately 300 police academies are located on college campuses, primarily at community colleges and trade school locations (Cordner, 2019, p. 232). At Grand Valley State University in Michigan, undergraduate students have the ability to complete their criminal justice program at the police training academy. This program is attractive to students and departments alike, as it allows students to be ready for police employment upon graduation. Students do not have to complete a separate police academy after receiving their four-year degrees (Cordner, 2019, p. 232; Gardiner, 2017, p.17). However, credits for only five elective courses are awarded for completion of the academy training. The core curriculum only requires one police course, and two as electives. It is still under debate if this is a good arrangement which will raise the bar on educational achievement for law enforcement (Cordner, 2019, p. 232).

Combining tactical law enforcement skills and theoretical education is an innovative method to prepare law enforcement initiates to satisfy operational demands. This approach can eliminate the treatment of education as remedial training for law enforcement officers, reduce litigation, and become a building block in professional development. This perspective could help produce officers with higher intellectual capital who can adequately navigate the rigors of their professions, and reduce collateral damage to the department and the greater society.

Motivations for Higher Education in Law Enforcement

Perspectives from officers themselves on having a degree as a requirement for employment and how their agencies measure the worth of their degree can indicate possible ideological positioning of law enforcement as a whole. A researcher conducted a study of the Minnesota state policy which requires an associate's degree for law enforcement employment in two stages: the first solicited initial feedback from officers in 2009 concerning this topic specifically, and the second took place 18 years later and is the example for this review. In this study the researchers asked two questions:

- Do police officers support requiring a four-year degree for initial hire as a police officer?
- Would this police officer still have entered law enforcement if a bachelor's degree requirement was in place?

Overall, 30% stated yes, a four-year degree should be a requirement, and 70% stated they would still enter the profession if this were the requirement. Additionally, officers under the age of 40 were more likely to have a degree than officers over the age of 40 (Hilal et al., 2013, pp. 473- 474).

The states with the highest percentage of officers who hold a four-year degree are Massachusetts (49.0%), New Jersey (46.1%), California (39.5%), and Minnesota (42.0%) (Gardiner, 2017, p.4). California police hold degrees at a higher rate than the general population nationally (28.8%) and in California's (30.7%) (Gardiner, 2015, p. 656). Although California does not require a degree to become a police officer, the literature reveals a possible reason for their high rate of degree holders. California provides several educational incentives. Incentives include pay for obtaining higher education, flexible

shifts to attend class, accelerated career ladders, authorization to attend class while on duty, and the use of an official vehicle for academic pursuit. Compared to the national sample, California law enforcement agencies are one of the most likely to offer pay and tuition reimbursement benefits (Gardiner, 2015, p. 655). Promotion in one third of California's police agencies are tied directly to higher education, meaning moving beyond the rank of sergeant requires a four-year degree. This standardization provides a major incentive to obtain a degree, the probability of advancement without a degree is minute (Gardiner, 2015, p. 659). This literature suggests incentivizing education will provide appropriate motivation for current and new recruits to obtain a degree to create a professionalized workforce.

One of the most intrinsic incentives for officers obtaining higher education is salary based. This incentive is administered differently by each agency; however, the majority of the police agencies in Gardiner's study (2017) pay an incentive beyond the agency educational minimum (Gardiner, 2017, p. 27). The study found pay incentives for officers with higher education increased per level of education, starting from a bachelor's degree and finishing at a doctorate or terminal degree (Gardiner, 2017, p. 27). This study did not identify whether the degree major increased the officers pay incentive. A third of the police departments in Gardner's (2017) study pay college educated officers more money for having a four-year degree (Gardiner, 2017, p. 26).

In some law enforcement agencies, officers report a non-reaction or indifference towards officers who graduate from college while in service. Law enforcement officers also report being underutilized or ignored despite having degrees and knowledge in a problem area. In rare instances when the officers' higher-education-based knowledge and

skills were utilized, it was superficially, as best (Hallenberg & Crockcroft, 2017, p. 281). Officers report hostility from line supervisors and managers, often in support of the overall organization's position (Hallenberg & Crockcroft, 2017, p. 281). This hostility toward officers who hold higher degree qualifications and aspirations than their less educated peers, results in the educated officers being passed over by their less educated peers for promotion (Gardiner, 2017, p. 11). Tokenism often accompanies hostility from law enforcement agencies, meaning a degree is seen as a cursory achievement which does equate to much. Finally, many police officers are given the impression their higher education is not compatible or valued in law enforcement (Hallenberg & Crockcroft, 2017, p. 285). This study provides a personal narrative from police officers who pursued a college degree after they were hired. Their experiences are a sharp contrast from law enforcement officers who enter the agency with higher education.

Colleges play a critical role in whether students in higher education pursue a career in law enforcement. In 2014, researchers conducted a first-time study in which they sampled from three different types of institutions to determine if the institutions themselves were a factor in students' desire to enter a career in law enforcement. The researcher sampled from predominately White institutions (PWI), historically Black colleges and universities (HBCU), and mixed raced institutions (MRI) (Drestch et al., 2014, p. 304). Most law enforcement agencies, though not mandatory, have a preference for applicants having a college degree when applying.

Criminal justice majors are among the lowest in national unemployment rates. In historically Black colleges and universities (HBCU) criminal justice is the sixth most popular degree for students (Drestch et al., 2014, p. 306). However, previous studies

reflect only 25% of students within this discipline were interested in pursuing a career in law enforcement after graduation (Drestch et al., 2014, p. 307). This particular study suggested if law enforcement agencies want to hire more applicants with higher education and increase the departments abstract knowledge base, police recruiters should establish lasting partnerships with criminal justice programs in their regions. Law enforcement recruiters can increase minority recruitment with assurances of fair treatment, fair and equitable hiring and promotional practices, equal opportunity for assignments and training, accountability for discriminatory actions by superiors and co-workers, and environments free of biased behavior (Drestch et al., 2014, p. 306-307). Though not the focus of this study, this is an alarming trend as the pool of minority and female applicants for law enforcement is shrinking nationwide. Gardiner (2017) suggests this is because hiring minorities or female applicants is not a priority for many agencies (Gardiner, 2017, p. 21).

Providing incentives is an important element if law enforcement believes higher education is a systematic step to obtaining better quality applicants and improving performance. These incentives include tuition reimbursement, pay raises for particular degrees, promotional advancement, and flexible shifts. California and other states have established the validity of providing incentives for officers to procure a college degree, separate from Minnesota. Which created a state-wide law demanding a degree for all law enforcement officers. Officers in Minnesota have obtained associate's degrees to meet qualifications, but are not motivated to go beyond the necessary requirement. Incentives provide law enforcement agencies a provocative method to hire applicants with college education and raise educational standards of their employees.

Vetting Factors Impacting Recruiting and Retention

Researchers assert that educational level may be a predictor of success for law enforcement officers. Several practical reasons can be provided for raising the education requirements of law enforcement officers. Reading comprehension is an occupational necessity, as police officers are required to maintain and disclose field reports for organizational and judicial review (Roberg & Bonn, 2004, p. 475). College graduates perform their job more satisfactorily than those without a degree, perform better in police training, are more culturally tolerant towards diverse communities, and are more flexible and less authoritarian (Roberg & Bonn, 2004, p. 474). At a minimum, law enforcement agencies should maintain a rising trend of the general population obtaining college degrees, which has been increasing since 1970 (Ryan & Bauman, 2016, p. 4). Police officers with a degree also generate fewer complaints from public citizens and demonstrates heightened analytic and communication skills (Stickle, 2016, p. 3). In contrast, research has shown officers with a college education will suffer from boredom and view supervisors without a degree with hostility and contempt (Stickle, 2016, p. 3). Due to the inconclusive findings attempting to pinpoint a direct correlation between higher education and police performance, many recruiters feel higher education should not be assumed to be the predicator of officer success in all areas of responsibility (Stickle, 2016, p. 3).

Resistance to imposing higher education as a qualifier for law enforcement applicants' centers on monetary applications and discrimination. Critics of mandating higher education as a qualifier believes it would discriminate against minorities and lead to litigation against the agency (Gardiner, 2015, p. 648). Smaller departments in many cases are unable to compete with larger agencies regarding pay and incentives, making

recruiting and retention challenging (Gardiner, 2015, pp. 650-651). This mandate would also prohibit hiring applicants who have desired skill sets and qualities police agencies want, such as military veterans (Gardiner, 2017, p. 21). Recently, recruiting for police has become so difficult, many agencies have begun to lower requirements to obtain a sufficient number of applicants (Cordner, 2019, p. 234). Recruiters and agencies have stated a college degree does not teach certain intangible skills deemed essential for effective police work: common sense, and the ability to communicate to average citizens without talking down to them. Further, there remains the perception students just showing up to class are not the type of individuals law enforcement is looking for (Gardiner, 2017, p. 20).

The resistance to making a four-year degree a mandatory requirement for applicants also includes civil or state standards, from which some departments may not be able to deviate (Gardiner, 2017, p. 21). Civil and state standards vary from state to state, and organization to organization. Some police departments operate outside state standards in various forms, such as a collective bargaining agreement. Each police organization size and demographic pool adds to the unique difficulty of standardizing a degree for all police applicants across the nation (Gardiner, 2017, p. 21). A majority of agency minimum requirements are primarily dictated by state and local standards, and as few as 13% of agencies deviate and raise education standards beyond state mandates (Gardiner, 2017, p. 16).

An examination of Texas Local Government Code, Title 5, Subtitle A, Chapter 143, Municipal Civil Service for Firefighters and Police Officers is consistent with Gardiner's findings (2017). The code provides a policy for all qualified and participating

police agencies in the state concerning applicants' qualifications, education incentives, disciplinary actions, promotions, administering examinations, and retirement. Applicants wishing to be employed by the police department in an entry position must be 18 years of age (Sec. 143.023), but applicants cannot be a sworn peace officer until they reach 21 years in age, and have at least 60 college credits hours with no more than 12 hours resulting from academy training, or have been honorably discharged from the armed forces (Sec. 143.105). The agency is authorized to determine education incentives, granted the curriculum is from an accredited institution and is law enforcement related (Sec. 143.112). Agencies have the ability to decline education incentives such as pay, eligibility requirements, or promotional advancements. Agencies who do not participate in the Texas Civil Service standard, use agreements formed by committees to provide administrative and logistical policies for their respective departments. Each of these agreements will also vary from committee to committee. Texas exemplifies Gardner's (2017) findings. The Texas Local Government Code provides specific guidelines pertinent to this study for police officers in the state of Texas, and provides participants who operate inside them the flexibility to determine the extent to which a college degree is applied to an officer's career.

Almost one quarter of police agencies have written policies which allow the agencies to suspend or remove a minimum education requirement for select applicants with specific skill sets. The ability to suspend or remove minimum education requirements can extend to applicants possessing some college, a two-year, degree and a high school diploma (Gardiner, 2017, p. 19). Examples of exemptions are prior law enforcement time, military experience, computer expertise, and corporate experience.

Some departments can waive education requirements for prior civilian law enforcement experience, fire-EMS-law enforcement training, multilingual skills, and experience in a trade with an apprenticeship (Gardiner, 2017, p. 20).

The value of a college education is also in question. Students attending distance learning programs has sparked a debate regarding the validity of these programs compared to a traditional classroom setting. I was unable to find any research aimed to determine how many police officers are using distance learning to earn degrees or the impact online learning has on performance (Rydberg & Terrill, 2010, p. 112). The rising popularity of online criminal justice degrees in the United States has critics pointing to the willingness of institutions of higher education to surrender to market demands, compromising academic integrity to attract business (Paterson, 2011, p. 288). These accusations provide additional negative inferences towards criminal justice majors and police officers, as criminal justice majors are more likely to pursue a career in law enforcement than students with a non-law enforcement major (Drestch et al., 2014, p. 311).

A degree in criminal justice is often viewed as having little to do with preparing a student for a career in law enforcement. The majority of colleges in the United States only require 10% of the curriculum to be focused on policing in degrees centered on criminal justice education (Cordner, 2019, p. 236). This trend continues in the master's degree programs in criminology, as an average of twenty 25% of a student's curriculum is focused on police-centric courses (Cordner, 2019, p. 229). This compares to three courses in the criminal-justice curriculum (Cordner, 2019, p. 229). Many institutions of higher education do not require a student to have an undergraduate degree in

criminology, and many do not impose any remedial or prerequisite work for those entering graduate school to obtain a master's degree in criminal justice (Cordner, 2019, p. 230). In addition, the curricula in the criminal justice graduate programs emphasize research skills instead of occupational skills. Therefore, master's degrees in criminal justice are not granted the title of a terminal degree as they are in education, social work, business, and other fields (Cordner, 2019, p. 230). It is to be noted several criminal justice programs do offer a PhD for terminality. As a result, the curriculum comprising criminal justice degrees is often seen as bureaucratic creation, rather than an academic pursuit (Cordner, 2019, p. 228). Regardless of the degree type, many critics still point to a lack of clear distinction with higher education and police performance.

Evidence suggests if higher education is to be standardized by police organizations, the initiative may need start at the highest levels of the departments. Agencies who are led by management holding degrees in higher education are more likely than those without a college degree to employ officers with higher education. Managers with graduate degrees employ significantly more officers with a four-year degree (43.7%) than mangers with a four-year degree (32.9%), and the trend is continuous to a two-year degree (13.8%), or a high school diploma (18.1%) (Gardiner, 2017, p. 32). In her 2017 study, Gardiner proposed the statement to participants that college-educated officers are better problem solvers. A larger portion of the respondents with a master's degree or higher agreed with the statement, and only a small minority did not agree. A larger portion of managers with a high school diploma did not agree with the statement. Managers with a two-year degree often mirrored the responses of the management group with master's degrees (Gardiner, 2017, p.24). These responses,

"rather than reflecting actual differences, are likely tapping into the personal attitudes and opinions of the respondents/administrations towards education" (Gardiner, 2017, p.24).

Law enforcement agencies who require higher education as a qualifier for employment tend to have higher pre-screening standards with better training for officers reducing use- of- force violations and complaints (Stickle, 2016, p.12). Law enforcement applicant screeners use various methods to assess the psychopathy of applicants entering the field. These screeners believe personality and psychological testing provide a better indicator of a police officer potentially exhibiting aggressive behaviors and traits (Stickle, 2016, p. 4). Some of these traits are aggressiveness, dishonesty, and impulsivity. The author suggests combining education and effective screening to ensure the highest-quality applicants are selected for employment as law enforcement officers (Stickle, 2016, p. 12).

The Minnesota Multiphasic Personality Inventory (MMPI)-2 L (Lie) scale has been used by several police departments for the preemployment selection of police applicants and is widely accepted in the applicant process (Weiss et al., 2013, p. 123). Results from the MMPI-2L show applicants with high L scale scores often associate with future performance problems than those who score lower on the scale (Weiss et al., 2013, p. 123). The MMPI-2L evaluates several performance factors: off-duty problems, citizen complaints, termination for cause/behavior problems, arrests/criminal conduct, forced resignations, vehicle property damage, and inappropriate weapon use (Weiss et al., 2013, p. 126). However, education is not listed in the L scale as a determining factor of police performance.

Supporters of the MMPI-2L claim the L scale is a valid and reliable test for poor police performance because the L scale is more suitable to measure the subtle variables in

applicants. Applicants who score higher on the L scale generally are presenting themselves virtuously, and are minimizing their distress and psychopathology. These individuals are also relatively rigid, and are unable to make effective decisions in extreme situations. They are unlikely to follow regulations and laws prescribed by their superiors (Weiss et al., 2013, p. 128). Supporters suggest individuals with high L scale scores are not suitable for high-stress, high-risk professions such as policing (Weiss et al., 2013, p. 124). The MMPI-2L is seen as one of the many assets at the disposal of law enforcement agencies to filter applicants, in the hopes of selecting a productive applicant for a position in law enforcement.

Police departments can use civil service examinations in order to screen the applicant pool and select the best candidates for the law enforcement field. Researchers have conducted on a parallel study aiming to measure the effect certain qualifications had on the performance of police applicants in the academy, and their first three years as a full-time police officer. The researchers collected data from trainee's entering a police academy from 1996 to 2006 (Henson et al, 2010, p. 10). The results of the study suggested civil service examinations could predict overall performance results of the officer, particularly those in their 2nd and 3rd year of employment (Henson et, al, 2010, p. 20). Officers who scored higher on the civil service examine, scored higher on academy testing than those who scored lower on the civil service exam. The researchers recommended police departments should continue to use civil service examination until a better measurement instrument or method is identified for hiring (Henson et al., 2010, p. 21). This recommendation was based on the findings of the study.

Based on the unsubstantiated relationship between higher education and law enforcement performance, police recruiters are challenged on what to use in their vetting process. Monetary and discriminatory factors are key detractors from making higher education a requirement for employment, but the results in reduction of aggressive behavior also weighs on these decisions. Civil service examinations are a promising measure of applicants' performance in the early stages of their careers, and could be used as a vetting method. However, not all police departments use the state civil service test, and some have their own entry examination. The value of a college education is being questioned for the impact it contributes to graduates in the field, especially criminal justice majors. The literature also suggests having managers with higher education could change hiring perceptions, qualifications and resistance to hiring practices. These malleable factors create consistent inhibitors for police recruiters, who are intent on finding the best quality applicants to serve the community.

Summary

Higher education and its influence on law enforcement are important subjects which can re-establish fundamental definitions on professionalism and the value of higher education pertaining to law enforcement performance. Each of the preceding researchers contributed to a revitalized focus on law enforcement performance and tried to pin-point direct factors to enhance it. Several of these studies were first time events, including insight into the minds of police officers themselves and whether they felt valued by their organizations if they possessed a college degree. Further research is needed to provide depth of each approach, as well as to solidify definitions and starting points on how law enforcement evolves.

The literature concerning the effects higher education has on law enforcement performance is not in agreement and makes this review difficult. A singular definition of what professionalism means is one of the major areas of concern. Without a true definition of professionalism, researchers are left unable to measure its meaning. Higher education and law enforcement have not been a consistent research priority, and the literature supporting this subject is not as focused as other well-documented subjects. This inconsistency makes it challenging to gather a large sample of peer-previewed and relevant data to support further studies.

I identified several original studies analyzing different aspects relating to higher education and police performance in order to provide substance to this inquiry. These studies provided new ways to look at improving police performance from different vantage points and are not strongly connected. The literature also seems to suggest a change in the vetting and hiring practices of law enforcement officers, but a division exists in policy makers of what changes are necessary and the impact they may have on recruiting.

Although the literature explored the topic of degree type and the impact it personally has on police officers, I did not find any research which reviewed employee performance evaluations of police officers after they obtained a college degree. Performance comparisons are traditionally drawn from officers with and without degrees at the time of hire, but not of police officers who obtain a degree after they were hired.

I did not find narratives from private citizens in the articles I located. I did not see any suggestions made by citizens to improve law enforcement capabilities, nor if any suggestions from private citizens were considered to foster change. I did not see any poll

results, surveys, or statistics from citizens about whether they believed having a degree should be standardized for a law enforcement official.

Though not the focus of this study, it is important to briefly explain the impact and fabric of the Black Lives Matter movement, which caused national civil disturbances across the nation which did affect data collection for this study. The Black Lives Matter phrase originated in 2013 after the acquittal of George Zimmerman in the shooting death of Trayvon Martin (Williamson et al., 2018, p. 400). Since that event, Black Lives Matter protests have occurred in various locations across the United States. For example, from August 2014 to August 2015, 780 Black Lives Matters protests have occurred in 44 states and 233 locations; at least 14% of cities in the United States with 30,000 or more inhabitants saw a minimum of one such protest in that time period (Williamson et al, 2018, p. 401). These protests have continued annually since 2013.

Recently, George Floyd died on May 25, 2020 when being apprehended by Minneapolis police. George Floyd's death reignited the Black Lives Matter movement, and is seen as an incident which has affected our country far more influentially than any previous death concerning an unarmed black man or child with the police (Wallis, 2020, p. 586). Much of the outrage from the community stemmed from the fact that the officer who is being charged with Floyd's death had 17 misconduct violations in the last 20 years. Many of these incidents involve allegations of brutality, yet this officer only received two letters of reprimand (Dreyer et al., 2020, p. 401).

As the public trust in the police is eroding, I aim to conduct research to ascertain if higher education improves police performance. This could, reduce negative and perceived negative performance with the police through education.

CHAPTER III: METHODOLOGY

This study examined the independent factors which have been reviewed in the literature as possible contributing factors affecting law enforcement performance. The literature review revealed inconclusive association between higher education and law enforcement performance, however, many of these studies include designs that are problematic. The review of literature also revealed a lack of consistency in the manner the independent and dependent variables were examined over the breadth of the subject area. Critically, researchers failed to establish the existence of a relationship between level of education and police performance. Collectively, this study addresses a gap in the literature by the inclusion of variables such as use-of-force, disciplinary actions, time in service, promotional achievements, professionalism, training hours, degree type, and firearms discharges quantitatively.

Several statistical processes were considered prior to the selection of multiple regression. Multiple regression provides a method to measure the observed variables and pragmatically explain their relationship. Poisson and Negative Binomial Log Linear Regression were used to quantify the relationship between the independent and dependent variables. These regression coefficients describe the indirect, direct, and total effects of the model, capturing the role of criterion and predictors to understand their relationships.

Population and Sample

The target population for this study consisted of individual police officers in local police departments in the central Texas region. Certified and sworn Texas law enforcement officers from the participating agencies provided direct participation in the

study of professionalism by completing an industry standard survey. Each agency participated directly by transcribing actual performance data from their internal records on a Microsoft Excel spreadsheet I provided. I also provided specific performance measures to collect essential data for this study on each officer individually. Approximately 3,000 police officers in the three police departments were invited to complete the survey. I anticipated approximately 20% of the initial sample would complete and submit the survey. I also anticipated receiving approximately 600 finalized surveys from a potential participant pool of 3,000.

Ultimately, 219 police officers in the three departments participated in the survey. This accounts for 7.3% of the expected return rate. The reasons for this low return rate can be attributed to several factors. The first is COVID-19, which strained the departments personnel pool and resources to maintain social distancing in the hopes of reducing the transmission of the virus. COVID-19 is one of the primary reasons the survey was administered electronically and not in person, which could have resulted in more participants. The second is the threat and engagement of national civil disturbances, for which police officers were placed on call without a reliable schedule or access to a computer. The third reason for the low return rate is the reluctance of officers to participate in a survey. These limitations of the study have been covered previously in Chapter 1.

To be noted, several large police departments outside the state of Texas originally had verbally agreed to participate in this study. However, based on the forementioned national occurrences and the high outbreak of COVID-19 amongst police officers in each department, the contacts I had fostered declined to continue in this research. I have

defined small departments as those departments with 60 or less certified police officers, medium departments at 130 or less, and large departments above 130 certified police officers. I categorized these departments for this study based on reported approximations on staffing levels. These levels can fluctuate with retirements, separations, and fatalities.

I selected these agencies for their proximity, and for the diversity of educational levels in their organizations. This diversity is not present in a majority of federal law enforcement agencies, as a majority of these agencies require a four-year degree for employment. Local law enforcement officers also engage the public daily, often in circumstances which provide tangible data for the variables in this research. Therefore, this study is only targeting local law enforcement organizations for analysis.

Sample size for this study was driven by the number of survey responses anticipated and requiring a statistical power of at least .85. Generally, larger sample sizes yield a more powerful statistical tests, thereby increasing the ability to detect a smaller effect size (ES). Effect size represents the strength of the relationship between the independent and dependent variables (Vaske, 2002, p. 290). To measure effect size in this study, I utilized the odds ratio; “the closer the odds ratio is to 1, the smaller the effect” (Tabachnick & Fidell, 2019, p. 368). The sample size selected allowed a diverse set of data to be captured, thereby providing the ability to identify not only the relationships sought by this study, but the level of significance between them.

In traditional statistical methods, the primary measure of significance comes from Null Hypothesis Significance Testing (NHST). Recent work has relied on practical significance as well. For example, practical significance is a judgement I made and the consumer about the implications of the study (Vaske, 2002, p. 288). Practical significance

is expressed as a standardized measure of effect. In the case of Negative Binomial Logistic Regression, researchers rely on the odds ratio as a measure of the practical significance of the variable (Vaske, 2002, p. 295). Odds ratios are considered appropriate when both variables are dichotomous (Vaske, 2002, p. 287). An odds ratio of 1.5 implies an individual in the category of interest is 50% more likely to have an increase in the count of the dependent variable. In medical research, an odds ratio of 3 or greater is considered practically significant. “Odds ratios close to 1 indicate only weak associations, whereas ratios over about 3 for positive associations, or near zero indicate strong associations” (Bieliauskas et al., 1997, p. 889).

Use of the odds ratio (OR) provides a way to detect how likely or unlikely an outcome occurs in each situation. The OR represents the change in odds of an outcome while controlling for the other variables in the model (Pett, 2016, p. 329). The OR compares a group which equals 0 to a group which equals 1, and can be interpreted as the following: “OR < 1: The exposure is associated with lower odds of the outcome. OR = 1: The exposure has no effect on the odds of the outcome. OR > 1: The exposure is associated with greater odds of the outcome” (Pett, 2016, p.329). Odds ratios can change depending on the other variables in the model (Pett, 206, p. 335). “The absolute value is used to ensure that the difference between the random effects is positive; in other words, to compare the subject with higher odds to the one with lower odds” (Hosmer, et al., 2013, p. 329). Odds ratios are most effectively understood when the predictor variable is dichotomous, rather than continuous. This is the reason continuous variables are collapsed into normal or ordinal data (Pett, 2016, p. 357).

Variables in the Study

I collected data to measure the study variables from the performance subject areas of individual law enforcement officers. degree type, possession of a degree, disciplinary actions, commendations, use-of-force incidents, firearms discharge, professionalism, time in service, promotional achievements, and officer training are the independent variables in this study. Level of education served as the dependent variable in this study.

Previous studies have used some of these variables to examine the effect of higher education on law enforcement performance. No studies were identified that analyzed the independent variables as a collective holistic construct. The majority of these studies were qualitative, and any numerical results were derived from descriptive statistics.

Use-of-force events are often accepted by previous studies and scholars as one of the best methods to gauge performance of police officers, with or without degrees. Use-of-force events can lead to either officer commendations or disciplinary actions which, in turn, can lead to liability claims. Several studies were identified that used the number of commendations (Henson et, al, 2010; Hilal et al., 2013; Janusauskas, 2011) and negative reinforcements such as disciplinary actions (Koepfler et Al., 2012; Loftus & Price, 2016; Stone & Travis, 2011; Stickle, 2016; McClellan & Gustafson, 2012; Bradley & Nixon, 2009; Roberg & Bonn, 2004) to measure an officer's effectiveness. Several studies also used firearm discharges by officer as a factor in performance (Stone & Travis, 2011; Stickle, 2016; Weiss et al., 2013; Rydberg & Terrill).

The contribution(s) of participation in higher education were inconclusive relative to the performance of law enforcement officials (Rydberg & Terrill, 2010, p. 97). As previously stated, the factors in each exploration were done selectively and in separate

studies. Personal narratives from previous researcher's in previous studies were collected from law enforcement officers in the field about their experiences with higher education in their career field. Some participants responded having a degree has no bearing on officer performance, some participants believed the type of degree matters, and some participants believed they were not being used consistently with the skills of their degree (Hallenberg & Cockcroft, 2017, pp. 275-278). The difference between the value of online and traditional education was also questioned, as online studies are questioned for their worth by police organizations.

Underlying this subject are officer training and time in service. Although officer training is present in the literature of this study, time in an officer's career is not measured for impact. Researchers often use age as a demographic factor. I included time in service as a variable to measure the impact time in service has on the dependent variable.

Identification of Independent and Dependent Variables

Variable selection for inclusion in this study was based on the review of the literature and the inconclusive findings about the effect of higher education has on law enforcement officer performance. Police performance served as the dependent or outcome variable given the goals of this study. Higher education served as the independent variable of this study.

Instrumentation

Various law enforcement agencies provided the data for this study. The core information was collected from the performance personnel files of officers in their

respective agency. The collected information illustrated specific performance measures of each officer.

The survey is an abbreviated instrument developed by Hall in 1967, who created "an attitudinal scale to measure the degree of professionalism among practitioners of various occupations. Using Likert scaling procedures, Hall used 10 items to measure each of the five attitudes of professionalism: use of the professional organization as a major referent, belief in public service, belief in self-regulation, sense of calling to the field, and a feeling of autonomy" (Snizek, 1972, p. 109). Each of the five attitudes of professionalism are supported by 10 attitude items for a total of 50 questions. Hall's results were based on the data from 328 subjects from 11 different practitioner fields with a variety of educational credentials (Snizek, 1972, p. 110).

Hall's Professionalism Scale has been frequently cited, modified, and used in research for over 50 years. The scale was designed to measure the degree of professionalism among practitioners in different occupational fields. Carlan and Lewis (2009), utilized a modified version of Hall's Professionalism Scale (1967) in order to ascertain whether professionalism is an applicable concept to law enforcement personnel. Carlan and Lewis mailed their modified version of Hall's survey (1967) to all departments in one southern state which employed 50 or more officers. The response rate was 57%, with 16 participating departments in total. The analysis of the responses revealed the majority of the officers identified with all five of the components of professionalism (Carlan & Lewis, 2009, p. 39). Carlan and Lewis stated "The findings of this study suggest that police officers are aligned with Hall's definition of professionalism. Officers demonstrated a strong commitment to the service ideal and

moderate support for peer regulation. Attitudes regarding the value of professional associations and sense of calling also reveal reasonable adherence to the tenets of professionalism once controlling for undue influences" (Carlan & Lewis, 2009, p. 51). This survey uses a Likert scoring scale; Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree. The choice of neutral in this scale provides a midpoint from a positive to a negative response, and provides the participants an option to select if they do not have a strong opinion on the question (Blair, Blair, & Cazja, 2013, p. 199).

Other researchers have used Hall's scale with consistent results; Bumgarner in 2002; Carlan in 2009; and Shernock in1992 (Loftus & Price, 2016, p. 70). Loftus and Price (2016) created a survey of 10 questions, which had one negative and positive question from Hall's (1967) original professionalism survey (Loftus & Price, 2016, p. 59), and disseminated the survey to two police agencies with a high rate of return. Loftus and Price selected Hall's scale (1967) because "Hall's attitudinal scale, utilized in numerous studies on attitudes toward professionalism over the years, has demonstrated evidence of score validity and has proven to be reliable over time" (Loftus & Price, 2016, p. 59). Loftus and Price (2016) stated a majority of the police respondents aligned with Hall's sociological definition of professionalism (Loftus & Price, 2016, p. 70).

Previous researchers hold Hall's instrument as one that yields reliable and valid scores because it provides consistent results and longitudinal applicability in different demographic locations. In 1972, Snizek examined the reliability of each of Hall's five professionalism subsets, using his own data and the original data set. Both produced reliable coefficients (what type of reliability coefficient? – please state) for

each of the subsets, and cumulative professionalism: "referent (.686, .621), public service (.742, .640), self-regulation (.731, .699), calling (.703, .583), autonomy (.760, .738), and cumulative (.843, .783)" (Carlan & Lewis, 2009, p. 375). (*reliability indices of <.8 on these types scales are unacceptable). Miller and Fry (1976) used the modified scale to assess professionalism attitudes specifically for police officers. From the original examination, the researcher's noted reasonably high correlations between factor loadings of their own data with the factor loadings from Hall and Snizek's data sets. However, Miller and Fry suggested tailoring the language to the police profession (Carlan & Lewis, 2009, p. 375).

In this study, I collected data for level of education, degree major, and online education from the survey results. I obtained the level of education each officer holds using the following options: (a) GED, (b) high school diploma, (c) an associate's degree, (d) a bachelor's degree, and a (e) master's or greater (See Appendix A). Officers who completed the survey identified their current level of education, degree major, and whether their college educations were obtained online. A majority of departments did not identify the method in which a college degree was obtained for employment. The level of education data collected from the survey was entered into a Microsoft Excel spreadsheet used to differentiate officers into groupings based on level obtained. Level of performance was captured by participating police departments from police officer personnel files then imported to Microsoft Excel.

A survey is an interview which uses fixed questionnaires with prespecified questions (Czaja et al., 2013, p. 2). Collecting data via electronic survey allows a researcher to control the interview without being present, reducing resource allocation,

provided an opportunity for a large number of police officers to participate in the study, and provide convenience to the interviewee. The speed of data collection is also important, which a survey can accomplish from a specific group in less than 10-20 days (Czaja et al., 2013, p. 57). Data captured electronically were imported into the Statistical Package for the Social Sciences, version 26.0 (SPSS, 2019).

It is important to realize every survey contains errors, and it is impossible to completely eliminate them within the limits of the research (Czaja et al., 2013, p. 12). To maintain and implement an effective survey, I identified the greatest sources of error to the survey and how its design and delivery can affect its exposure to errors (Czaja et al., 2013, p. 12). The most critical sources of error were variables affecting the objectives, population, and methods of this study (Czaja et al., 2013, p. 12). Controlling the sample size is the best way to reduce sampling error. Larger sample sizes reduce the chances of misrepresenting the sample (Czaja et al., 2013, p. 13).

In survey research, biases may exist stemming from the way data are sampled and/or collected from a selected population. By soliciting for voluntary participation in this study and providing an online survey to all sworn police officers from the participating departments, I attempted to avoid committing sample bias. Sample bias occurs in three ways: coverage bias, which occurs if a segment of the study is improperly excluded from the sample, selection bias, which occurs when a segment of the sample given disproportionally low chances of being selected, and nonresponse bias which occurs when a segment of the sample is disinterested in the study (Czaja et al., 2013, p. 14). Sample size was controlled by defining the population I wanted to sample, and by attempting to obtain as many police officers and data as possible (Czaja et al.,

2013, p. 14). All certified officers in all three departments were invited to participate in this study's professionalism survey, and the results used for the study were selected on which police officer's willingness to participate. I did not have prior knowledge of any of the police officers' identities, nor were the identities obtained or kept. I was limited by the police officers' willingness to participate, and it may not represent the entire population. In order to generalize the results from this study, I replicated it with the other police departments who participated in this study (Hyun et al., 2015, p. 120).

I entered the data numerically into the spreadsheet by the police department in their respective category (Tables 1, 2, and 3). The data collected from the police department and their specific descriptors are:

- Use-of-Force Incidents by Officer (Hands on, less than lethal devices, K9, etc).
- Firearms Discharge by Officer (Not accidental discharges).
- Disciplinary Actions by Officer (Any action which resulted in something written in paper in the officer's personnel file. Not looking for specifics or severity).
- Commendations (Any acknowledgement of positive performance for the officer, including emails from private citizens).
- Professionalism (Collected by survey). Specific.
- Promotional Achievements by Officer (Lateral or ladder positions).
- In Service Training (Hours) by Officer (Total if possible).
- Time in Service by Officer (Total time. E.G. 5 years military police, 3 years county, and 2 years in current department equals 10 years. Whole numbers are better).
- Marital Status by Officer. Collected from the Survey. Specific.

- Hours worked in a week (average). Collected from the Survey. Specific.
- Job Position. Collected from the Survey. Specific.
- Gender. Collected from the Survey. Specific.
- Race. Collected from the Survey. Specific.
- Age. Collected from the Survey. Specific.
- Highest Education. Collected from the Survey. Specific.
- Years of Police Service. Collected from the Survey. Specific.
- Degree Major. Collected from the survey. Specific.
- Online Degree. Collected from the survey. Specific.

Table 1

Variables Collected

Variable	Type	Source	Title	Results
Firearms Discharge	Independent	Department	Performance	Numeric
Use-of-Force	Independent	Department	Performance	Numeric
Disciplinary Actions	Independent	Department	Performance	Numeric
Commendations	Independent	Department	Performance	Numeric
Professionalism	Independent	Survey	Professionalism	Numeric
Promotional Achievements	Independent	Department	Performance	Numeric

In Service Training	Independent	Department	Performance	Numeric
Time in Service	Independent	Department	Performance	Numeric
Online	Independent	Survey	Higher Education	Specific
Level of Education	Independent	Survey	Higher Education	Specific
Marital Status	Independent	Survey	Professionalism	Specific
Hours Worked	Independent	Survey	Professionalism	Specific
Job Position	Independent	Survey	Professionalism	Specific
Gender	Independent	Survey	Professionalism	Specific
Race	Independent	Survey	Professionalism	Specific
Age	Independent	Survey	Professionalism	Specific
Years of Police Service	Independent	Survey	Professionalism	Specific
Degree Major	Independent	Survey	Higher Education	Specific

Table 2

Independent and Dependent Variables

Name	Type	Source	Results
Higher Education	Independent	Higher Education	Specific
Police Performance	Dependent	Police Performance	Numeric

Table 3

Data Sources

Name	Data Type	Source	Results
Medium Police Department	Performance	Department Files	Numeric
Small Police Department	Performance	Department Files	Numeric
Large Police Department	Performance	Department Files	Numeric
Medium PD Officers	Professionalism/Higher Education	Survey	Likert/Specific
Small PD Officers	Professionalism/Higher Education	Survey	Likert/Specific
Large PD Officers	Professionalism/Higher Education	Survey	Likert/Specific

Each department supplied the data in a spreadsheet, with the data entered into columns organized by the officer and their corresponding number. The results were merged with the information with the survey results on a Microsoft Excel spreadsheet. I determined the significance of the factors and their relationships.

Data Management

Data collection and analysis proceeded in a safe and secure manner to protect the integrity of the data and the participants of this study. The subject of this study was viewed as delicate and controversial, as it suggests a major policy change in an overarching social organization. The need to maintain the integrity of research data is emphasized by Yin (Yin, 2011, pp. 182-185). To ensure validity in this research, I obtained the data from several different police departments and sources. I provided a professionalism survey (See Appendix A and I) to each officer in the participating department, and this survey is an instrument which has performed well in previous studies. The variables in this study provide measurable data on each officer's disciplinary actions, time in service, commendations, use-of-force incidents, firearms discharge, promotional achievements, and professionalism.

This study utilized a Type I error rate (a, alpha) level of .05 as the criterion for determining statistical significance. The Type I error rate "determines how large the difference between means must be in order to be declared significantly different, thus resulting in a decision to reject (or not to reject) the null hypothesis" (Mertler, & Reinhart, 2017, p. 11). If a reported p-value is less than 0.05, this suggests the random intercept for the subject is significant. This agrees with the 95% confidence intervals for Rho and Sigma (Hosmer, et al., 2013, p. 345).

The data collected was kept confidential. Personally Identifiable Information (PII) was not collected, and I ensured the information was accurate, each participant was initially identified by their badge number. The badge number was removed once the results were reported. Participating police departments in this study provided officer performance data and results from the survey. I aimed to collect data from a minimum of 300 participants for this study.

Data Analysis

The first analysis involved using a data set from the police department's internal processing using descriptive and correlational statistical methods to develop the model to examine the impact and interactions between the variables. Once optimized, I preformed data analysis used the IBM Statistical Package for Social Sciences (SPSS) version 26.0. I used SPSS to screen the data, ensure a good fit of model to data exists, and calculated the results for significance. Regression analysis and linear model effects were tested along with the calibration sample to verify the extraneous and moderating effects. This study utilized multiple regression and included the variables previously listed.

Confirmatory Factor Analysis

I used Confirmatory Factor Analysis (CFA) to measure if the concepts of the survey construct are consistent with my understanding and if the data fit the constructed model. Confirmatory Factor Analysis also provided the ability to observe the causal relationships between the observable and latent variables in this study. The main purpose of Confirmatory Factor Analysis is to ascertain if *a priori* theory can be confirmed or disconfirmed (Mertler, & Reinhart, 2017, p. 255).

Multiple Regression, Poisson, and Negative Binomial

Multiple regression (Negative Binomial) was selected to explain the study's relationships. Multiple regression "identifies the best combination of predictors (IVs) of the dependent variables" (Mertler, & Reinhart, 2017, p. 14). It is used when the research goal(s) or questions include the analysis of several independent variables and one dependent or variable. Multiple regression provides a framework for selecting independent variables in a way that maximizes the variance in the dependent variable (Mertler, & Reinhart, 2017, p. 14). Formally, the main purpose of regression analysis is to develop an equation used to predict the value of the dependent variables (Mertler, & Reinhart, 2017, p. 169). In the context of SEM, regression "provides the basic rationale for analyzing covariance structures of observed variables in SEM. It also provides the logic for analyzing means" (Kline, 2016, p. 369).

The negative binomial distribution, similar to Poisson, is a probability distribution concentrated on the nonnegative integers. Negative binomial distribution provides "an additional parameter such that the variance can exceed the mean" (Agresti, 2018, p. 220). The negative binomial distribution can also be viewed as a form of Poisson regression including random components which reflects the uncertainty about true rates for events occurring in individual cases (Gardner, 1995, p. 399). Negative binomial regression inherently has greater flexibility when modeling the relationships of the expected value and the variance of Y than Poisson regression (Gardner, 1995, p. 400). Hurdle negative binomial regression can be used to overcome excessive number of zeros and an overdispersion of the data. Hurdle negative binomial regression will also study the positive count and zeros separately (Rudra, 2019, p. 53).

To compare the two regression techniques, I used the Akaike Information Criterion (AIC) and the Bayes Information Criterion (BIC) statistics. As a result of the comparison, I used Negative Binomial Log Linear regression for the study (Table 4). A lower numeric value for the measurements is preferred as it represents a better model fit.

Table 4

Comparison of Akaike Information Criterion (AIC) and Bayes Information Criterion (BIC)

Name	AIC	BIC	Results
Poisson	1852	1873	Not Selected
Negative Binomial	1192	1214	Selected

Note: A lower measurement demonstrates a better fit of the model.

The Akaike Information Criterion (AIC) estimates the overall quality of the model, and the Bayes Information Criterion (BIC) takes a more direct account of sample size and predicts fit (Kline, 2016, p. 287).

Poisson and negative binomial regression work with data that represent counts. For example, they might be applied to data where individuals are asked to identify the number of times they go online each day. The performance data in this study are counted events. Some of the represented counts of events are related to positive performance (e.g., promotions). Some of the represented counts of events are associated with negative performance (e.g., disciplinary actions). In order to develop a measure that could be associated with performance, I added the positive measures and subtracted the negative measures.

$$Performance = Promotions - Use\ of\ Force - \ Disciplinary\ Actions$$

This yielded a measure of "positive performance" with values ranging from -32 to 4. The frequency distribution is shown in Figure 1 and Appendix K.

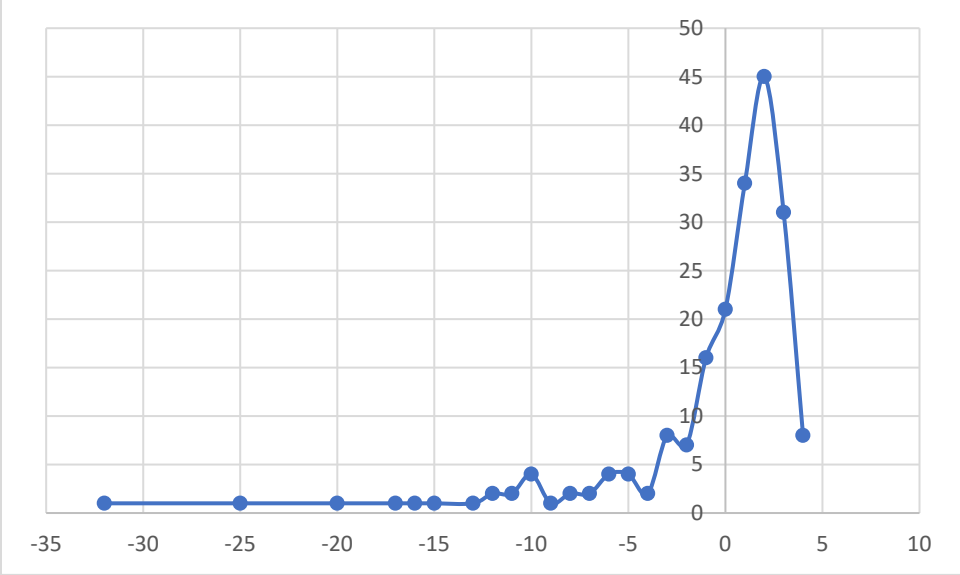


Figure 1

Positive Performance Distribution

Both Poisson and negative binomial regression expect "counts" to be positive whole numbers. Therefore, it was necessary to transform performance into a variable that could be analyzed. This was done using the equation:

$$Negative\ Performance = 4 - Peformance$$

The frequency distribution for negative performance is shown in Figure 2 and Appendix L.

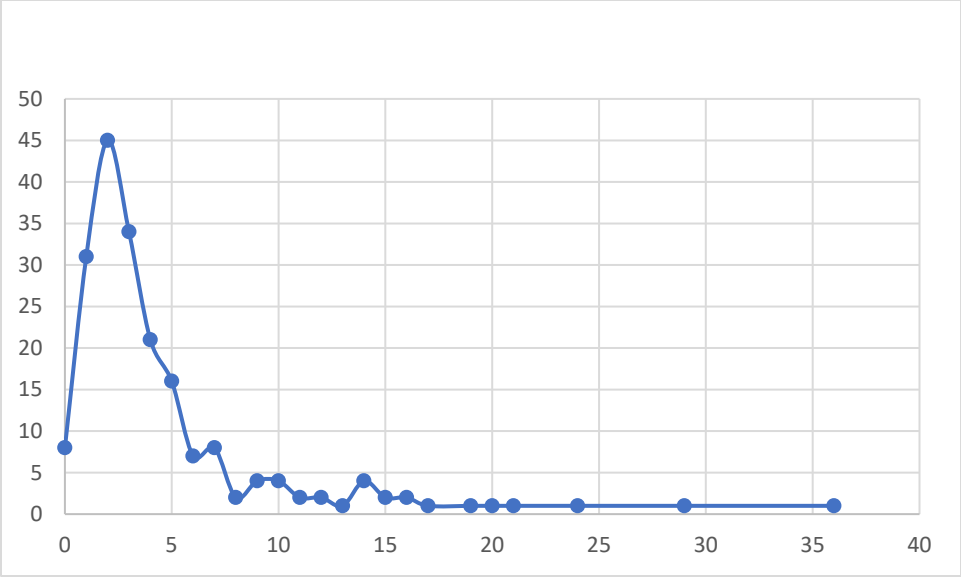


Figure 2

Negative Performance Distribution

Summary

This research began with collecting data from the field of law enforcement to explain what professionalism means to the law enforcement community. I used an industry standard survey which did not perform well in this study based on the response score data. Results of Confirmatory Factor Analysis revealed inadequate fit of the data to the proposed structure of the instrument. Cronbach's Alpha measure of score reliability was below the acceptable level of .80. Both findings will be discussed further in the following chapters and are depicted in Figure 3 and Table 8.

Additionally, I collected performance data from the law enforcement agencies listed in this study to provide the necessary statistical substance to reveal the relationship between the independent and dependent variables. A primary research question in this research involved testing the hypothesis that there is a significant, predictive relationship between higher education and law enforcement. Based on quality measurements using AIC and BIC methodology, I selected Negative Binomial Log Linear Regression for this study.

CHAPTER IV: DATA ANALYSIS AND FINDINGS

This chapter provides analytic results based on the research conducted for this study. The preliminary section focused on the study variables utilized and eliminated, the participants education level, and the study samples. The primary data analyses section focused on model building and verifying the fitness of the model.

Study Variables

This chapter provides analytic results based on the research conducted for this study. Variables included in this study were identified from the literature and include police performance: degree type, possession of a degree, disciplinary actions, commendations, use-of-force incidents, firearms discharge, promotional achievements, professionalism, time in service, and officer training are the independent variables in this study. Measurement on the variable “influence of professionalism” was captured to ascertain whether an indirect effect existed on the study’s law enforcement agencies and the dependent variable (i.e., law enforcement performance). The variable “firearms discharge” was eliminated from the analysis due to the low number of recorded discharges. There were only five reported incidents. The variable “commendations” was eliminated from the study because they did not correlate with any variable in the study.

Participant Educational Level

Based on the survey results and the data provided by the participating police departments, the highest level of educational obtainment for each participating officer were reported as the following: high school diploma- 56, associate’s degree- 33, bachelor’s degree- 86, and master’s degree or higher- 25 (Table 5). Criminal justice

majors comprised 34% of the participants, with history, sociology, and psychology majors the second most held degrees at 6% (Table 5).

Table 5

Categorical Variable Information on Participant Educational Level

Level of Education	N	Percentage
Master's Degree	25	12.5
Bachelor's Degree	86	43.0
Associate's Degree	33	16.5
High School	56	28.0
Total	200	100.0

Note: GEDs were combined with high school diplomas for this research.

To determine the statistical relevance of degree type in this study against both police performance and professionalism, and degree type into Criminal Justice majors and all other majors (Table 6). I used the Mann-Whitney U test (See Appendix J), which compares the scores of these two categories of majors and is a "a nonparametric (ordinal data) test for two independent samples" (Hurlburt, 2012, p. 609). As a result of the analysis, the major of a degree did not have an impact on professionalism or performance (Table 7).

Table 6

Categorical Variable Information on Participant Education Majors (Degree Type)

Degree Major	Frequency	Percent	V.Percent	C. Percent
Criminal Science, Fire, Emergency Management	74	37	62.7	62.7
Technical, Engineering, Architecture	3	1.5	2.5	65.3
History, Sociology, Psychology	12	6.0	10.2	75.4
Business	7	3.5	5.9	81.4
Health Care	4	2.0	3.4	84.7
Multi-Discipline, Applied Science	5	2.5	4.2	89.0
Liberal Arts, English	4	2.0	3.4	92.4
Religion	2	1.0	1.7	94.1

Agriculture, Science, Math	5	2.5	4.2	98.3
Education	2	1.0	1.7	100.0
Total	118	59.0	100.0	
Missing System	82	41.0		
Total	200	100.0		

Note: The degree type was separated into two categories; Criminal Justice and Non-Criminal Justice.

Table 7

Null Hypothesis Test Summary

Null Hypothesis	Test	Sig	Decision
Professionalism	Independent-Samples Mann U Test	.176	Retain the Null Hypothesis
Performance	Independent Samples Mann U Test	.793	Retain the Null Hypothesis

Note: Criminal Justice and Non-Criminal Justice degrees were compared in separate groups.

Sample

The sampling frame for this study included participants from three different police departments in the state of Texas. Invitations were sent to participants requesting

voluntarily participation in an online survey on professionalism. After participants completed the survey, I provided the participating officers badge numbers to their corresponding departments who provided each individual officer's performance data. Once the information was accumulated, badge numbers were deleted and replaced using a generic identifier. Each of the officers who completed the survey are certified Texas peace officers from three departments.

Data imputation was used to replace missing scores from the original data set, and coefficient alpha for the 25 survey items (Table 8) served as the measure of score reliability. Coefficient alpha "measures internal consistency reliability, or the degree to which responses are consistent across the line items of measure" (Kline, 2016, p. 91). The process revealed a coefficient alpha of .69. According to Kline (2016) values of .70 are adequate, while values of .80 are considered very good, and values at .90 are excellent (Kline, 2016, p. 92). Accordingly, scores captured on the instrument fall below the acceptable value for reliability.

Table 8

Cronbach's Test for Reliability

Imputation	Alpha	N of Items
Original Data	.649	25
1	.694	25

Note: Results of the analysis is the Coefficient Alpha is .69.

Confirmatory Factor Analysis

I applied a Confirmatory Factor Analysis to test the modified professionalism survey by Hall (See Appendix A) for internal consistency and construct validity presented in Chapter 3.

In order to test the survey, the participant's results were scored 1 through 5, in accordance with the corelating designation: 1= Strongly Disagree through 5= Strongly Agree. The study adhered to the Guidance of Carlan and Lewis (2009) and reversed items 2, 8, 10, 12, 13, 15, 16, 17, 19, 20, and 25. Twenty-five survey items were measured against five predetermined factors. Figure 3 demonstrates the survey alignment to the survey factors: use of the professional organization as a major referent, belief in public service, belief in self-regulation, sense of calling to the field, and a feeling of autonomy (Snizek, 1972, p. 109).

I ran the Confirmatory Factor Analysis with study data using SPSS Analysis of Moment Structures (AMOS) structural equation modeling (SEM) software. Root Mean Square Error of Approximation (RMSEA), Bentler Comparative Fit Index (CFI), and the Tucker Lewis Index (TFI) were utilized to test the goodness of fit in relation to the survey instrument. As a result, the Root Mean Square Error of Approximation (RMSEA) was .061. A result of 0.01, 0.05, and 0.08 indicate excellent, good, and mediocre fit respectively, but clearly emphasized the arbitrariness in the choice of cutoff points (Kline, 2016, p. 275). The Bentler Comparative Fit Index (CFI) was at .70, and the Tucker Lewis Index (TFI) was at .64. The preferred results for the CFI and the TFI is > 0.9 or > 0.95 (Figure 3).

The results of the model did not reveal sufficiency (Figure 3). All three of the indicators: RMSEA, CFI, and TFI fell below standard. Two of the five predetermined factors of the survey did not measure significantly. It is possible this survey needs a larger sampling than the present study which could influence the results, “a larger sample may be needed to obtain more precise results” (Kline, 2016, p.276). This finding indicates the individual factors scores calculated here were not consistent with the original study. However, for this study, I used the overall professionalism score and not the individual factor scores.

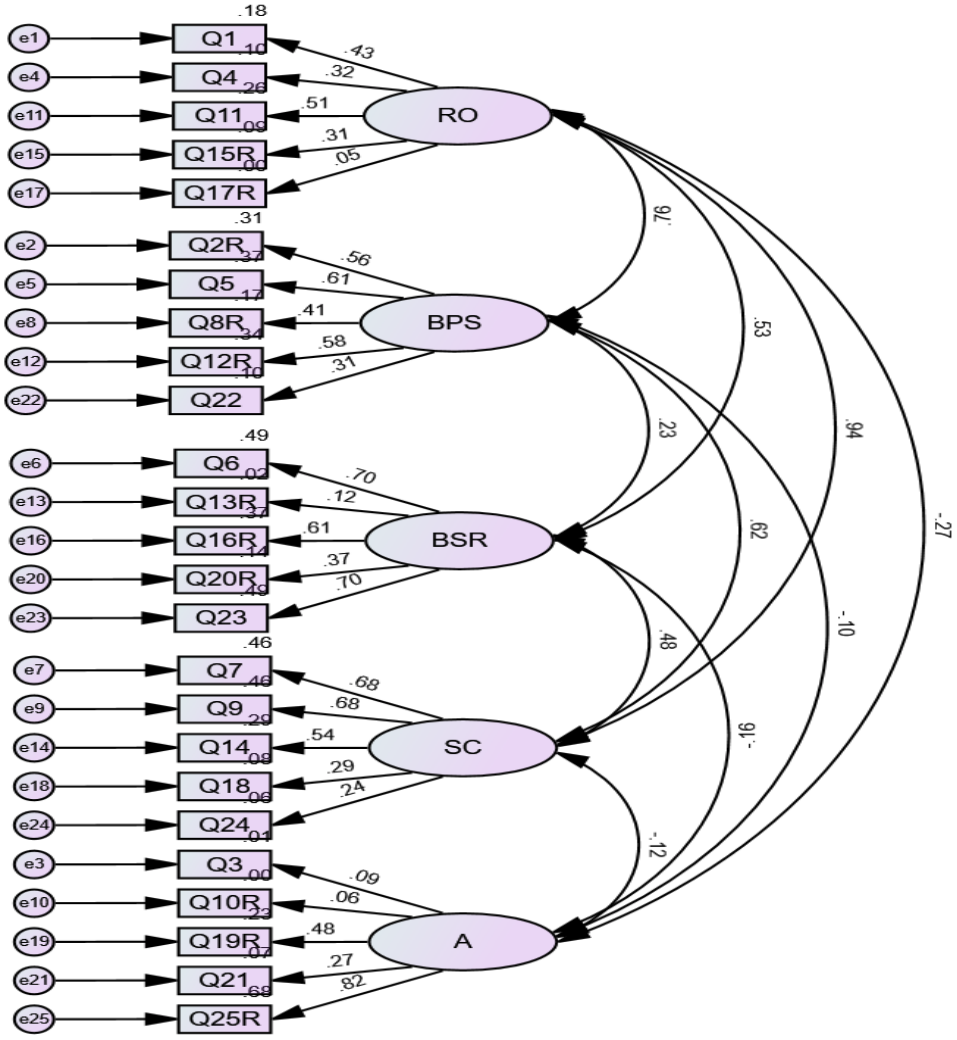


Figure 3

Confirmatory Factor Analysis for Professionalism Survey

Note: Items are numbered in the order presented in the text.

Table 9

Parameter Estimates

Parameter	B	SE	WCIL	WCIU	CHI	Df	Sig	EX(B)	EX(B)L	EX(B)U
(Intercept)	-1.493	.9605	-3.376	.389	2.417	1	.120	.255	.034	1.476
LOE= 5	-.888	.3101	-1.496	-.280	8.198	1	.004	.412	.224	.756
LOE= 4	-.836	.2184	-1.264	-.408	14.667	1	.000	.433	.282	.665
LOE= 3	-.722	.2743	-1.259	-.184	6.928	1	.008	.486	.284	.832
LOE= 2	0[a]	.	.	.	.	.	.	1	.	.
Professionalism	.397	.2762	1.144	.938	2.066	1	.151	1.487	.866	2.556
Training Hours	-2.642e-5	4.5731E-5	.000	6.321E-5	.334	1	.564	1.00	1.00	1.00
(Scale)	1[b]									
(Negative Binomial)	1.189	.1305	.959	1.474						

Negative binomial regression is an analysis based on counting the number of events in a categorical variable. The level of education (LOE) was identified by category: 2 (GED/high school), 3 (associate's), 4 (bachelor's), and 5 (master's degree or higher). Professionalism and officer training hours were also variables in the analysis (Table 9).

The formula used in this study is the following: Performance=PromotionalAchievements - UseofForce – DisciplinaryActions. The first step in this process is I removed the missing data by imputation. I created a variable called performance by subtracting disciplinary actions and use-of-force from promotions. In the efforts to use Negative Binomial or Poisson Log Linear, a new variable was created: NegativePerformance = 4- Performance. To test for Poisson Log and Negative Binomial Linear Regression, a new variable was created: In.TimeinService = In(TimeinService) (a natural log of time in service). The officers with a GED and a high school diploma were combined as a single level of education category, as only five police officers had a GED. There were two officers with a Ph.D., and they were combined with a master's degree or higher category. The results of the formula were compared and Negative Binomial Log Linear Regression was the better fitted model by measuring the results against the AIC and BIC scales.

The analysis revealed each level of education was statistically significant. The results of the analysis also revealed as the levels of education increases for a police officer, their negative performance levels are reduced. This can be observed by reviewing the Ex(B) column. A result of less than 1 was generated because a negative relationship exists between performance and level of education. As this scale is negatively constructed, the higher their score is translating to a decline in performance.

Professionalism and officer training hours were not significant to police performance at .114 and .564.

By calculating the average performance (the original performance, not negative performance) for each level of education, the results illustrated a positive correlation between levels of education to police performance. The performance level increases for each of the educational groups, including officers who obtain or hold graduate degrees. On average, participants with a high school/GED level of education earned an average negative score. Participants who held an undergraduate degree scored positively, and participants who hold a graduate degree continue to increase positively. Associate degrees were very close to neutral (Table 10 and Figure 4).

Table 10

Educational Descriptives

Level	N	Mean	STD	SE	CIL	CIU	Min	Max
High School	56	-4.0179	7.04915	.94198	-5.9056	-2.1301	-32.00	4.00
Associates	33	-.0303	4.44751	.77421	-1.6073	1.5467	-16.00	4.00
Bachelor's	86	.8837	2.98001	.32134	.2448	1.5226	-17.00	4.00
Master's +	25	1.2000	2.14087	.42817	.3163	2.0837	-5.00	4.00
Total	200	-.6000	5.09508	.36028	-1.3.104	.1104	-32.00	4.00

Note: SE is Standard Error, CIL and CIU are the Confidence Interval for Mean Upper and Lower Bound. N is valid observations; STD is Standard Deviations.

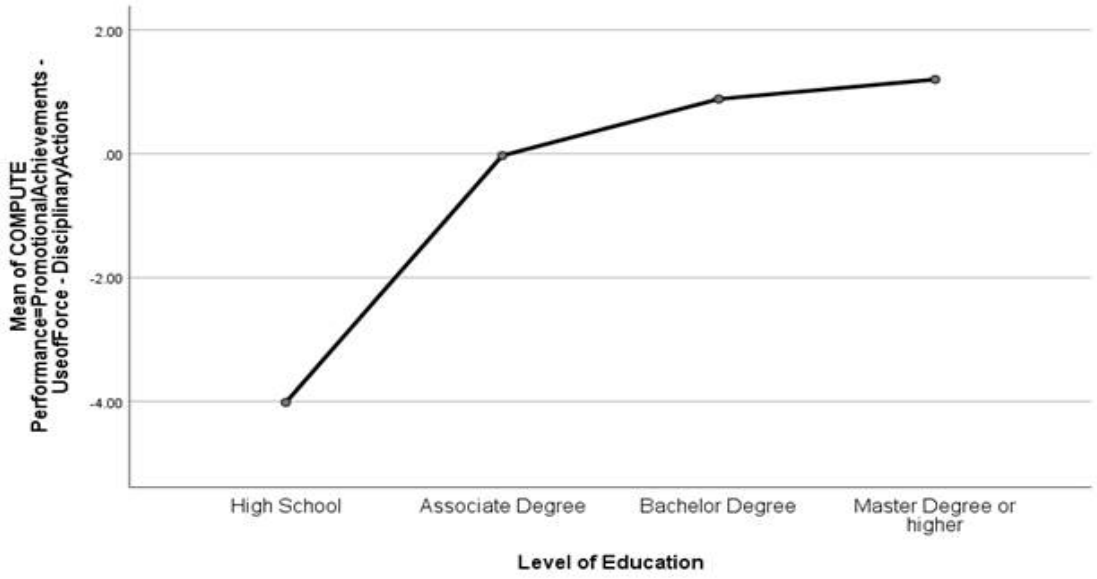


Figure 4

Performance as a Function of Level of Education

Odds Ratio and Findings

The odds ratio for this study compares the negative performance of police officers and their Level of Education (LOE) which uses a 2 as a reference. This means in each case officers with a college degree were being compared to those with a high school diploma/GED. LOE=3 (associate's degrees), Exp(B) is .486 with a reciprocal of 1/0.486 = 2.05. For LOE=4 (bachelor's degrees), Exp(B) is .486 with a reciprocal of 1/0.433 = 2.30. For LOE=5 (master's degree or higher), Exp(B) is .486 with a reciprocal of 1/0.412 = 2.42. Officers with an associate's degree are more than twice as likely to have better performance results than officers with a high-school/GED education. Officers with a bachelor's degree are 2.3 times as likely to have better performance scores than officers

with a high-school/GED education. Officers with a master's degree are 2.42 times as likely to have better performance scores than officers with a high-school/GED education.

Review of the odds ratio suggests a marginally important effect to provide supporting evidence to inform policy decisions in police organizations (e.g., to hire applicants with an associate's degree or higher in order to decrease negative police performance and enhance overall police performance and perception by the public).

Table 11

Test of Model Effects

Source	LRCHI	Df	Sig
Intercept	44.705	1	.000
LOE	17.646	3	.001
Professionalism	2.043	1	.153
Training Hours	.327	1	.567

Note: LRCHI means Likelihood Ratio of Chi-Square, df is Degrees of Freedom and Sig is significance level.

Table 11 provides statistical results that the level of performance is dependent on the level of education (Chi-Square = 17.6. df = 3. $p < .01$), not on professionalism (Chi-Square = 2.0. df = 1. $p < .15$) or officer training (Chi-Square = .33. df = 1. $p < .57$). Tests of the model effects involves evaluating each term in the model to ascertain its effect. Model terms which have a significance value of less than .05 indicates a significant effect. Terms of the model test which have significance values greater than .05 do not have a statistical effect. Each of the main-terms listed contributes to the model.

The Chi-Square (χ 2) "tests the exact-fit hypothesis that there is no difference between the covariates predicted by the model, given the parameter estimates" (Kline, 2016, p.265). Meaning, the Chi-square (χ 2) measures how a model compares to the actual observed data, and the Chi-square (χ 2) can show divergences of the observed and expected results. Degrees of freedom are the number of values in the final calculation of a statistic free to vary (Hurlburt, 2012, p. 607). These values can specify the movement or position the system adopts without violating any rules imposed on it. I utilized a Type I error rate (α, alpha) level of .05 as the criterion for determining statistical significance set prior to the start of the study. If the (α, alpha) is less than .05, the null hypothesis will be rejected, however if the (α, alpha) is greater than .05 this means the null hypothesis will fail to be rejected.

I utilized the analysis results provided by the test of model effects to answer this study's first and third research questions, specifically the level of significance values (Table 11). I utilized the analysis results provided by the Mann-Whitney U test which tested the null hypothesis between participants with a criminal justice degree and a non-criminal justice degree for the second research question (Table 7).

Research Question 1 Results

Research Question 1

Is there a statistically significant relationship between Level of Education (X) and job Performance (Y) for law enforcement officers?

Hypothesis 1a: Null Hypothesis H_0: $b_1 = 0$. Level of Education (X) will not predict a positive relationship with law enforcement officer Performance (Y).

Hypothesis 1b: Alternative Hypothesis H_1: $b_1 > 1$. Level of Education (X) will predict a positive relationship with law enforcement officer Performance (Y).

The results of the study suggest levels of education predicts a positive relationship with law enforcement officer performance: (Chi-Square = 17.6. df = 3. $p < .01$) as depicted in Table 11. In addition, the results of the study also revealed police officers who obtain higher levels of education, their negative performance decreases (Figure 4 and Table's 9, 10). As a result, I rejected the Null Hypothesis.

Research Question 2 Results

Research Question 2

Does the major of a degree (X) increase the job Performance (Y) of law enforcement officers?

Hypothesis 2a: Null Hypothesis H_0: $b_1 = 0$. Specific Degree Types (X) will not increase a law enforcement officer's overall job Performance (Y).

Hypothesis 2b: Alternative Hypothesis H_1: $b_1 > 1$. Specific Degree Types (X) will increase a law enforcement officer's overall job Performance (Y).

The results of the study suggest the majors of a degree will not increase a law enforcement officer's job performance or professionalism: (.793) as depicted in Table 7. As a result, I kept the Null Hypothesis.

Research Question 3 Results

Research Question 3

Is job Performance a function of Professionalism?

Hypothesis 3a: Null Hypothesis H_0: $b_1 = 0$. The relationship between level of Professionalism (X) and Performance in the field (Y) is not statistically significant.

Hypothesis 3b: Alternative Hypothesis H_1: $b_1 > 1$. The relationship between level of Professionalism (X) and Performance in the field (Y) is statistically significant.

The results of the study suggest levels of professionalism do is not statistically significant with law enforcement officer performance: (Chi-Squared = 2.0. df = 1. $p < .15$) as depicted in Table 10. As a result, I kept the Null Hypothesis.

Summary

The results of the data analysis indicate that performance is associated with level of education for the participants of this study. Meaning, the more education an officer holds results in a better performance score than the previous categorical degree holder. All of the participants who held any college degree scored higher than officers with only a high school diploma/GED. The major of a degree earned by participants also did not reveal significance to both professionalism and performance. I answered all 3 of the research questions using Negative Binomial Log Linear Regression within the study's pragmatic framework. Research Question 1's Null Hypothesis was rejected, and, Research Question's 2's and 3's was kept.

The poor psychometric properties of the survey instrument were noted, as the instrument proved to be unreliable and its purported structure (i.e., confirmed by poor factor analytic results). The total score on the survey instrument was used in the data analysis. However, I acknowledge the poor psychometric properties of the instrument and recommend future work

targeting improvement of the instrument. In fact, the development of an entirely new instrument is recommended.

Concerning the study's problem statement: Law enforcement agencies are often reluctant to mandate higher education for officers. Results from prior studies do not indicate a strong relationship between higher education attainment and enhanced officer performance. Empirical studies are needed to determine if higher education improves police officer performance. The results of the study should illuminate the relationship of higher education with enhanced police performance and provide policy makers the necessary data to standardize an associate's degree or higher for future police applicants.

CHAPTER V: DISCUSSION

Since the early 1900s, indecision has prevented a national policy of police departments standardizing a college education as a requirement for employment in law enforcement. Currently, empirical studies have not provided substantial or conclusive results which can potentially provide the means to solidify the argument that higher education can improve police performance. This study aimed to provide research to address the gaps in the literature and provide the necessary statistical association between higher education and police performance.

Variables

To collect the necessary data for this study, I gathered performance variables from three police departments in Texas on certified and sworn police officers (See Appendix F). I collected data from each participating officer on the following variables: disciplinary actions, time in service, commendations, use-of-force incidents, firearms discharge, promotional achievements, and professionalism. The data I collected on professionalism was obtained from an electronic survey provided to police officers in the participating departments. Firearms discharges and commendations were eliminated from the study as they were categorically insignificant and did not correlate.

Limitations of the Study

COVID-19 and the civil disturbances in the United States placed unavoidable limitations on this study. I provided an electronic survey to capture data on professionalism, for speed of collection, officer safety with COVID-19 complications, and the convenience of

officers who had time constraints from ongoing civil disturbance events. These complications lasted from March of 2020 until the date this study was completed. Several large-and-medium- sized departments around the nation chose to decline to participate based on these events. I intend on replicating this study in the future with a larger sampling, and I hope police departments and officers will be receptive to participate.

Testing Results

Using Negative Binomial Log Linear Regression, the analysis of the data revealed training hours, degree type, and professionalism were not statistically significant to performance (Table's 6, 7, 9, 10, and 11). In the case of professionalism, the findings indicated the individual factor scores were not consistent with the original study, and several factor loadings did not support the construct (Figure 3). Therefore, I used the overall professionalism score and not the individual factor scores to measure this variable.

In contrast, the level of education obtained by police officers does relate to higher levels of police performance (Table 9). Using odds ratios, officers with a college degree were compared to those with a high school diploma/GED. LOE=3 (associates degrees), Exp(B) is .486 with a reciprocal of 1/0.486 = 2.05. For LOE=4 (bachelor's degrees), Exp(B) is .433 with a reciprocal of 1/0.433 = 2.30. For LOE=5 (master's degree or higher), Exp(B) is .412 with a reciprocal of 1/0.412 = 2.42. Officers with an associate's degree are more than twice as likely to have better performance results than officers with a high-school/GED education. Officers with a bachelor's degree are 2.3 times as likely to have better performance scores than officers with a high school/GED education. Officers with a master's degree are 2.42 times as likely to have better performance scores than

officers with a high-school/GED education (Table 6). With an odds ratio of over two times more likely to have higher performance scores for officers with any college degree level, I suggest raising the education qualifications of police officers based on the results of the study.

These findings were not surprising and yet still enlightening. In the case of level of education's relationship to performance scores, I was not surprised. The benefits of higher education have long been supported and a majority of professionalized fields require a degree, often requiring specific fields of study for critical skills sets. Higher education also provides students more time to develop problem solving skills, which are crucial to handle enhanced and complex situations. Police officers with higher education perform the demands of their positions better than those without higher education, are more flexible, culturally tolerant, and less authoritarian (Roberg & Bonn, 2004, p. 474). This is reflective of higher education which supports the need for law enforcement to standardize college education for employment and eligibility.

I was not surprised professionalism (Chi-Squared = 2.0. df = 1. $p < .15$) and officer training hours (Chi-Squared = .33. df = 1. $p < .57$) were not predictors of higher police performance (Table 11). Both of these variables are subjective to the individual officer. Officers who love their job are not necessarily the most gifted in the field, and their ability to carry out their responsibilities are not predicated on their view point. Traditionally, professionalism is viewed in the terms of attitudinal attributes which reflect the way officers view their work (Loftus & Price, 2016, p. 57).

This concept also applies to training hours. Many police officers accumulate training hours in a variety of areas, but this does not mean they will perform better at

their job (Table 11). Their performance varies based on their abilities to carry out their duties. This can be developed over time with the right type of training; therefore, training should be based on the needs of the department and individual officer(s). In no way am I suggesting not to train or cultivate a great working environment, a progressive department should do both with a clear goal in mind.

I was surprised that degree type did not matter; it was just important that an officer had a higher level of education (Table 7). More importantly, as officers attained higher levels of education beyond a high school diploma, their performance scores increased (Table 9 and Figure 4). Conceptually, these findings suggest officers who attain higher levels of education have increased critical thinking and problem-solving skills and therefore departments should standardize college degrees for the employment and advancement of police officers (Stickle, 2016, p. 3).

Practical Implications

The results of the study can provide factual information needed to address the practical implications for law enforcement organizations and policy makers concerning the standardization of higher education for police officers. August Vollmer is regarded as the progenitor of challenging national policy requiring police officers to hold college education as a requirement for employment in the early 1900s. (Pauline & Rossler, 2015, p. 51). This movement has continued to remain in a stalemate. The value of education is not in question, rather the extent to which it improves performance is not held in consensus (Gardiner, 2017, p. 25). The results of this study suggest levels of education is strongly related to the enhanced performance of police officers (Table 11). With these

results, I am proposing a change in the hiring practices and qualifications for police officers to require higher education.

How is this change going to affect law enforcement organizations? A national or an individual change to any organization will create obstacles. Similar to other fields, law enforcement already has retention issues and has been lowering standards to compensate for their losses (Cordner, 2019, p. 234). The main concern is the monetary impact college education will create in hiring practices, smaller organizations do not have the ability to match the pay of larger organizations (Gardiner, 2015, pp. 650-651). Recruiters are also concerned only hiring college educated applicants will discriminate against minority applicants wishing to enter the field of law enforcement (Gardiner, 2015, p. 648). Recruiters are also concerned with this change because it will eliminate organizations ability to hire applicants with specialized skill sets solely because they do not possess a degree, such as military veterans (Gardiner, 2017, p. 21). Further studies are necessary to examine the validity of these claims.

Evidence from previous studies strongly suggest one of the best ways of implementing changes concerning academic qualifications in law enforcement is to begin at the top of each organization. Agencies who are led by leaders who hold college degrees are more likely than those without a degree to employ officers with a degree as well (Gardiner, 2017, p. 32). Another implementation is salary based, where the department pays beyond the minimum requirement for having a degree and provides incentives for officers to complete a degree program. Police departments in California provide effective incentives for applicants and current employees to obtain college diplomas. Law enforcement organizations in California tie promotions directly to

education, they provide flexible shifts for officers to attend class, use of an official vehicle for classes, and provide tuition reimbursement for officers (Gardiner, 2015, p. 655). The evidence in Gardiner's study strongly suggests incentivizing education will provide the necessary motivation for new recruits and current employees to obtain a degree and help create a professionalized workforce. Implementing a change in policy will benefit each police department with a college educated workforce.

Training hours (Chi-Squared = .33. df = 1. $p < .57$) were not predictors of higher police performance (Table 11). I am not advocating for a departure from continuous and regulatory training, it is important. Police officers should be proficient with levels of force applications, be physically fit, and intrinsically motivated to be effective in their role. This study suggested a different approach to how police officers are initially trained, called cross-cultural sub competence (Zuzeviciute et Al., 2017, p. 126). This approach is fundamentally different than what occurs in the United States in the training of police recruits. It combines skill-based training and theoretical knowledge molded by both university faculty and law enforcement personnel in a joint decision-making process (Zuzeviciute et Al., 2017, p. 127). Police officers who are provided better fundamental training have the potential to reduce litigation and embarrassment to a department, which erodes public opinion and trust (Koepfler et Al., 2012, p. 144). This process would not be arduous to implement, as more than 300 police academies are located on college campuses and trade schools in the United States (Cordner, 2019, p. 232). This provocative method could help produce officers with higher intellectual capacity with better problem-solving skills, reducing collateral damage to society and improving their image to the public.

Research Implications

This study created several research implications generated from its findings. Further study is necessary on both the professionalism instrument used in this study and on whether professionalism is a true indicator of performance. The results of CFA revealed poor fit of the model to the empirical data, which differed from previous studies. The Root Mean Square Error of Approximation (RMSEA) was .061 (acceptable). A result of 0.01, 0.05, and 0.08 indicate excellent, good, and mediocre fit respectively (Kline, 2016, p. 275). The Bentler Comparative Fit Index (CFI) was at .70 (very poor), and the Tucker Lewis Index (TFI) was at .64 (very poor). The preferred results for the CFI and the TFI is > 0.9 or > 0.95 (Figure 3). The Alpha test for reliability also scored below acceptability for reliability at .69 (Table 8).

I suggest conducting future research with a larger, more representative sample compared to the one used in this study to evaluate whether Hall's Professionalism Survey (See Appendix A) remains a valid measurement tool. Professionalism is an important variable which can show attitudinal value held by employees, as several generations of employees can view these concepts differently. What employees value now can be different than what employees valued previously. It is important to capture these changes.

Training is a major talking point in the law enforcement community. Based on this study's results, training hours do not correlate to higher performance scores (Table 11). I suggest separating general training into categories and re-analyzing the data to determine if certain types of training lead to higher performance scores. Determining why certain categories are effective and others are not is important to ensure officers are receiving quality training which can lead to better results. Training which does not

correlate to enhanced performance should be discontinued, unless it is determined to be essential regulatory training or maintenance of specific skills. Each department should conduct a needs assessment derived from community responses and crime statistics to determine what training should be included in the annual curriculum.

As more students engage in online or distance learning to obtain college degrees, further studies should be conducted to examine if officers who obtain a degree online score consistently with those from a traditional educational background. Currently, no research has been conducted on how many employees in law enforcement have obtained college degrees through online means (Rydberg & Terrill, 2010, p. 112). I suggest conducting a nationwide survey to ascertain how many officers have earned an online degree, and use this data for future research to examine if any difference in performance exists between the traditional and online learning.

Although degree type did not correlate to police performance in this study (Table 5), further studies are needed to determine if the curriculum of a criminal justice degree is providing police officers the necessary skills to meet the demands in the field. The majority of colleges in the United States only require 10% of the curriculum to focus on policing in degrees centered on criminal justice education (Cordner, 2019, p. 236). Master's degree programs in criminology only averages 25% of student's curriculum which focuses on police-centric courses and instead emphasize research skills instead of occupational skills (Cordner, 2019, p. 236). Institutions of higher education has an opportunity here, if the research supports it, to ensure the curriculum of a criminal justice degree to provide critical theoretical and practical knowledge to degree earners wishing to enter the field of law enforcement.

Social Implications

Though not the focus of this study, its results have social implications impacting the relationship between the public and law enforcement. Ignited by the George Floyd incident which has instigated nationwide civil unrest, a call for defunding the police, as well as reforming the current police model to a community policing model have been explored. Community policing is a viewpoint strongly supported as it aligns the police with the community to address public safety, fear of crime, and quality of life (Greene, 2000, p. 236). Regardless of whether policing models change in the future, police department should attempt to address their negative perception held by many communities, hiring police officers who mirror the communities they serve is an important step to attempt to change the perception of law enforcement.

Police departments' inability to attract and hire female and minority applicants is a great concern which was examined in the literature review. Gardiner (2017) suggests this is because hiring minorities or female applicants is not a priority for many agencies (Gardiner, 2017, p. 21). Nationally, women comprise of 11% of the law enforcement community (Meier &Nicholson-Crotty, 2006, p. 854). This is further reinforced by a first-time study in 2014 looking at historically Black colleges and universities (HBCU) and mixed raced institutions (MRI), where criminal justice is the sixth most popular degree for students (Drestch et al., 2014, p. 306). Despite this statistic, only 25% of students within this discipline were interested in pursuing a career in law enforcement after graduation (Drestch et al., 2014, p. 307). I suggest further research on why these students are not entering the field of law enforcement. If law enforcement wants to

change its image to one that is inclusive to the communities they serve, while raising the quality of their workforce, hiring minorities and females is imperative.

Conclusions

This study has provided significant results which show a strong relationship between higher education and police performance. Previous research has sought to discover if higher education effects police performance by examining the multiple variables inconsistently. Using a pragmatic framework, I examined all the variables I found in the literature simultaneously using Negative Binomial Log Linear Regression. The study was able to answer all three research questions, and determined higher education does affect law enforcement performance, degree type does not matter, and professionalism is not correlated to performance. Similarly training hours are not correlated to performance. Further research is necessary to determine if the professionalism survey (See Appendix A) used in this study is obsolete, and if professionalism is a true measure of performance in policing. Law enforcement needs to ensure its employees have the necessary training, education, and awareness to continue to serve their community. Higher education should be standardized as a qualification to serve as a law enforcement officer.

APPENDIX SECTION

Appendix A

Professionalism Survey

Police Professionalism Questionnaire

Please indicate your level of agreement/disagreement with the following statements:

Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
A	B	C	D	E

D1. Please provide your badge number. Example; APD1234. (This will not be kept and dropped when crossed referenced and verified).

1. I systematically read the police journals.
2. Other professions are more vital to society than policing.
3. I make my own decisions with respect to work assignments.
4. I regularly attend professional meetings at the local level (community, state, or regional).
5. The police profession, more than any other, is essential for society.
6. Police officers have a good idea about the competence of other officers.
7. Police officers have a real “calling” for their work.
8. The importance of the police profession is sometimes overstressed.
9. The dedication of police officers is most gratifying.
10. I don’t have much opportunity to exercise my own judgment.
11. Police organizations should be supported.

12. Some occupations are more important to society than policing.
13. A problem in the police profession is that no one really knows what other officers are doing.
14. It is encouraging to see the high level of idealism maintained by police officers.
15. Police organizations are of little benefit to the average police officer.
16. Police officers have no way of judging each other's competence.
17. Although I would like to, I don't read police journals too often.
18. Most police officers would stay in the profession even if their incomes were reduced.
19. My own decisions are subject to review.
20. There is not much opportunity to judge how other police officers do their jobs.
21. I am my own boss in almost every work-related situation.
22. If ever an occupation is indispensable, it is policing.
23. Police officers know how well other officers perform their work.
24. There are very few police officers who don't believe in their work.
25. Most of my decisions are reviewed by other people.
26. Marital status: A = never married; B = married; C = divorced; D = separated; E = widowed
27. Hours worked/week (average): A = <40; B = 40-45; C = 46-50; D = 51-60; E = 61+
28. Job position: A = Detective; B = Management; C = Front-Line

Supervision;

D = Patrol Officer; E = Specialized

30. Gender: Self-Identify

32. Race: Self-Identify

33. Age: A = 21-28; B = 29-36; C = 37-44; D = 45-52; E = 53+

34. Highest education: A = GED; B = high school; C = associates; D = bachelor's; E = master's+

35. Years of police service: A = less than 1; B = 1-5; C = 6-10; D = 11-20; E = 21+

36. College Degree Major(s) (Self Identify of each degree obtained).

37. Did you obtain your college degree by distance learning or traditional? Note: For a degree to count as distance learning, more than half the degree is taken online (Self-Identify).

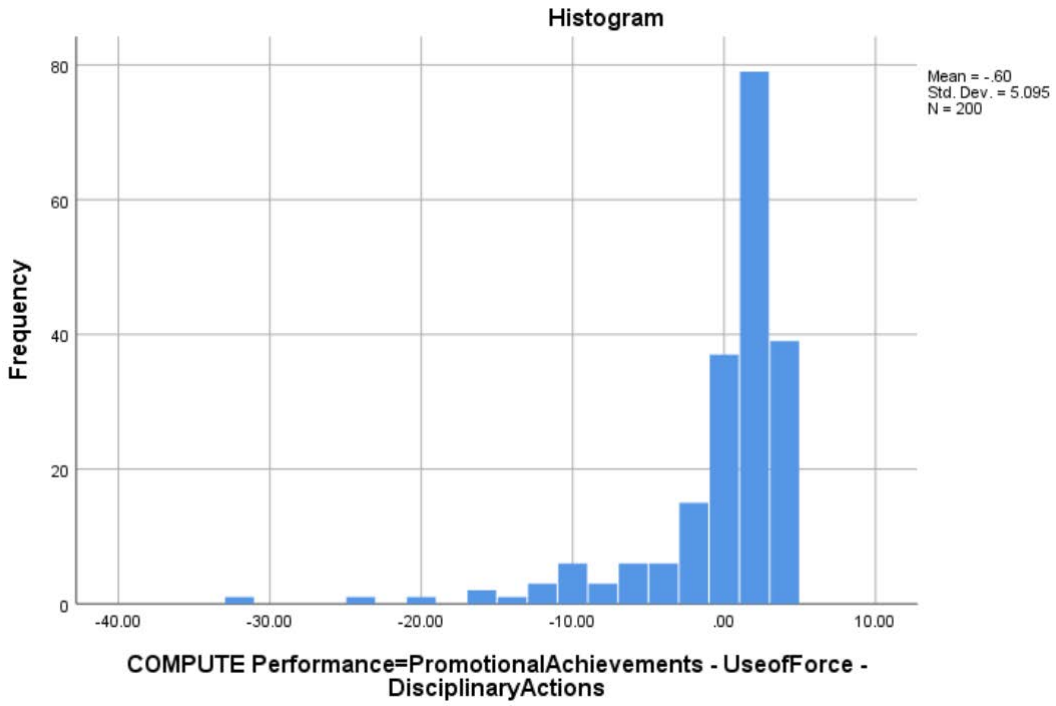
Appendix B

Poisson and Negative Binomial Long Linear Regression Analysis

Statistics

COMPUTE Performance=PromotionalAchievements - UseofForce - DisciplinaryActions

N	Valid	200
	Missing	0
Mean		-.6000
Median		1.0000
Minimum		-32.00
Maximum		4.00

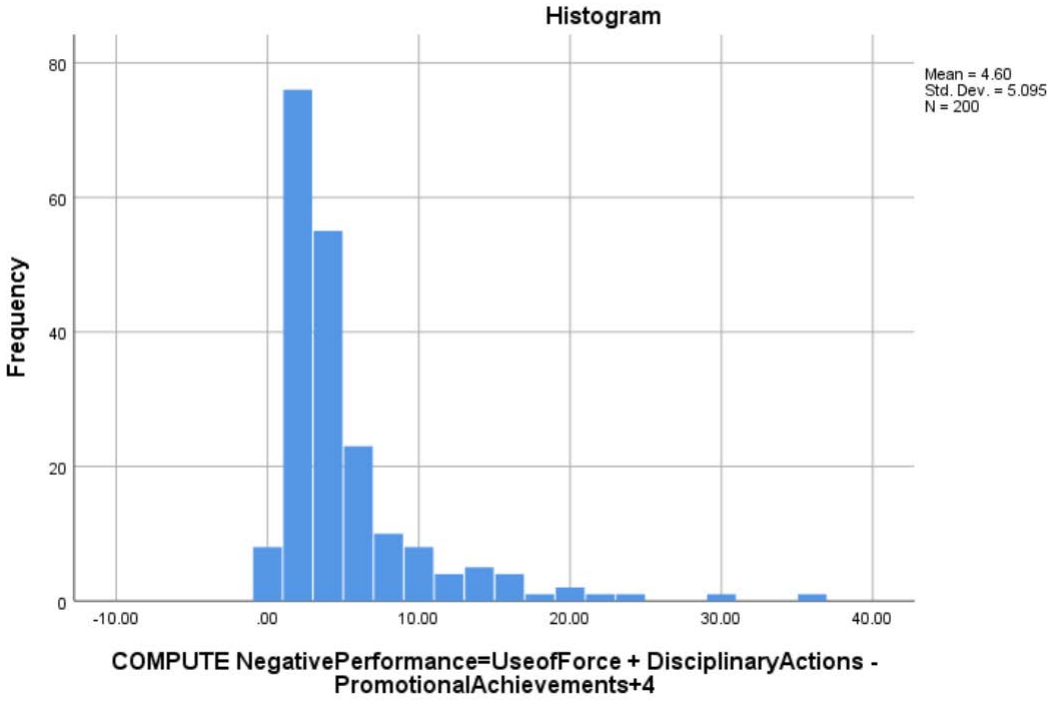


Poisson Analysis with NegativePerformance = 4-Performance

Statistics

COMPUTE NegativePerformance=UseofForce + DisciplinaryActions - PromotionalAchievements+4

N	Valid	200
	Missing	0
Mean		4.6000
Median		3.0000
Minimum		.00
Maximum		36.00



Poisson Logliner Regression using variable In.TimeinService = In(TimeService)

Generalized Linear Models

Notes

Output Created		19-AUG-2020 14:37:47
Comments		
Input	Data	C:\Users\reard\Dropbox\Documents\Advisees\Nanry, Chris\2020 08 19 Data set and analysis\2020 08 19 Cleaned and imputed_1.sav
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	File Label	Imputations
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	200
Missing Value Handling	Definition of Missing	User-defined missing values for factor, subject and within-subject variables are treated as missing.
	Cases Used	Statistics are based on cases with valid data for all variables in the model.
Weight Handling		not applicable
Syntax		GENLIN NegativePerformance BY LOE (ORDER=DESCENDING) WITH Professionalism OfficerTraining /MODEL LOE Professionalism OfficerTraining INTERCEPT=YES OFFSET=ln.TimeinService DISTRIBUTION=POISSON LINK=LOG /CRITERIA METHOD=FISHER(1) SCALE=1 COVB=MODEL MAXITERATIONS=100 MAXSTEPHALVING=5 PCONVERGE=1E-006(ABSOLUTE) SINGULAR=1E-012 ANALYSISTYPE=3(LR) CILEVEL=95 CITYPE=WALD LIKELIHOOD=FULL /MISSING CLASSMISSING=EXCLUDE /PRINT CPS DESCRIPTIVES MODELINFO FIT SUMMARY SOLUTION (EXPONENTIATED).
Resources	Processor Time	00:00:00.05
	Elapsed Time	00:00:00.05

Model Information

Dependent Variable	COMPUTE NegativePerformance=UseofForce + DisciplinaryActions - PromotionalAchievements+4
Probability Distribution	Poisson
Link Function	Log
Offset Variable	COMPUTE ln.TimeinService=ln(TimeinService)

Continuous Variable Information

		N	Minimum	Maximum	Mean	Std. Deviation
Dependent Variable	COMPUTE NegativePerformance=UseofForce + DisciplinaryActions - PromotionalAchievements+4	200	.00	36.00	4.6000	5.09508
Covariate	COMPUTE Professionalism=MEAN(Q1, Q2R, Q3, Q4, Q5, Q6, Q7, Q8R, Q9, Q10R, Q11, Q12R, Q13R, Q14, Q15R, Q16R, Q17R, Q18, Q19R, Q20R, Q21, Q22, Q23, Q24, Q25R)	200	2.36	4.32	3.4492	.33442
	Officer training - hours	200	1053	13984	2815.90	1667.310
Offset	COMPUTE ln.TimeinService=ln(TimeinService)	200	.00	3.89	2.5409	.79794

Goodness of Fit[a]

	Value	df	Value/df
Deviance	1245.711	194	6.421
Scaled Deviance	1245.711	194	
Pearson Chi-Square	2438.072	194	12.567
Scaled Pearson Chi-Square	2438.072	194	
Log Likelihood[b]	-920.434		
Akaike's Information Criterion (AIC)	1852.868		
Finite Sample Corrected AIC (AICC)	1853.303		
Bayesian Information Criterion (BIC)	1872.658		
Consistent AIC (CAIC)	1878.658		

Dependent Variable: COMPUTE NegativePerformance=UseofForce + DisciplinaryActions - PromotionalAchievements+4

Model: (Intercept), Level of Education, COMPUTE Professionalism=MEAN(Q1, Q2R, Q3, Q4, Q5, Q6, Q7, Q8R, Q9, Q10R, Q11, Q12R, Q13R, Q14, Q15R, Q16R, Q17R, Q18, Q19R, Q20R, Q21, Q22, Q23, Q24, Q25R), Officer training - hours, offset = COMPUTE ln.TimeinService=ln(TimeinService)[a]

a. Information criteria are in smaller-is-better form.

b. The full log likelihood function is displayed and used in computing information criteria.

Case Processing Summary

	N	Percent
Included	200	100.0%
Excluded	0	0.0%
Total	200	100.0%

Omnibus Test[a]

Likelihood Ratio Chi-Square	df	Sig.
250.970	5	.000

Dependent Variable: COMPUTE NegativePerformance=UseofForce + DisciplinaryActions - PromotionalAchievements+4

Model: (Intercept), Level of Education, COMPUTE Professionalism=MEAN(Q1, Q2R, Q3, Q4, Q5, Q6, Q7, Q8R, Q9, Q10R, Q11, Q12R, Q13R, Q14, Q15R, Q16R, Q17R, Q18, Q19R, Q20R, Q21, Q22, Q23, Q24, Q25R), Officer training - hours, offset = COMPUTE ln.TimeinService=ln(TimeinService)[a]

a. Compares the fitted model against the intercept-only model.

Tests of Model Effects

Source	Type III Likelihood Ratio Chi-Square	df	Sig.
(Intercept)	2007.300	1	.000
Level of Education	230.265	3	.000
COMPUTE Professionalism=MEAN(Q1, Q2R, Q3, Q4, Q5, Q6, Q7, Q8R, Q9, Q10R, Q11, Q12R, Q13R, Q14, Q15R, Q16R, Q17R, Q18, Q19R, Q20R, Q21, Q22, Q23, Q24, Q25R)	2.526	1	.112
Officer training - hours	7.156	1	.007

Dependent Variable: COMPUTE NegativePerformance=UseofForce + DisciplinaryActions - PromotionalAchievements+4

Model: (Intercept), Level of Education, COMPUTE Professionalism=MEAN(Q1, Q2R, Q3, Q4, Q5, Q6, Q7, Q8R, Q9, Q10R, Q11, Q12R, Q13R, Q14, Q15R, Q16R, Q17R, Q18, Q19R, Q20R, Q21, Q22, Q23, Q24, Q25R), Officer training - hours, offset = COMPUTE ln.TimeinService=ln(TimeinService)

Parameter Estimates

Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test			Exp(B)	95% Wald Confidence Interval for Exp(B)	
			Lower	Upper	Wald Chi-Square	df	Sig.		Lower	Upper
(Intercept)	-1.336	.3770	-2.075	-.597	12.566	1	.000	.263	.126	.550
[Level of Education=5.00]	-1.103	.1318	-1.362	-.845	70.042	1	.000	.332	.256	.430
[Level of Education=4.00]	-1.085	.0781	-1.238	-.932	193.269	1	.000	.338	.290	.394
[Level of Education=3.00]	-.864	.0989	-1.058	-.670	76.320	1	.000	.422	.347	.512
[Level of Education=2.00]	0[a]	.	.	.	.	.	.	1	.	.
COMPUTE Professionalism=MEAN(Q1, Q2R, Q3, Q4, Q5, Q6, Q7, Q8R, Q9, Q10R, Q11, Q12R, Q13R, Q14, Q15R, Q16R, Q17R, Q18, Q19R, Q20R, Q21, Q22, Q23, Q24, Q25R)	.167	.1055	-.040	.374	2.501	1	.114	1.182	.961	1.453
Officer training - hours	5.678E-5	2.0303E-5	1.698E-5	9.657E-5	7.820	1	.005	1.000	1.000	1.000
(Scale)	1[b]									

Dependent Variable: COMPUTE NegativePerformance=UseofForce + DisciplinaryActions - PromotionalAchievements+4

Model: (Intercept), Level of Education, COMPUTE Professionalism=MEAN(Q1, Q2R, Q3, Q4, Q5, Q6, Q7, Q8R, Q9, Q10R, Q11, Q12R, Q13R, Q14, Q15R, Q16R, Q17R, Q18, Q19R, Q20R, Q21, Q22, Q23, Q24, Q25R), Officer training - hours, offset = COMPUTE ln.TimeinService=ln(TimeinService)

a. Set to zero because this parameter is redundant.

b. Fixed at the displayed value.

Negative Binomial Analysis

Generalized Linear Models

Notes

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	Cases Used	Statistics are based on cases with valid data for all variables in the model.
Weight Handling		not applicable
Syntax		GENLIN NegativePerformance BY LOE (ORDER=DESCENDING) WITH Professionalism OfficerTraining /MODEL LOE Professionalism OfficerTraining INTERCEPT=YES OFFSET=ln.TimeinService DISTRIBUTION=NEGBIN(MLE) LINK=LOG /CRITERIA METHOD=FISHER(1) SCALE=1 COVB=MODEL MAXITERATIONS=100 MAXSTEPHALVING=5 PCONVERGE=1E-006(ABSOLUTE) SINGULAR=1E-012 ANALYSISTYPE=3(LR) CILEVEL=95 CITYPE=WALD LIKELIHOOD=FULL /MISSING CLASSMISSING=EXCLUDE /PRINT CPS DESCRIPTIVES MODELINFO FIT SUMMARY SOLUTION (EXPONENTIATED).
Resources	Processor Time	00:00:00.06
	Elapsed Time	00:00:00.06

Omnibus Test[a]

Likelihood Ratio Chi-Square	df	Sig.
20.925	5	.001

Dependent Variable: COMPUTE NegativePerformance=UseofForce + DisciplinaryActions - PromotionalAchievements+4

Model: (Intercept), Level of Education, COMPUTE Professionalism=MEAN(Q1, Q2R, Q3, Q4, Q5, Q6, Q7, Q8R, Q9, Q10R, Q11, Q12R, Q13R, Q14, Q15R, Q16R, Q17R, Q18, Q19R, Q20R, Q21, Q22, Q23, Q24, Q25R), Officer training - hours, offset = COMPUTE ln.TimeinService=ln(TimeinService)[a]

a. Compares the fitted model against the intercept-only model.

Case Processing Summary

	N	Percent
Included	200	100.0%
Excluded	0	0.0%
Total	200	100.0%

Categorical Variable Information

			N	Percent
Factor	Level of Education	Master Degree or higher	25	12.5%
		Bachelor Degree	86	43.0%
		Associate Degree	33	16.5%
		High School	56	28.0%
		Total	200	100.0%

Model Information

Dependent Variable	COMPUTE NegativePerformance=UseofForce + DisciplinaryActions - PromotionalAchievements+4
Probability Distribution	Negative binomial (MLE)
Link Function	Log
Offset Variable	COMPUTE ln.TimeinService=ln(TimeinService)

Parameter Estimates

Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test			Exp(B)	95% Wald Confidence Interval for Exp(B)	
			Lower	Upper	Wald Chi-Square	df	Sig.		Lower	Upper
(Intercept)	-1.493	.9605	-3.376	.389	2.417	1	.120	.225	.034	1.4
[Level of Education=5.00]	-.888	.3101	-1.496	-.280	8.198	1	.004	.412	.224	.7
[Level of Education=4.00]	-.836	.2184	-1.264	-.408	14.667	1	.000	.433	.282	.6
[Level of Education=3.00]	-.722	.2743	-1.259	-.184	6.928	1	.008	.486	.284	.8
[Level of Education=2.00]	0[a]	.	.	.	.	.	.	1	.	
COMPUTE Professionalism=MEAN(Q1, Q2R, Q3, Q4, Q5, Q6, Q7, Q8R, Q9, Q10R, Q11, Q12R, Q13R, Q14, Q15R, Q16R, Q17R, Q18, Q19R, Q20R, Q21, Q22, Q23, Q24, Q25R)	.397	.2762	-.144	.938	2.066	1	.151	1.487	.866	2.5
Officer training - hours	-2.642E-5	4.5731E-5	.000	6.321E-5	.334	1	.564	1.000	1.000	1.0
(Scale)	1[b]									
(Negative binomial)	1.189	.1305	.959	1.474						

Tests of Model Effects

Source	Type III Likelihood Ratio Chi-Square	df	Sig.
(Intercept)	44.705	1	.000
Level of Education	17.646	3	.001
COMPUTE Professionalism=MEAN(Q1, Q2R, Q3, Q4, Q5, Q6, Q7, Q8R, Q9, Q10R, Q11, Q12R, Q13R, Q14, Q15R, Q16R, Q17R, Q18, Q19R, Q20R, Q21, Q22, Q23, Q24, Q25R)	2.043	1	.153
Officer training - hours	.327	1	.567

Dependent Variable: COMPUTE NegativePerformance=UseofForce + DisciplinaryActions - PromotionalAchievements+4

Model: (Intercept), Level of Education, COMPUTE Professionalism=MEAN(Q1, Q2R, Q3, Q4, Q5, Q6, Q7, Q8R, Q9, Q10R, Q11, Q12R, Q13R, Q14, Q15R, Q16R, Q17R, Q18, Q19R, Q20R, Q21, Q22, Q23, Q24, Q25R), Officer training - hours, offset = COMPUTE ln.TimeinService=ln(TimeinService)

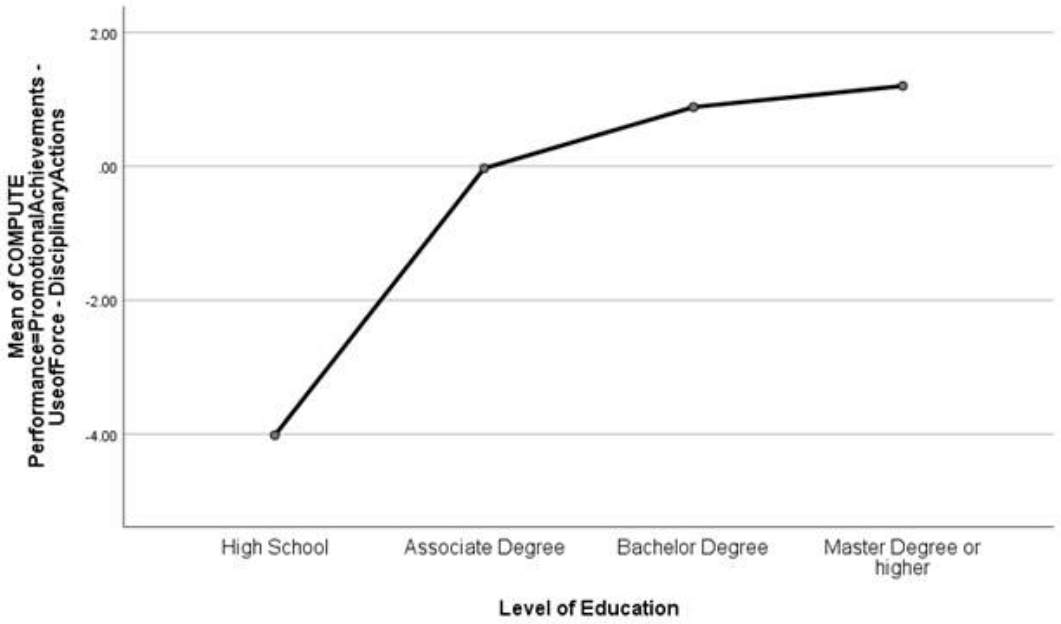
Negative Binomial and Poisson Regression Comparison (AIC and BIC)

	AIC	BIC
Poisson	1852	1873
Negative Binomial	1192	1214

Descriptives

COMPUTE Performance=PromotionalAchievements - UseofForce - DisciplinaryActions

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
High School	56	-4.0179	7.04915	.94198	-5.9056	-2.1301	-32.00	4.00
Associate Degree	33	-.0303	4.44751	.77421	-1.6073	1.5467	-16.00	4.00
Bachelor Degree	86	.8837	2.98001	.32134	.2448	1.5226	-17.00	4.00
Master's Degree or higher	25	1.2000	2.14087	.42817	.3163	2.0837	-5.00	4.00
Total	200	-.6000	5.09508	.36028	-1.3104	.1104	-32.00	4.00


Mean of COMPUTE Performance=PromotionalAchievements - UseofForce - DisciplinaryActions
2.00
.00
-2.00
-4.00
High School
Associate Degree
Bachelor Degree
Master Degree or higher
Level of Education

Appendix C

Key Terms

Adherence: A commitment to a set of rules, policy, or guidelines.

Akaike Information Center (AIC): Data analysis which combines statistical estimation and model selection in a single framework (Kline, 2016, p.287).

Autonomy: The ability or right to self-govern.

Bayes Information Criterion (BIC): A direct account of sample size (Kline, 2016, p. 287).

Criterion: Name used to describe the dependent variable in this case study.

Effect Size (ES): The size of the treatment effect the researcher wishes to detect with respect to a given level of power (Mertler, & Reinhart, 2017, p. 361).

General Education Development (GED): Equivalency degree to a high school diploma.

Higher Education: Any level of education beyond high school which is accredited, such as colleges and universities that provide bachelor's degrees, master's, and doctoral degrees. Associates degrees also fall into this category.

IBM SPSS: Statistical software program used to analyze inputted data.

Level of Significance: "In hypothesis testing, the pre-established probability of being incorrect; also known as the *alpha level"* (Mertler, & Reinhart, 2017, p. 1363).

Law Enforcement Personnel (LEP): These are members of local, city, state, or federal agencies within the United States. All of these members are able to enforce laws within the purview of their jurisdiction. This includes performing arrests, issuing citations, and controlling traffic patterns.

Mann-Whitney U Test: "A nonparametric (ordinal data) test for two independent samples" (Hurlburt, 2012, p. 609).

Multiple Regression: Multiple regression is a technique which "identifies the best combination of predictors (IVs) of the dependent variables" (Mertler, & Reinhart, 2017, p. 14).

Negative Binomial Log Linear Regression: Similar to Poisson Regression, "negative binomial distribution provides "an additional parameter such that the variance can exceed the mean" (Agresti, 2018, p. 220).

Odds Ratio: Use of the odds ratio (OR) provides a way to detect how likely or unlikely an outcome occurs in each situation. The OR represents the change in odds of an outcome while controlling for the other variables in the model (Pett, 2016, p. 329).

Parallel Example: An example of similarity to a law enforcement mission, training, or meaning existing in another field.

Path Coefficient: The standardized regression correlations associated with causal paths in a causal model (Mertler, & Reinhart, 2017, p. 365).

Poisson Regression: Poisson is a Generalized Linear Model used to compare the likelihood that a number of events 's (X) could occur during a fixed interval.

Power: The capability of rejecting Ho when Ho is in fact false: equal to 1-β (Mertler, & Reinhart, 2017, p. 365).

Personal Identifiable Information (PII): Information on an individual or group of individuals consisting of Dates of Birth, Social Security Numbers, Names (Partial of Full), Employee Numbers, Phone Numbers, and Home Address.

Practitioner: An individual actively engaged in his or her life situation; art, profession, or in most cases a medical position. For this research, this term applies to the law enforcement field.

Predictor: Name used to describe the independent variable in this case study.

Profession: "an occupation with a body of recognized knowledge and a developed intellectual technique" (Kornblum, 2008, p. 491).

Professionalism: "Professionalism as the conduct or qualities that characterize a profession, further defined as a calling requiring specialized knowledge and long, intensive academic preparation" (Dilday et al., 2017, p. 601).

Self-Regulation: The ability to control human behavior though long-term goals. In this study's case police officers. (See Appendix H for Law Enforcement Code of Ethics).

Appendix D

Variables Collected

Variable	Type	Source	Title	Results
Firearms Discharge	Independent	Department	Performance	Numeric
Use-of-Force	Independent	Department	Performance	Numeric
Disciplinary Actions	Independent	Department	Performance	Numeric
Commendations	Independent	Department	Performance	Numeric
Professionalism	Independent	Survey	Professionalism	Numeric
Promotional Achievements	Independent	Department	Performance	Numeric
In Service Training	Independent	Department	Performance	Numeric
Time in Service	Independent	Department	Performance	Numeric
Online	Independent	Survey	Higher Education	Specific
Level of Education	Independent	Survey	Higher Education	Specific
Martial Status	Independent	Survey	Professionalism	Specific
Hours Worked	Independent	Survey	Professionalism	Specific
Job Position	Independent	Survey	Professionalism	Specific

Gender	Independent	Survey	Professionalism	Specific
Race	Independent	Survey	Professionalism	Specific
Age	Independent	Survey	Professionalism	Specific
Years of Police Service	Independent	Survey	Professionalism	Specific
Degree Major	Independent	Survey	Higher Education	Specific

Appendix E

Independent and Dependent Variables

Name	Type	Source	Results
Higher Education	Independent	Higher Education	Likert/Specific
Police Performance	Dependent	Performance	Numeric

Appendix F

Data Sources

Name	Data Type	Source	Results
Medium Police Department	Performance	Department Files	Numeric
Small Police Department	Performance	Department Files	Numeric
Large Police Department	Performance	Department Files	Numeric
Medium PD Officers	Professionalism/Higher Education	Survey	Likert/Specific
Small PD Officers	Professionalism/Higher Education	Survey	Likert/Specific
Large PD Officers	Professionalism/Higher Education	Survey	Likert/Specific

Appendix G

Informed Consent

INFORMED CONSENT

Study Title: *Relationship of Higher Education and Law Enforcement*

Principal Investigator: Christian A. Nanry

Email: can*77@txstate.edu*

Phone: 917-886-4939

Co-Investigator/Faculty Advisor: *Dr. Robert Reardon*

Email: *rreardon@txstate.edu*

Phone: *512-245-3755*

This consent form will give you the information you will need to understand why this research study is being done and why you are being invited to participate. It will also describe what you will need to do to participate as well as any known risks, inconveniences or discomforts that you may have while participating. We encourage you to ask questions at any time. If you decide to participate, you will be asked to sign this form and it will be a record of your agreement to participate. You will be given a copy of this form to keep.

PURPOSE AND BACKGROUND

You are invited to participate in a research study to determine if correlation exists between higher education and law enforcement. The information gathered will be used to create a prediction model in efforts to assist with improving law enforcement performance. You are being asked to participate because you are in the field of law enforcement.

PROCEDURES

If you agree to be in the study, you will be asked to participate in one brief survey in __ or __ 2020. The survey will take approximately 20 minutes to complete. During the survey, you will be asked to assess your definition of professionalism pertaining to your career choice. The survey will be anonymously submitted. Your identity will be protected in the survey and all information will remain confidential.

RISKS/DISCOMFORTS

While no study has zero foreseeable risk, we believe the risk associated with this study is extremely low. The only foreseeable risk includes the rise of negative emotions related to frustrations with online learning.

In the event that some of the survey or interview questions make you uncomfortable or upset, you are always free to decline to answer or to stop your participation at any time. Should you feel discomfort after participating and you are a Texas State University student, you may contact the University Health Services for counseling services at 512-245-2208. They are located at 601 University Drive, LBJ 5-4.1, San Marcos, TX.

BENEFITS/ALTERNATIVES

There will be no direct benefit to you from participating in this study. However, the information that you provide may help improve institutional support for online graduate students at Texas State University.

EXTENT OF CONFIDENTIALITY

Reasonable efforts will be made to keep the personal information in your research record private and confidential. Any identifiable information obtained in connection with this study will remain confidential and will be disclosed only with your permission or as required by law. The members of the research team and the Texas State University Office of Research Compliance (ORC) may access the data. The ORC monitors research studies to protect the rights and welfare of research participants.

Your name will not be used in any written reports or publications which result from this research. Data will be kept for three years (per federal regulations) after the study is completed and then destroyed.

PAYMENT/COMPENSATION

You will not be paid for your participation in this study.

PARTICIPATION IS VOLUNTARY

You do not have to be in this study if you do not want to. You may also refuse to answer any questions you do not want to answer. If you volunteer to be in this study, you may withdraw

from it at any time without consequences of any kind or loss of benefits to which you are otherwise entitled.

QUESTIONS

If you have any questions or concerns about your participation in this study, you may contact the Principal Investigator, Christian A. Nanry: 917-886-4939 or can77@txstate.edu.

This project was approved by the Texas State IRB on [date]. Pertinent questions or concerns about the research, research participants' rights, and/or research-related injuries to participants should be directed to the IRB Chair, Dr. Denise Gobert 512-245-8351 – (dgobert@txstate.edu) or to Monica Gonzales, IRB Regulatory Manager 512-245-2334 - (meg201@txstate.edu).

DOCUMENTATION OF CONSENT

I have read this form and decided that I will participate in the project described above. Its general purposes, the particulars of involvement and possible risks have been explained to my satisfaction. I understand I can withdraw at any time.

Printed Name of Study Participant	**Signature** of Study Participant	Date

Signature of Person Obtaining Consent	Date

Appendix H

Law Enforcement Code of Ethics

As a law enforcement officer, my fundamental duty is to serve the community; to safeguard lives and property; to protect the innocent against deception, the weak against oppression or intimidation and the peaceful against violence or disorder; and to respect the constitutional rights of all to liberty, equality, and justice.

I will keep my private life unsullied as an example to all and will behave in a manner that does not bring discredit to me or to my agency. I will maintain courageous calm in the face of danger, scorn or ridicule; develop self-restraint; and be constantly mindful of the welfare of others. Honest in thought and deed both in my personal and official life, I will be exemplary in obeying the law and the regulations of my department. Whatever I see or hear of a confidential nature or that is confided to me in my official capacity will be kept ever secret unless revelation is necessary in the performance of my duty.

I will never act officiously or permit personal feelings, prejudices, political beliefs, aspirations, animosities or friendships to influence my decisions. With no compromise for crime and with relentless prosecution of criminals, I will enforce the law courteously and appropriately without fear or favor, malice or ill will, never employing unnecessary force or violence and never accepting gratuities.

I recognize the badge of my office as a symbol of public faith, and I accept it as a public trust to be held so long as I am true to the ethics of police service. I will never engage in acts of corruption or bribery, nor will I condone such acts by other police officers. I will cooperate with all legally authorized agencies and their representatives in the pursuit of justice.

I know that I alone am responsible for my own standard of professional performance and will take every reasonable opportunity to enhance and improve my level of knowledge and competence.

I will constantly strive to achieve these objectives and ideals, dedicating myself before God to my chosen profession… law enforcement.

Appendix I

Survey Recruitment Email

Dear participant,

This email message is an approved request for participation in research that has been approved or exempted by the Texas State Institutional Review Board (IRB).

Christian A. Nanry, a graduate student at Texas State University, is conducting research about Professionalism, Higher Education, and Law Enforcement Performance. The information gathered will be used to assist this research in assessing the relationships higher education and professionalism have on law enforcement performance. You are being asked to complete this survey because you are a law enforcement officer. If you are a sworn police officer, I invite you to participate in this study. Note for the purpose of this study, a sworn officer is an individual who has met all of the regulatory requirements of your department to be licensed and are currently employed in that position. The badge number will be used to validate your responses, and cross referenced, once confirmed the number will be deleted and not retained for any reason. This survey aims to collect your perspective of professionalism in law enforcement.

Note: please do not consider the remote or alternative delivery that is being done in response to COVID-19 in your survey evaluation. The intent of this survey is to evaluate causal relationships between higher education, professionalism, and law enforcement performance.

Participation is voluntary. The survey will take approximately 15 minutes or less to complete. You must be at least 18 years old to take this survey.

This study involves no foreseeable serious risks. We ask that you try to answer all questions; however, if there are any items that make you uncomfortable or that you would prefer to skip, please leave the answer blank. Your responses are anonymous.

Reasonable efforts will be made to keep the personal information in your research record private and confidential. Any identifiable information obtained in connection with this study will remain confidential and will be disclosed only with your permission or as required by law. The members of the research team, and the Texas State University Office of Research Compliance (ORC) may access the data. The ORC monitors research studies to protect the rights and welfare of research participants.

Your information will not be used in any written reports or publications which result from this research. Data will be kept for three years (per federal regulations) after the study is completed and then destroyed.

If you have any questions or concerns, feel free to contact Christian A. Nanry or his faculty advisor Dr. Robert F. Reardon:

Christian A. Nanry, graduate student
CLAS
917-886-4939
can77@txstate.edu

Dr. Robert F. Reardon, Assoc. Professor
CLAS
512-245-3755
rreardon@txstate.edu

This project #7223 was approved by the Texas State IRB on 5/11/2020. Pertinent questions or concerns about the research, research participants' rights, and/or research-related injuries to participants should be directed to the IRB chair, Dr. Denise Gobert 512-716-2652 – (dgobert@txstate.edu) or to Monica Gonzales, IRB Regulatory Manager 512-245-2334 - (meg201@txstate.edu).

If you would prefer not to participate, please do not fill out a survey.

If you consent to participate, please complete the survey below:

https://txstate.co1.qualtrics.com/jfe/form/SV_czFNOcAGjtKqNVz

Thank you,

Christian A. Nanry

Doctoral Student
Adult, Professional, and Community Education
Texas State University

Appendix J

Degree Major Analysis

Mann-Whitney U Test Analysis

DegreeNumber

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Criminal Science, Fire, Emer.Mgmt.	74	37.0	62.7	62.7
	Technical, engg, architecture	3	1.5	2.5	65.3
	History, sociology, psychology	12	6.0	10.2	75.4
	Business	7	3.5	5.9	81.4
	Healthcare	4	2.0	3.4	84.7
	Multi-discipline, applied science	5	2.5	4.2	89.0
	Liberal Arts, English	4	2.0	3.4	92.4
	Religion	2	1.0	1.7	94.1
	Agriculture, Science, Math	5	2.5	4.2	98.3
	Education	2	1.0	1.7	100.0
	Total	118	59.0	100.0	
Missing	System	82	41.0		
Total		200	100.0		

Nonparametric Tests

Notes

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Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of COMPUTE Professionalism=MEAN(Q1, Q2R, Q3, Q4, Q5, Q6, Q7, Q8R, Q9, Q10R, Q11, Q12R, Q13R, Q14, Q15R, Q16R, Q17R, Q18, Q19R, Q20R, Q21, Q22, Q23, Q24, Q25R) is the same across categories of CJdegree.	Independent-Samples Mann-Whitney U Test	.176	Retain the null hypothesis.
2	The distribution of COMPUTE Performance=PromotionalAchievements - UseofForce - DisciplinaryActions is the same across categories of CJdegree.	Independent-Samples Mann-Whitney U Test	.793	Retain the null hypothesis.

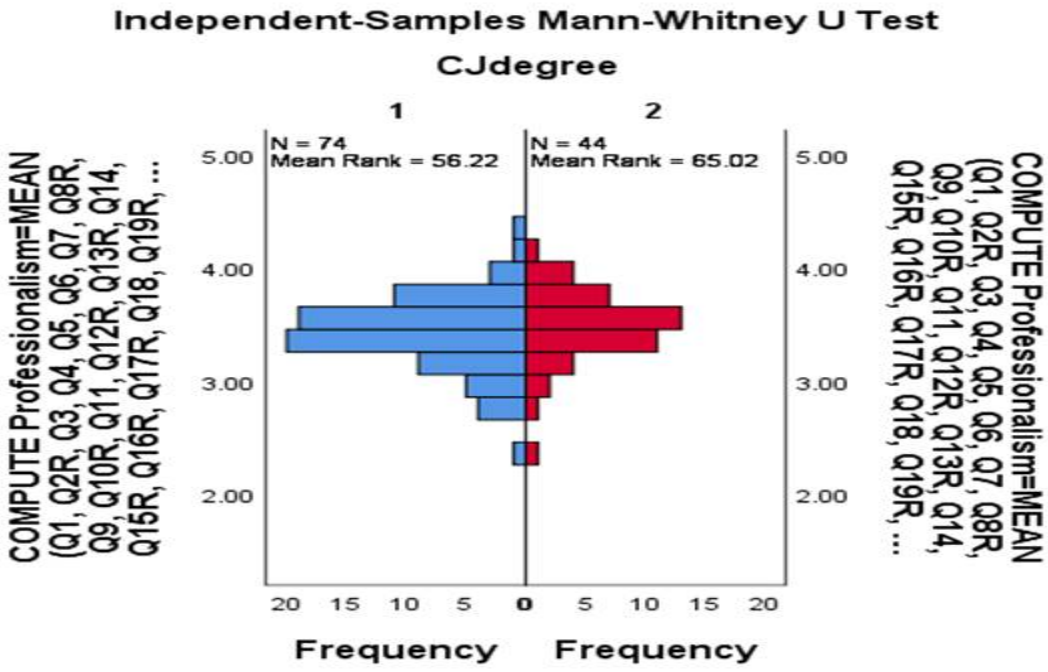
Asymptotic significances are displayed. The significance level is .050.

Independent-Samples Mann-Whitney U Test

COMPUTE Professionalism=MEAN(Q1, Q2R, Q3, Q4, Q5, Q6, Q7, Q8R, Q9, Q10R, Q11, Q12R, Q13R, Q14, Q15R, Q16R, Q17R, Q18, Q19R, Q20R, Q21, Q22, Q23, Q24, Q25R) across CJdegree

Independent-Samples Mann-Whitney U Test Summary

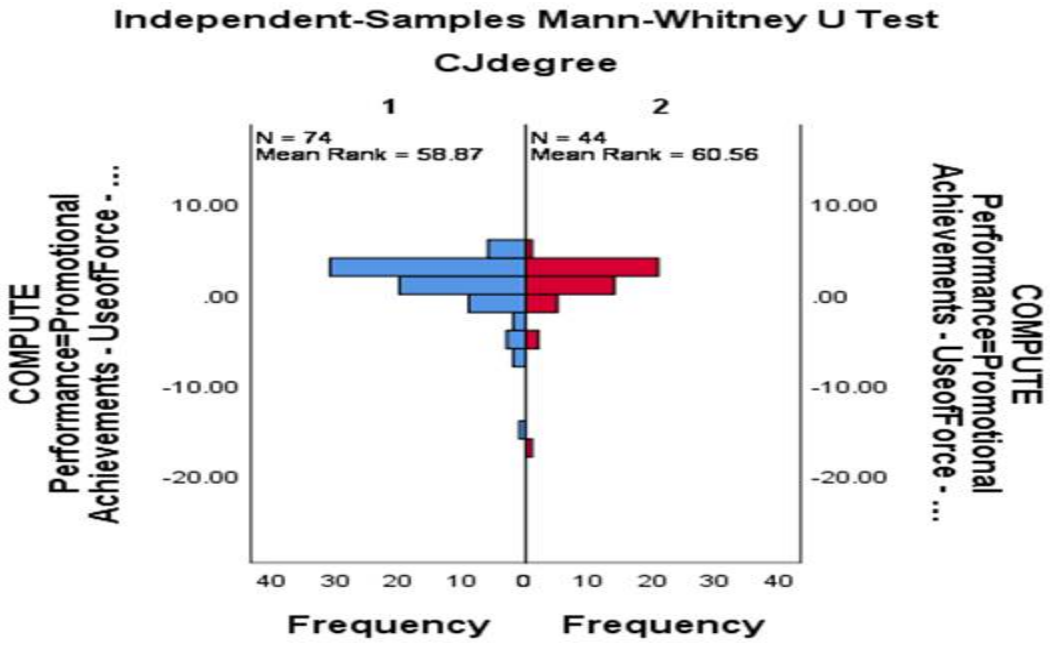
Total N	118
Mann-Whitney U	1871.000
Wilcoxon W	2861.000
Test Statistic	1871.000
Standard Error	179.444
Standardized Test Statistic	1.354
Asymptotic Sig.(2-sided test)	.176

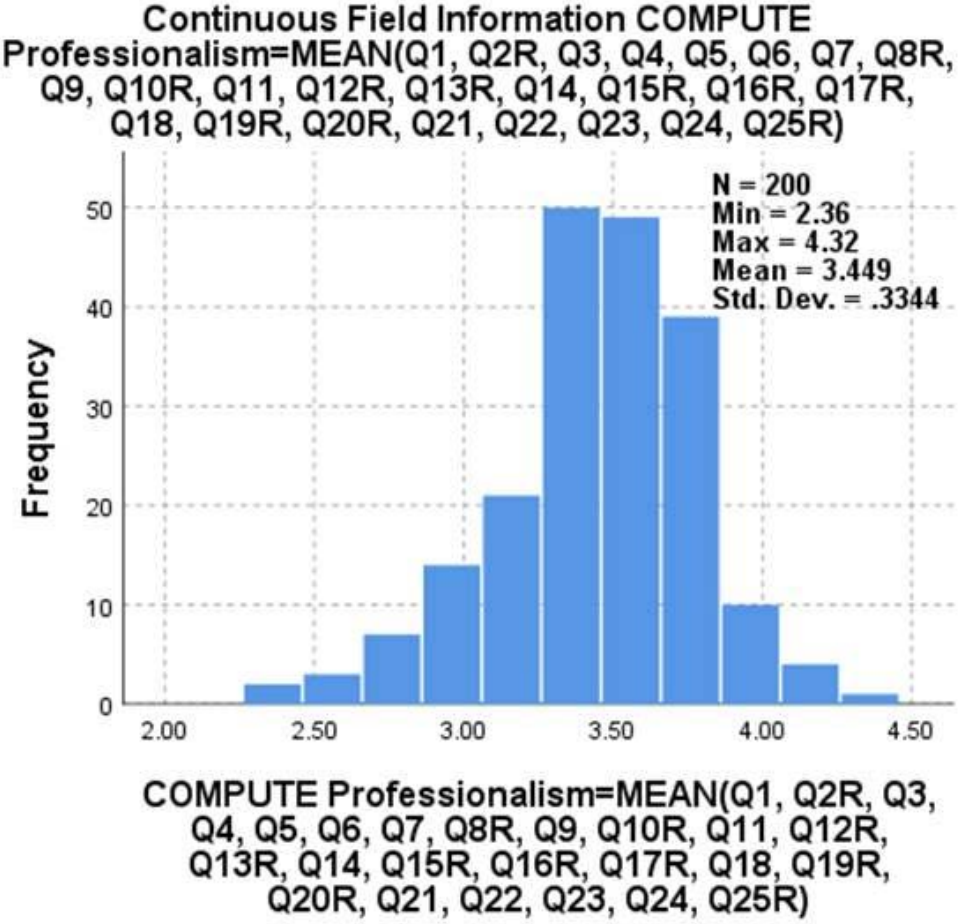


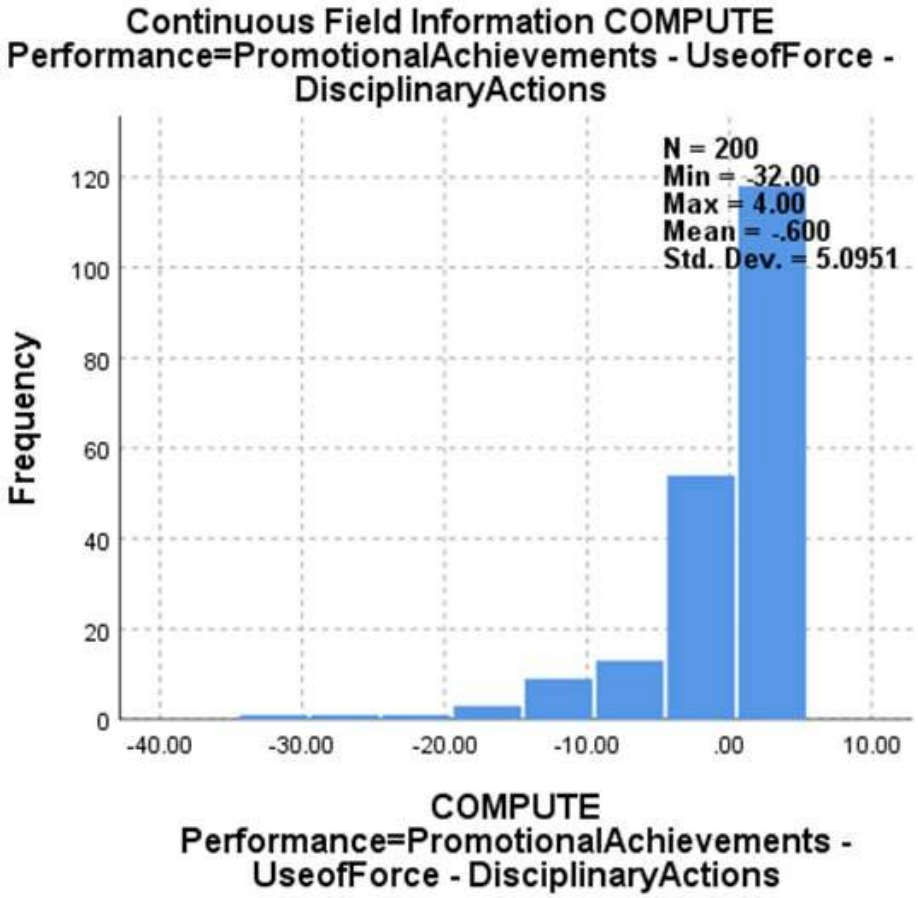
COMPUTE Performance=PromotionalAchievements - UseofForce - DisciplinaryActions across CJdegree

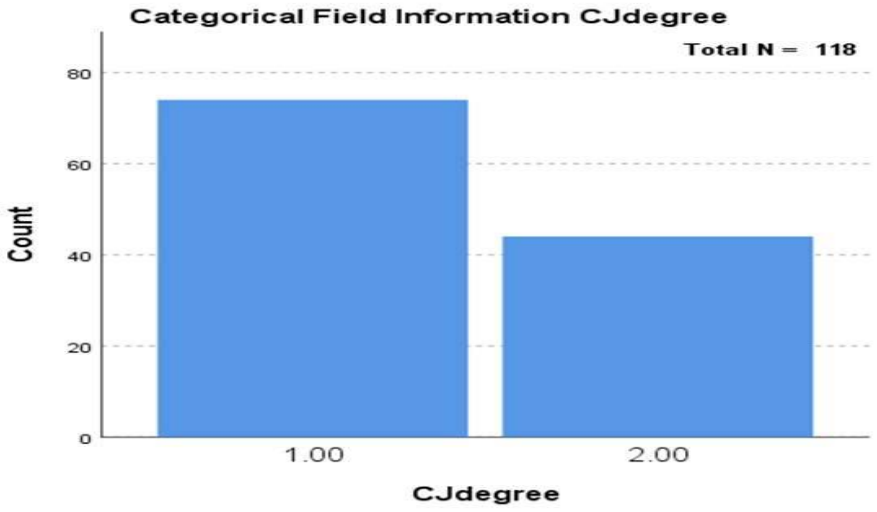
Independent-Samples Mann-Whitney U Test Summary

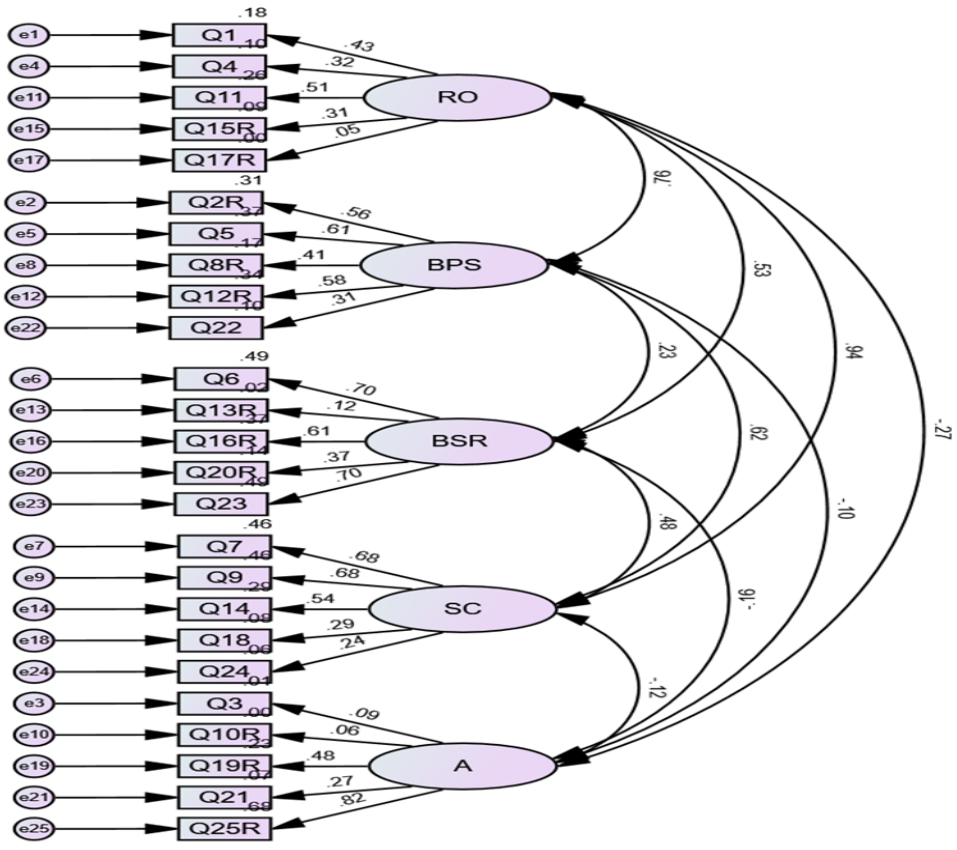
Total N	118
Mann-Whitney U	1674.500
Wilcoxon W	2664.500
Test Statistic	1674.500
Standard Error	176.767
Standard Deviation	.263
Asymptotic Sig.(2-sided test)	.793




Continuous Field Information COMPUTE Professionalism=MEAN(Q1, Q2R, Q3, Q4, Q5, Q6, Q7, Q8R, Q9, Q10R, Q11, Q12R, Q13R, Q14, Q15R, Q16R, Q17R, Q18, Q19R, Q20R, Q21, Q22, Q23, Q24, Q25R)
N = 200
Min = 2.36
Max = 4.32
Mean = 3.449
Std. Dev. = .3344
Frequency
0
10
20
30
40
50
2.00
2.50
3.00
3.50
4.00
4.50
COMPUTE Professionalism=MEAN(Q1, Q2R, Q3, Q4, Q5, Q6, Q7, Q8R, Q9, Q10R, Q11, Q12R, Q13R, Q14, Q15R, Q16R, Q17R, Q18, Q19R, Q20R, Q21, Q22, Q23, Q24, Q25R)


Continuous Field Information COMPUTE Performance=PromotionalAchievements - UseofForce - DisciplinaryActions
N = 200
Min = -32.00
Max = 4.00
Mean = -.600
Std. Dev. = 5.0951
Frequency
120
100
80
60
40
20
0
-40.00
-30.00
-20.00
-10.00
.00
10.00
COMPUTE Performance=PromotionalAchievements - UseofForce - DisciplinaryActions


Categorical Field Information CJdegree
Total N = 118
Count
80
60
40
20
0
1.00
2.00
CJdegree


RO
BPS
BSR
SC
A
Q1
Q4
Q11
Q15R
Q17R
Q2R
Q5
Q8R
Q12R
Q22
Q6
Q13R
Q16R
Q20R
Q23
Q7
Q9
Q14
Q18
Q24
Q3
Q10R
Q19R
Q21
Q25R
e1
e4
e11
e15
e17
e2
e5
e8
e12
e22
e6
e13
e16
e20
e23
e7
e9
e14
e18
e24
e3
e10
e19
e21
e25

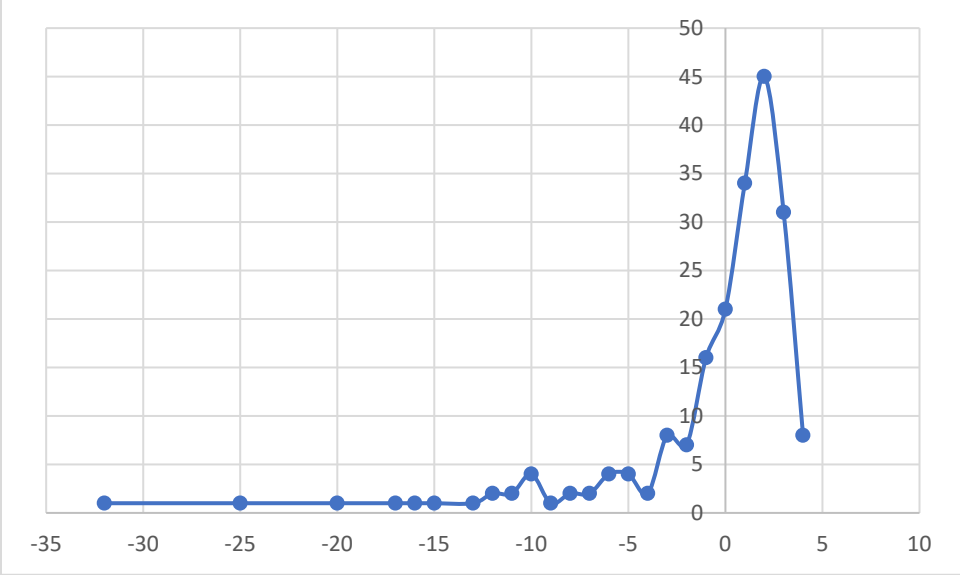
Appendix K

Positive Performance Distribution

$$Performance = Promotions - Use\ of\ Force - \ Disciplinary\ Actions$$

This yielded a measure of "positive performance" with values ranging from -32 to 4.

Positive Performance Distribution

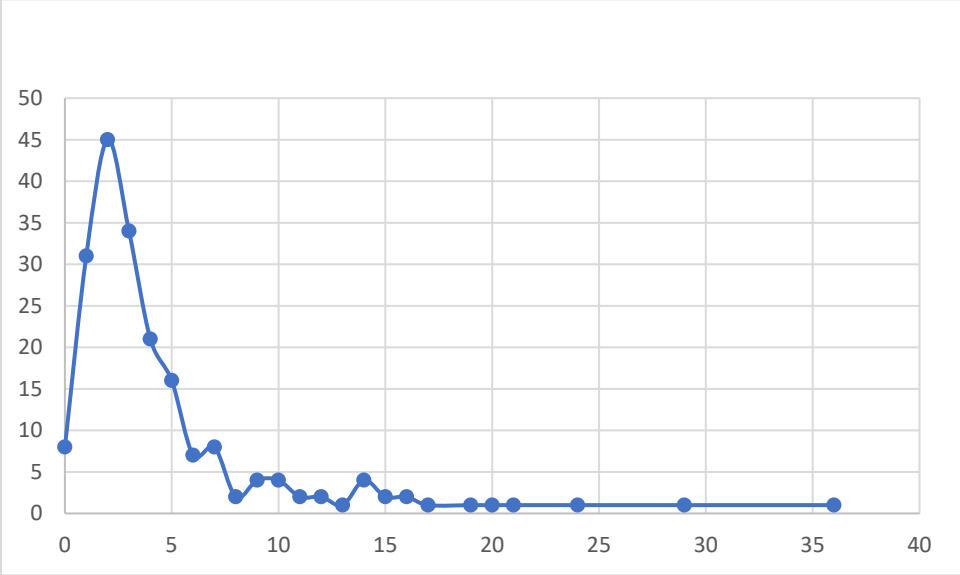


Appendix L

Negative Performance Distribution

$$Negative\ Performance = 4 - Peformance$$

Negative Performance Distribution



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