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Use of Machine Learning to Predict Ethical Drift in Law Enforcement

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Walden University
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Abstract

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MS, Walden University, 2016

BS, Excelsior College, 2000

Dissertation Submitted in Partial Fulfillment

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Abstract

U.S. law enforcement agencies are facing a legitimacy crisis. Incidents of police misconduct are the subject of widespread media coverage. Officer conduct continues to be a problem despite effectiveness of candidate screening. Underlying causes of ethical drift must be understood to reduce police misconduct. The purpose of this nonexperimental quantitative study was to examine the relationship between police ethical drift and agency size, officer age, officer gender, and officer education level. Ethical drift was the conceptual framework. Archival secondary data from local law enforcement agencies and the Florida Department of Law Enforcement Criminal Justice Standards and Training Commission were obtained via public records. Personnel records for 143 law enforcement officers were analyzed for information regarding officer age, gender, and education and number of officers employed. A multiple linear regression machine learning algorithm was developed and applied. A post hoc analysis involving multinomial logistic regression resulted in a moderately predictive model for ethical drift as a function of agency size. Law enforcement agency leadership may apply the results to identify officers at risk for ethical drift. Findings may also be used to promote positive social change through stronger police relations with communities and improved police legitimacy.

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Dedication

This dissertation is dedicated to my wife, Cheryl, and our three children, Rachel, Brendan, and Erin. Their support has never wavered. They are amazing and making them proud is the only acceptable outcome. To my nephew, Alex, I love you and miss you every day. To my mother and brothers, thank you for your support and availability. I have always learned so much from you, and I know that will thankfully continue.

To the many friends who have supported me in this endeavor, I am grateful. It was encouraging to know you were genuinely interested in my success. To my mentor, colleague, and friend, Doug Diamond, I cannot thank you enough for everything you have done for me throughout the years. Your support and friendship have been invaluable.

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Chapter 1: Introduction to the Study

Law enforcement officer ethical behavior continues to be a national concern (Cordner, 2017; Huff et al., 2018; Paoline & Gau, 2018). There is an established need for ethical police forces (Huq et al., 2017). Many officers who engage in police misconduct do not enter law enforcement as unethical individuals (Lawrence et al., 2017). There is a change in baseline ethical worldview that occurs because of exposure to police experience. *Ethical drift* (Sternberg, 2012) is a conceptualization of such change. An understanding of factors that contribute to ethical drift may be beneficial in reducing police misconduct.

Implications for positive social change include leadership opportunities to reduce misconduct and increase cooperation with communities. Police leaders may become better at establishing an ethical force by knowing what causes ethical drift. Citizens may experience an increase in trust toward law enforcement with fewer incidents of police misconduct (Namgung, 2018). Cooperation between law enforcement officers and citizens may increase because of elevated trust (Posick & Hatfield, 2017). Law enforcement efficacy may increase due to improved community support (Namgung, 2018).

Provided in the background section is an introduction to key literature topics. Current research on ethics, police officer age, gender, and education are briefly discussed. Agency size and organizational culture are also relevant topics previewed. The problem statement section is an outline of supporting evidence for ethical drift as a contemporary and relevant issue in forensic psychology. The purpose of the study section is a

discussion of stated goals for this research and variables under consideration. Variables are defined in the research questions and hypotheses section. Ethical drift (Sternberg, 2012) is introduced in the conceptual framework section. Research design and applied strategy are outlined in nature of the study section.

The definitions section is a description of key terms and how they are operationally used throughout this study. The assumptions section is an outline of aspects that were believed though not necessarily demonstrated to be true. Context is provided in the scope and delimitations section. Potential biases and methodological weaknesses are discussed in the limitations section. The strategy used in combating these biases and weaknesses is provided. Possible contributions to forensic psychology and implications for positive social change are discussed in the significance section.

Background

There is currently a police legitimacy crisis in the United States (Demir et al., 2020). Use of force incidents are receiving considerable media attention (Graziano & Gauthier, 2018; Miethe et al., 2018). Negative media coverage is a strong driver of public perception regarding police legitimacy (Nix & Pickett, 2017). Most citizens form their opinions about police legitimacy through media outlets (Graziano & Gauthier, 2018). Police misconduct incidents are being broadcast to many more citizens across multiple media outlets (Graziano & Gauthier, 2018). A negative impact on perceived legitimacy is amplified by expanded coverage of police misconduct (Graziano & Gauthier, 2018).

Law enforcement officers employed by larger agencies are more likely to be involved in misconduct (Silver et al., 2017). Police work is an inherently stressful

occupation (Saunders et al., 2019; Violanti et al., 2017; Warner, 2018). Officers of larger agencies experience higher occupational stress levels resulting from physical and psychological threats (Warner, 2018). Occupational stress can lead to burnout (Peterson et al., 2019). Job-related burnout often results in ethical decline (Bell, 2017; Peterson et al., 2019).

Agency size is a factor in organizational trust (Cordner, 2017). Law enforcement officers who work in low-trust environments are more likely to be untrustworthy themselves (Molines et al., 2017). Rank and file police officers distrust police leadership when leadership enacts policies and procedures officers perceive as unfair (Rosenbaum & McCarty, 2017). Distrust is stronger in larger agencies because of hierarchical distance between agency leadership and staff (Enciso et al., 2017). The bureaucratic nature of larger agencies leads to an increase in distrust (Enciso et al., 2017; Warner, 2018).

Age has been shown to be influential in officer behavior (Ouellet et al., 2019; Silver et al., 2017). Young officers are more likely to use force (Ouellet et al., 2019). Young officers often embrace police culture more vigorously at line and management levels (Silver et al., 2017). Young officers are more likely to develop problematic alcohol abuse because of occupational stress (Zavala, 2017). Older officers are less likely to seek assistance for psychological burnout associated with police work (Saunders et al., 2019).

Officer gender is associated with ethical behavior (Beagley et al., 2018; Chitra & Karunanidhi, 2018). Law enforcement is a male-dominated profession (Shjarback & Todak, 2019). Female officers are largely perceived as being less corrupt (Barnes et al., 2017). Female and male officers fail to report minor incidents of misconduct similarly

(Westmarland & Rowe, 2018). Male officers are more likely to engage in sexual misconduct and to use excessive force (Heil, 2018; Huff et al., 2018; Ouellet et al., 2019).

Education level is influential to officer behavior (Rosenfeld et al., 2018; Terrill et al., 2018). Law enforcement officers with college degrees are more likely to be proactive in their policing efforts (Rosenfeld et al., 2018). Educated officers tend to hold higher career aspirations (Terrill et al., 2018). Educated officers are more likely to be dissatisfied with their careers if not promoted (Rosenfeld et al., 2018). Job dissatisfaction has been shown to manifest in poor treatment of citizens (Terrill et al., 2018).

Researchers have found agency size and officer age, gender, and education are associated with varying law enforcement behavioral outcomes (Cordner, 2017; Enciso et al., 2017; Ouellet et al., 2019; Rosenfeld et al., 2018). However, ethical drift has not been researched in a law enforcement context. Ethical drift has been largely applied to corporate settings (Sternberg, 2012). Quantification of ethical drift rate (EDR) has not been established by researchers. EDR is hypothesized to vary for officers of differing agencies, age, gender, and education. An examination of EDR was a novel approach for researching law enforcement ethics.

Law enforcement agencies and communities may benefit from the study of EDR. Information about time passage for officer ethical drift may be used to enhance police legitimacy. Quantification of ethical drift may be helpful for restoring public faith in law enforcement. Law enforcement agency leadership may apply the findings to combat misconduct, identify at-risk officers, and provide timely intervention for at-risk officers.

Problem Statement

Police officer misconduct continues to be a problem for the law enforcement community despite apparent effectiveness of candidate screening (Garb et al., 2018; Ristroph, 2018; Tankebe, 2019). Public distrust stemming from the modern proliferation of misconduct incidents is amplified by media coverage (Nix & Pickett, 2017)**.** The combination of multiple officer misconduct incidents and expanding media coverage has resulted in widespread legitimacy problems for law enforcement (Graziano & Gauthier, 2018; Worden & McLean, 2017). Highly publicized incidents involving law enforcement misconduct have led to a prevailing perception that police are unethical (Nix & Pickett, 2017). Multiple misconduct incidents have contributed to the current law enforcement legitimacy crisis (Silver et al., 2017).

Current law enforcement legitimacy crisis is born of several key factors (Silver et al., 2017). Police brutality is widely considered to be a common occurrence (Ouellette et al., 2019). Citizens lose respect for police who are seen acting unprofessionally (Demir et al., 2020). Consistent negative media coverage has resulted in an unfavorable public opinion of law enforcement (Graziano & Gauthier, 2018; Nix & Pickett, 2017). The public does not trust police officers to ethically govern their own (Chanin & Courts, 2017).

A citizen’s impression of police professionalism is formed primarily by media coverage and personal interaction (Graziano & Gauthier, 2018). Most people do not have frequent personal interaction with police (Graziano & Gauthier, 2018). Media have substantial influence on public perceptions (Miethe et al., 2018; Nix & Pickett, 2017).

Citizens who interact with police will respect law enforcement more if officers engage in procedural justice (Demir et al., 2020; Silver et al., 2017; Worden & McLean, 2017). Professionalism in interactions with citizens is an instrumental component of police legitimacy (Demir et al., 2020).

The blue wall culture of law enforcement is eyed with distrust from outsiders (Silver et al., 2017; Westmarland & Rowe, 2018). Police agencies have not historically welcomed nonpolice governance (Westmarland & Rowe, 2018). Leaders of law enforcement agencies are often developed from within (Hoggett et al., 2018). These factors result in two-way distrust. Police distrust outsiders, and outsiders distrust police.

Recent research has focused on officer ethics and police culture (Aita et al., 2018; Cordner, 2017; Reynolds & Helfers, 2017). Researchers have examined individual officer factors and screening efforts (Lawrence et al., 2017). There has been considerable research on organizational culture and structure in law enforcement (Cordner, 2017; Enciso et al., 2017; Warner, 2018). Current literature is informative about which stressors are commonly present in agencies of different sizes (Warner, 2018) and how officers from different demographics respond to police work (Chu, 2017; Rosenfeld et al., 2018). Recent studies have been useful in establishing a foundation for research of EDR.

Recent research has not addressed EDR in law enforcement. There is a large body of research on organizational leadership, police culture, and police officer demographics (Chu, 2017; Cunha & Gonçalves, 2017; Reynolds & Helfers, 2017; Rosenbaum & McCarty, 2017). Recent research has addressed correlates to officer ethical behavior and potential causal underpinnings. For example, organizational influence of ethical police

behavior has been heavily studied (Cordner, 2017). However, EDR in law enforcement has not been addressed.

Purpose of the Study

The purpose of this study was to test the concept of ethical drift (see Sternberg, 2012) by examining the relationship between individual officer traits and agency size and ethical behavior of sworn police officers from multiple Florida law enforcement agencies. A nonexperimental quantitative correlational design was used to examine potential relationships between variables under consideration. Quantitative methods are useful to establish a degree of relatedness between variables (McKechnie & Fisher, 2020). Regression models are useful to investigate relationships between multiple variables (McKechnie & Fisher, 2020). Regression models are often used to formulate predictions (McKechnie & Fisher, 2020).

The intent of the current study was to quantify the strength of relationship between officer age, gender, education, and agency size and EDR. Predictive validity for these relationships was tested with a machine learning (ML) model. Independent variables (IVs) were officer age, gender, education, and agency size. The dependent variable (DV) was EDR. Each variable was expected to have differing correlation with EDR. Quantification of these correlations, both individually and collectively, was hypothesized to provide valuable information about law enforcement EDR. Regression analysis results were utilized to construct a predictive ML algorithm.

Research Questions and Hypotheses

Research Question 1: What is the relationship between officer age and EDR?

H_{o1}: There is no statistically significant relationship between officer age and EDR.

H_{a1}: There is a statistically significant relationship between officer age and EDR.

The IV for Research Question 1 was age. The association being tested was the relationship between officer age and ethical behavior. Age was measured in years since date of birth. Age at time of documented misconduct was used in the analysis.

Research Question 2: What is the relationship between officer gender and EDR?

H_{o2}: There is no statistically significant relationship between officer gender and EDR.

H_{a2}: There is a statistically significant relationship between officer gender and EDR.

The IV for Research Question 2 was gender. The association tested was the relationship between officer age and ethical behavior. Gender was measured dichotomously in terms of male or female as described by personnel records.

Research Question 3: What is the relationship between officer education level and EDR?

H_{o3}: There is no statistically significant relationship between officer education level and EDR.

H_{a3}: There is a statistically significant relationship between officer education level and EDR.

The IV for Research Question 3 was officer education level. The association being tested was the relationship between education level and ethical behavior. Education

was measured categorically in terms of formal education beyond high school. Education information was included in agency personnel files.

Research Question 4: What is the relationship between the agency size and EDR?

H_{o4}: There is no statistically significant relationship between the size of agency and EDR.

H_{a4}: There is a statistically significant relationship between the size of agency and EDR.

The IV for Research Question 4 was agency size. The association being tested was the relationship between agency size and ethical behavior. Agency size was measured categorically by number of current full-time sworn employed officers. Agency size information was obtained via public records.

Conceptual Framework for the Study

The conceptual framework was ethical drift (see Sternberg, 2012). Ethical drift is gradual change in individual ethical orientation as influenced by environment (Sternberg, 2012). Ethical drift is generally discussed in professional contexts (Sternberg, 2012). Ethical drift has been studied in corporate and health care contexts (Chang & Fraser, 2017; Rees et al., 2019; Sternberg, 2012). Ethical drift has not been studied in a law enforcement context.

Police officer candidate screening is generally effective (Garb et al., 2018). New police recruits are generally ethical (Garb et al., 2018). Exposure to the unique stressors of police work can have a jading effect (Peterson et al., 2019). Adverse organizational culture can have an amplifying effect on jading (Reynolds & Helfers, 2017). Jaded

officers who engage in misconduct often do so as a result of ethical drift (Sternberg, 2012).

The theoretical process of ethical drift begins with new law enforcement officers who adhere to an ethical outlook regarding law enforcement's function in society. The officer begins ethically drifting without a clear anchor point after exposure to negative, impactful experiences of occupational and organizational stressors. Officers who drift far from their starting point and close to a worldview that includes diminished concern for ethical policing are at risk to engage in misconduct. Ethical drift is not an outcome of a single choice to be unethical (Sternberg, 2012). It is the outcome for an officer who has lost sight of and access to their original ethical anchor point through negative experiences.

Ethical drift is useful for exploring the change an individual officer experiences after exposure to police work. Ethical drift is a conceptualization of this change (Sternberg, 2012). New police officers are inducted into an existing occupational culture. New officers have faith that experienced officers around them are knowledgeable (Marier & Moule, 2018; Paoline & Gau, 2018). New members must acclimate to the culture of their peers, which may have a significant influence on personal ethical views (Lambert et al., 2017).

Ethical drift is a function of exposure to new culture (Sternberg, 2012). EDR is a measurement of change over time. A quantitative approach was applied to test EDR predictability. Regression analyses are commonly used to establish predictability of

quantitative phenomena (McKechnie & Fisher, 2020). A detailed discussion of ethical drift is provided in Chapter 2.

Nature of the Study

A nonexperimental quantitative correlational design including archival secondary data was used in the study. Secondary data needed to research the variables under consideration were readily accessible through public records retained by law enforcement agencies. Personnel records from law enforcement agencies and the Florida Department of Law Enforcement (FDLE) division of Criminal Justice Standards & Training Commission (CJSTC) included officer age, education, and gender. Each agency was able to provide information regarding the number of employed officers. Quantitative methods are used to investigate relationships between variables of interest (McKechnie & Fisher, 2020). Multiple linear regression (MLR) is a common method used to analyze the relationship between IVs and DVs in the social sciences (Blanca et al., 2018).

Independent study variables were agency size and officer age, gender, and education. Agency size was the number of sworn, full-time officers employed. Age was the number of years old an officer was at the time of the documented misconduct. Gender was the sex designation for officers according to their personnel files. Education was the level of formal schooling.

Archival police personnel records were obtained from selected agencies via public records request. Records were available under the Freedom of Information Act (United States Department of Justice, 2016). Department personnel files were analyzed for information about officer education, age, gender, and size of parent agency. The CJSTC

maintains certification records for sworn officers in Florida (see Appendix A). CJSTC records were analyzed for relevant information.

Obtained data were partitioned into training and test sets (see Çelik, 2018). The basis for ML modeling is data partitioning (Çelik, 2018). The training set was analyzed with an MLR. The MLR model of best fit was then applied on the test set. The MLR results on test data were expected to resemble those of training data. Similar regression results on the test set indicated model generalizability.

Definitions

Blue wall: The closed-ranks nature of law enforcement culture (Silver et al., 2017). Blue wall is conceptualized to describe the difficulty associated with affecting cultural change in law enforcement and its influence on officers.

Code of silence: The unwritten agreement among group or clique members to keep information about the group private (Reynolds & Helfers, 2017).

Ethical absolutism: The philosophical belief that moral behavior is a constant among humans (Wreen, 2018). All people have a common underlying moral and ethical obligation without regard to culture or society.

Ethical drift: The social phenomenon in which an individual gradually moves away from their personal ethical views toward that of the dominant group (Sternberg, 2012).

Ethical pluralism: The philosophical belief that ethics are diverse among cultures and societies, though only to a certain degree (Arcos Ramirez, 2019).

Ethical relativism: The philosophical belief that ethics are defined by culture and social forces (Wreen, 2018).

Ferguson effect: The phenomenon in which police officers are less effective after backlash experienced from the Ferguson, Missouri incident (Beagley et al., 2018). The Ferguson effect is an outcome of increased public hostility and media scrutiny toward police (Marier & Moule, 2018).

Law enforcement: City municipal police officers and sheriff's deputies. These frontline officers have unique experiences and are hypothesized to experience EDR in a unique way because of their law enforcement roles (Silver et al., 2017).

Machine learning (ML): The use of known data to predict outcomes in unknown data (Çelik, 2018). ML exists in many formats, with supervised regression being the relevant method here. The terms "model" and "algorithm" are commonly used in ML. These two terms were used interchangeably in the current study.

Police legitimacy: A community's perception that their representative law enforcement agency appropriately implements rules and governs public conduct (Demir et al., 2020).

Procedural justice: The fair and equitable application of authority (Silver et al., 2017). Procedural justice is a concept applicable to both a law enforcement organization and policing of citizens.

Assumptions

The first assumption was police officers enter law enforcement as ethical individuals (see Rees et al., 2019). Law enforcement prescreening techniques and

processes have been developed to support this assumption (Aita et al., 2018; Lawrence et al., 2017). A second assumption was all police officers experience external occupational stressors. The nature of police work is inherently stressful for all officers (Silver et al., 2017; Warner, 2018; Violanti et al., 2017). Individual experiences will vary. The nature of law enforcement duties is constant (Archibald & Akers, 2018). Similarities among law enforcement experiences are strong enough to make this assumption (Archibald & Akers, 2018).

The assumption that all officers enter law enforcement with similar ethical starting points was necessary to draw conclusions about EDR. Extant research supported this assumption (Garb et al., 2018). This assumption was made because variance in individual officer ethics upon entering law enforcement was not investigated. Coefficient statistics in regression models were interpreted as variance (Bar-Gera, 2017). True baseline ethical orientation at the outset of law enforcement careers was a potential confound.

A necessary assumption was all officers experience relatively similar levels of external occupational stress. Variation in external occupational stress was not controlled for. Variation of experienced occupational stress was also a likely confounding variable. Law enforcement culture and experiences are unique in general (Cordner, 2017; Meier et al., 2018; Paoline & Gau, 2018). Overall experiences are similar enough to support the assumption.

Scope and Delimitations

Officer ethical behavior was the main focus of this research. Police misconduct is a key cause of the current police legitimacy problem (Pickett & Nix, 2018). There are additional aspects to police legitimacy. Community perceptions and media coverage are contributory factors (Graziano & Gauthier, 2018; Silver et al., 2017). Other possible causal mechanisms for public perception of police were beyond the study scope.

The purpose of the study was to examine of relationship between organizational size, officer age, officer gender, and officer education level and EDR. Recent research indicated these variables are influential to officer ethical behavior (Barnes et al., 2017; Rosenfeld et al., 2018; Silver et al., 2017). Variables were chosen for universality and measurability. Inclusion of commonplace variables ensures a higher likelihood of study generalization (Enciso et al., 2017; Fallik et al., 2018). Universality and measurability are beneficial to ensure internal validity (Patino & Ferreira, 2018).

The population under investigation was sworn local law enforcement officers. Federal, state, and military police organizations were not included. Federal, state, and military police typically serve in specialized roles. Officers in these agencies have different occupational experiences because they have a different function (Silver et al., 2017). Local police and sheriff's deputies primarily respond to public calls for service (Silver et al., 2017).

Officer race was not a variable under consideration. Exclusion of race was due to magnitude. Current tension between law enforcement and minority communities is garnering significant national attention (Bell, 2017). Race, as it relates to policing, is

significant enough to be studied in isolation (Drakulich et al., 2020). Inclusion of race was beyond the scope for this analysis.

Social learning theory has been applied in similar contexts (Floridia & Hollinger, 2017). Police officers learn and are influenced by the social context of their new environment (Floridia & Hollinger, 2017). Social learning theory is the theoretical foundation for understanding group influence over individual beliefs and behavior (Z. Wang et al., 2018). Social learning theory is broad in scope and applicable to multiple constructs including law enforcement. Social learning theory was not applied in the current study because it was insufficient to provide a framework for the quantification of ethical drift. Ethical drift is a quantitative phenomenon. Ethical drift is a change of ethical stance over time.

Results are generalizable due to the universality of variables under consideration. All law enforcement agencies are of a given size. Some law enforcement agencies may not employ female officers. Agencies without any female officers were assumed to be scarce. Law enforcement officers around the United States were assumed to have varying levels of education.

Limitations

A limitation was this research did not provide delineation between degrees of intensity for ethical violations. Misconduct ranged from minor infractions such as lying on an investigation to felonious criminal acts. Analysis was conducted on ethical violations dichotomously. Ethical misconduct either occurred or not. The seriousness of the ethical violation was not investigated.

A second key limitation was the use of archival secondary data. Obtained data were historical. Ongoing current internal affairs investigations were not included. A third limitation was ambiguity regarding which ethical behavior was defined across various law enforcement agencies. Any incident not clearly resulting from ethical behavior was omitted from the analysis. A conservative approach to classification is beneficial in ensuring validity (Schroeder et al., 2018).

A fourth limitation was the occurrence of ethical misconduct not related to drift. Some incidents were crimes of passion or highly situational. Situational offenses might have been the only incident involving an officer. Occurrence of an unethical offense may not have been related to ethical drift. Information about factors that preceded an incident of ethical misconduct was not obtained.

A potential bias was self-reporting bias (see Moore & Rutherfurd, 2020). Record custodians may not have reported an individual officer's ethical violations accurately. Record inaccuracy was a potential detriment to results. Analysis was conducted utilizing records from several law enforcement agencies and the CJSTC officer database. Power analysis was conducted to determine an appropriate sample size necessary for providing reliable results. A sufficient sample size was necessary to ensure data errors were not overly influential in the analysis (see Schroeder et al., 2018).

The potential limitation regarding delineation of offense severity is an area for future research. There are underlying characteristics or conditions that contribute to officers committing serious offenses beyond simple misconduct. Limitations associated with archival records were addressed with a consistent and conservative approach to

defining offenses as unethical. A defined approach was applied to ensure the integrity of data analysis and subsequent findings. The possibility of misconduct occurring due to something other than ethical drift was addressed with an appropriate sample size and effect size analysis.

Significance

Police misconduct has had a significant impact on citizen faith in law enforcement (Huff et al., 2018; Tankebe, 2019). Highly publicized incidents of police misconduct have been instrumental in the current law enforcement legitimacy crisis (Huq et al., 2017). Findings from the current study may advance knowledge of officer ethical behavior. Ethical drift was established as a quantifiable phenomenon. Identification and quantification of factors that impact police ethical behavior may provide the foundation for future research on officer ethical drift.

Results may be applied by police leadership to develop more ethical police forces. A better understanding of individual and organizational factors that are associated with poor ethical behavior may be informative for agency leaders to take appropriate preventative measures. Knowledge of ethical drift causes may be used by agency leaders to establish systemic safeguards against officer ethical drift. Police leaders may use findings from this analysis to ensure high-trust work environments. Findings may also be used by agency leaders to identify officers at risk of ethical drift and provide timely intervention.

Positive social change may result from restoration of police legitimacy. Officers without a history of misconduct or ethical violations are more likely to sustain their

careers in law enforcement (Schuck & Rabe-Hemp, 2018). Officers who maintain longer careers are likely to develop bonds with citizens of a community (Namgung, 2018). Community cooperation is beneficial for implementation of community-oriented policing initiatives (Namgung, 2018). Police agencies are more effective in combatting crime when they have community support (Kochel, 2017).

Summary

Law enforcement agencies in the United States are currently experiencing a significant legitimacy crisis (Fallik et al., 2018; Huq et al., 2017). Police leaders are facing challenges from an increasingly hostile public and media (Kennedy, 2017). Incidents of misconduct exacerbate the problem (Bell, 2017). Police misconduct is the root cause of negative media coverage and public distrust (Graziano & Gauthier, 2018). Police misconduct is a controllable aspect of illegitimacy because it can be reduced or prevented.

Application of procedural justice when dealing with citizens is a first step officers can take to restoring legitimacy (Demir et al., 2020). Procedural justice is the responsibility of both individual officers and law enforcement organizations. Officers can treat citizens with respect, be neutral in their decision-making, and avoid using profanity. Professionalism results in more positive citizen impressions (Graziano & Gauthier, 2018; Patton et al., 2017). Officers benefit from having awareness of how they are viewed in different communities (Kochel, 2017; Metcalfe & Pickett, 2018). Citizens have different experiences with police, and their attitudes toward law enforcement also differ (Kochel, 2017).

It is incumbent upon agency leaders to understand internal organizational threats (Hoggett et al., 2018; Rosenbaum & McCarty, 2017). Police misconduct is largely a product of organizational culture (Cordner, 2017; Silver et al., 2017). Leaders of larger agencies face unique intradepartmental threats (Silver et al., 2017). The paramilitary, hierarchical structure of large agencies is conducive to subculture formation (Enciso et al., 2017; Paoline & Gau, 2018). Subculture formation is core to blue wall culture (Silver et al., 2017).

Officer age, gender, and education are influential to ethics (Chitra & Karunanidhi, 2018; Ouellet et al., 2019; Rosenfeld et al., 2018; Terrill et al., 2018). Officers of different demographics experience and handle stress differently (Beagley et al., 2018; Zavala, 2017). Officers of different demographics also typically have different career aspirations and experience burnout for varying reasons (Peterson et al., 2019; Terrill et al., 2018). Agency leaders with an understanding of such idiosyncrasies can ensure a work environment that is conducive to organizational trust. Organizational trust is a key component for reduction in officer misconduct (Huff et al., 2018).

Recent research indicated that agency size, officer age, gender, and education are relevant to officer behavior. Chapter 2 includes discussions of each of these variables. Variable application to ethical drift is similarly discussed. An overview of ethics and ethical drift as it applies to law enforcement is provided. The applicability of ML as a predictive tool to assist law enforcement leaders in fielding an ethical force is also discussed.

Chapter 2: Literature Review

Individual traits and organizational factors have a significant impact on police officer ethical drift (Cordner, 2017; Enciso et al., 2017; Fallik et al., 2018; Singh, 2017). Influential factors may occur individually or in conjunction with each other. The purpose of the current study was to examine the correlation between individual officer traits, agency size, and ethical drift. Agency size was hypothesized to be associated with varied EDR. Officers of differing age, gender, and education were expected to experience ethical drift differently.

There are many influential aspects to police officer ethical behavior (Beagley et al., 2018; Chitra & Karunanidhi, 2018; Kutnjak Ivković et al., 2018). Education level, age, and gender are three variables that were explored. Education was hypothesized to be a contributing factor in improved officer ethics (see Bartkowiak-Théron, 2019). Male and female officers experience law enforcement differently, which may lead to differing ethical outcomes (Beagley et al., 2018; Chitra & Karunanidhi, 2018; Chu, 2017). Organizational factors influence ethical behavior of officers (Cordner, 2017; Schaible, 2018).

Agency size is correlated with various policing outcomes (Huff et al., 2018; McCarty & Dewald, 2017). Size of agency has been found to correlate with officer stress levels (Warner, 2018). Stress resulting from holding an authoritative position has been established in prior research to be a negative influence on ethics (Scholl et al., 2018). Elevated levels of occupational stress may lead to burnout (Violanti et al., 2018). Stress can lead to qualified officers leaving law enforcement (Peterson et al., 2019).

The impact of each these variables on ethical drift had not been analyzed. Quantitative statistical analysis of ethical drift was a novel approach for investigating police officer ethical outcomes. Such research was needed to identify and counteract ethical drift in the law enforcement profession. A modern approach in understanding susceptibility to ethical drift experienced by law enforcement officers was timely, relevant, and necessary. Analysis of ethical drift in law enforcement was an endeavor for improving societal cohesiveness between police and the public.

Regression models have been used to make predictions about the world (Baayen et al., 2017; Blanca et al., 2018; Haardörfer, 2019). Linear models are used to establish quantitative strength and direction of relationship among variables under consideration (McKechnie & Fisher, 2020). Linear models are often used in ML algorithms (Çelik, 2018). ML is a modern application of statistical techniques (Çelik, 2018; Karthiga et al., 2019). ML is made possible with use of statistical and computing software packages designed for data science (Betz et al., 2020).

Chapter 2 consists of an outlined literature search strategy, ethical drift analysis, and a comprehensive review of variables under consideration. An overview of prevalent ethical theories is provided. The literature search strategy section includes a list of library databases and search engines used to access existing literature on relevant topics. Key search terms and the scope in which these terms were applied are described as well. A thorough analysis of ethical drift within law enforcement cultural context is provided.

A detailed overview of the unique experiences law enforcement officers face (Gau & Paoline, 2017; Miethe et al., 2019) is discussed. The impact of gender (Beagley

et al., 2018; Chitra & Karunanidhi, 2018; Todak, 2017), age (Ouellet et al., 2019), and education (Cox & Kirby, 2018; Rosenfeld et al., 2018) on ethical outcomes is examined in detail. The impact of agency size (Cordner, 2017; Enciso et al. 2017; Warner, 2018) on police misconduct is also examined. The appropriateness for MLR (McKechnie & Fisher, 2020) as a statistical methodology is briefly discussed. ML is introduced as well.

Literature Search Strategy

Research and applicable support references were collected through multiple online resources. The Walden University library was used for access to many of the databases used, including Thoreau Database, JSTOR, PsycINFO, EBSCO Criminal Justice & Security, Sage Criminal Justice, and SOCindex. The Journal of Police and Criminal Psychology database and web-based archives were also used. The American Statistical Association peer-reviewed journals were similarly used. Additional searches included publicly available search engines such as Google Scholar and the Bureau of Justice Statistics. Boolean operators were used when necessary to filter findings. Search efforts resulted in the identification of a gap in current literature regarding law enforcement ethical drift.

Search terms included *police ethics, police culture, police officer college education, personal ethics* and *stress, police culture* and *coercion, community trust* and *police, multiple regression, police leadership* and *education, police* and *the media, "blue wall", community policing, police trust* and *crime, leaving law enforcement, effects of negative media on police, community benefit of good police, review of community oriented policing, police community relationships* and *crime, statistical models for*

effective policing, career motivation, Ferguson effect, police cynicism, criminal justice, police misconduct, black lives matter, police solidarity, code of silence, general strain and *police, police legitimacy crisis, female police, media and police, police reporting, police* and *occupational psychology, community fear* and *police, rookie police, police* and *ethics, ethics, ethical pluralism, ethical relativism, ethical absolutism, ethical fading, ethical drift* and *ethics in organizations, agency size, multiple linear regression, multinomial regression, regression models* and *psychology, data analysis* and *psychology, stress* and *ethics, ethics in organizations, police excessive force, machine learning, corruption, police* and *age, dummy variable, Shapiro-Wilk, Levene's test, police burnout,* and *police militarization*.

The scope of search terms was restricted to years 2017 through 2020 with an exception for literature on conceptual frameworks. Statistical methodology sources were also not restricted by date range. Peer-reviewed scholarly journals were the primary literature source. A portion of statistical data was collected from the Bureau of Justice Statistics (Office of Justice Programs, 2019).

Little recent research on ethical drift was available (see Rees et al., 2019; Sternberg, 2012). I conducted extensive research on ethics in law enforcement and applied the corporate context of ethical drift to policing. There was considerable recent research on ethics in law enforcement (Cordner, 2017; Enciso et al., 2017, Fallik et al., 2018; Singh, 2017). This literature was helpful to explore ethics in a law enforcement context. Prior study results supported the uniqueness of ethical challenges faced by modern police officers.

Conceptual Framework

The conceptual framework was ethical drift (see Sternberg, 2012). Ethical drift has often been researched in corporate contexts (Chang & Fraser, 2017; Rees et al., 2019). Ethical drift is not descriptive of a single incident of misconduct (Sternberg, 2012). Ethical drift is the psychological and subsequent behavioral outcome of a fundamental change in a person's morality (Sternberg, 2012). Change in ethical outlook is gradual and typically for the worse.

Ethical drift is analogous to being lost at sea in a lifeboat (Sternberg, 2012). There are no immediate daily changes to what is seen as occupants drift across the sea. Drifters ultimately end up in view of land without understanding how they got there, how time passed, or the distance traveled upon arrival. Ethical drift occurs slowly and is not obvious to an individual just as lifeboat occupants drift until arrival at an unplanned location. Realization that ethics have drifted can occur after a substantial amount of time (Sternberg, 2012).

Ethical drift is insidious (Sternberg, 2012). Justifications for minor ethical transgressions become easier over time. Ethical drift is heavily influenced by four main environmental or situational factors (Sternberg, 2012). First is that it can occur in situations in which competition for resources is fierce. In a law enforcement context, the resource for which officers compete could theoretically be limited to opportunities to career advancement. The second condition is the perception of a zero-sum game. Police officers may see catching criminals by any means necessary as the only way to prevent future crime (Stinson et al., 2018). The outcome is either win or lose.

A third condition is that individuals perceive others as being ethically compromised. Police officers can easily see that criminals are not bound by any ethical restraints. A criminal's lack of ethical restraint makes it easier for the officer to eschew ethics that govern their own actions. A fourth condition is that no obvious ethical solution exists to a problem. Law enforcement officers may act unethically for what they perceive as being in the interest of greater good (Stinson et al., 2018).

Ethical action is not easy to undertake (Sternberg, 2012.). Ethical action requires the actor to realize a given situation is an ethical conundrum (Sternberg, 2012). An event in question must have an ethical component. A person must then subsequently decide to act. Consequences of the action are consciously weighed against risk. Ethical individuals tend to take the risk of ethical action (Sternberg, 2012).

Ethics Overview

Ethics is a broad topic and has many theories that have been studied (Wreen, 2018). Ethics are often expressed as cultural norms, individual beliefs, or written rules. Ethics constitute a guideline for expected behavior (Wreen, 2018).

Ethics are of vital importance in the criminal justice system (Westmarland & Rowe, 2017). Criminal justice authorities have significant power over the citizenry they serve (Bell, 2017; Ristroph, 2018). Ethical application of this power is imperative if trust, cooperation, and peace are to thrive (Peterson et al., 2019). Ethics are conceptually straightforward. Ethics generally refer to doing what is morally acceptable.

Members of any society have a duty to treat each other well. Universal application of this duty is agreed upon by most scholars (Arcos Ramirez, 2019; Liu, 2018; Wreen,

2018). A practical difficulty with ethics is application. There is substantial disagreement about what is ethical from a teleological standpoint (Arcos Ramirez, 2019). Ethics remain difficult to define despite being conceptually simple.

Three philosophical approaches to understanding ethics are ethical absolutism, ethical relativism, and ethical pluralism (Arcos Ramirez, 2019; Lee et al., 2019; Liu, 2018; Wreen, 2018). Ethical relativism is the opposite of ethical absolutism (Lee et al., 2019). Ethical pluralism is the intersection between absolutism and relativism (Wreen, 2018). All three approaches are relevant to policing. Each approach can be used to better explain police officer ethical behavior.

Ethical Absolutism

Ethical absolutism is a hardline stance on right and wrong (Lee et al., 2019). Absolutism is often an appeal to authority. Authority is often a religious figure or god (Lee et al., 2019). Authority may also be a ruler or leader, such as in cults (Wreen, 2018). The absolutist view is that all humans are under the same moral obligations regardless of context. Absolutism is a reasoning approach to wield judgement and moral authority over others (Lee et al., 2019).

A primary benefit of absolutism is that it helps to establish a baseline for moral behavior (Wreen, 2018). All behavior can be held to the same standard, which allows for even application of punishment. Absolutism is simplified ethics from an operational standpoint. A context for the alleged unethical behavior is not required. Drawbacks of absolutism are significant.

Opponents of absolutism point out that if the absolutist is wrong about morality then innocent people are undeservedly punished (Lee et al., 2019). Rigidity in ethical reasoning is unethical because it represents a lack of compassion. Absolutism is a reductionist approach to complexity of human behavior. Absolutism avoids contexts and complexities that drive human decision-making. Context is important to underlying motivations for actions taken.

Ethical Relativism

Ethical relativism is a philosophical approach that allows for context to be considered (Lee et al., 2019; Wreen, 2018). Actors within a society are acting morally if their actions are consistent with ethical norms (Wreen, 2018). Subjective judgment of others' motives is highly fallible (Lee et al., 2019). People are often wrong in their judgment about others' motives (Huang et al., 2017). Ethical relativism is a moral philosophy in which a person is given the benefit of the doubt.

A key benefit to ethical relativism is tolerance (Wreen, 2018). Those who apply relativism in ethics are apt to consider context more thoroughly (Wreen, 2018). Understanding of an action within context allows for reduction in arbitrary judgment regarding actor motives. Relativism is a kind and agreeable ethical view. Ethical relativism is also generally compatible with many other ethical philosophical approaches, so long as these approaches are not absolute (Wreen, 2018).

A primary criticism of ethical relativism concerns the underlying assumption. Ethical relativism is an attempt to explain moral conduct is largely dependent upon social situation (Wreen, 2018). What is moral in one society may not be so for another.

Intention for an act may be moral even in the act itself is not. Relativism is an ethical consideration for motive only. Actions can be unethical without consideration for intent (Wreen, 2018).

Ethical Pluralism

Ethical pluralism is the view that ethics are irreducibly diverse (Liu, 2018). Pluralistic approach is a philosophy that ethics are culturally rooted (Arcos Ramirez, 2019; Liu, 2018). Ethical views are specific to cultures and vary across societies. Some universal ethical principles are organically developed, which is indicative of moral commonalities across cultures (Liu, 2018). Many ethical dissimilarities exist across cultures as well.

Benefits to ethical pluralism are acknowledgment of ethical variability and pragmatism (Arcos Ramirez, 2019; Liu, 2018). Human behavior and thought are quite clearly diverse. Culture, context, individual psychology, and personal experience are all contributory aspects of one's ethical views (Arcos Ramirez, 2019). Pluralistic approach to understanding ethics is valid because psychological, personal, and experiential underpinnings are assumed (Arcos Ramirez, 2019). Ethical pluralism is a permissive approach for cultural tolerance. A criticism of pluralism is lack of tangible structure (Liu, 2018).

Pluralism is a nebulous approach to ethics. Ethical pluralism lacks enough substance for honest critique (Arcos Ramirez, 2019; Liu, 2018). Many ethical philosophers have held belief that ethical behavior consists of varying universal components. Examples of universal components include compassion, respect, and

familial loyalty (Arcos Ramirez, 2019). Culture or context is not an excuse for unethical actions (Arcos Ramirez, 2019; Liu, 2018).

Ethical Drift as a Beneficial Approach to Law Enforcement

Key benefit to applying ethical drift is utilization of time as a tangible measurement for investigation into officer ethical behavior. Time is a quantitative phenomenon. Drift is time between an initial and resultant ethical outlook. Ethical drift is helpful for conceptualization of ethical behavior change resulting from exposure to experience in law enforcement. EDR is the quantitative outcome of ethical drift.

Ethical drift is a rate of change in behavioral terms (Sternberg, 2012). Drift is a term with connotation of slow pace. Pace is a key factor in seriousness of ethical drift (Sternberg, 2012). Gradual nature of drift means it often occurs below any salient threshold. Ethical drift is insidious and goes undetected until its impact becomes salient (Sternberg, 2012).

Law enforcement agency leadership is responsible for setting the cultural tones of their organizations (Hoggett et al., 2018; Reynolds & Helfers, 2017). Effective organizational ethics include transparency, training, setting examples, equitable punishment for transgressions, and organizational awareness (Bauhr & Grimes, 2017; Reynolds & Helfers, 2017). Organizational leaders who implement these approaches may have better success at combatting ethical drift. Organizational awareness can be accomplished with recognizing internal threats regarding ethical drift. Early identification of at-risk employees will allow for intervention. Intervention is potentially in the form of training or termination.

Predicting Ethical Drift

Law enforcement agency leaders can apply predictive models as a tool for detection of ethical drift prevalence within their organization. Modern popularity of predictive analytics stems from big-data availability and technological advancements (Sanders & Sheptycki, 2017). Data-driven decision making in the form of predictive analytics is gaining significant popularity for law enforcement (Shapiro, 2019). Application of predictive analytics in law enforcement has largely focused on combatting crime (Shapiro, 2019). A similar algorithmic approach can be applied to predicting ethical drift (Helles & Flyverbom, 2019).

Predictive analytics is a term that encompasses several concepts including ML. ML consists of supervised, unsupervised, and reinforcement varieties (Çelik, 2018; Deeks et al., 2019; Karthiga et al., 2019). Supervised techniques are those in which the user selects data for analysis (Karthiga et al., 2019). Unsupervised techniques are often used in cluster analyses where the user is attempting to learn something new from data (Abubakar et al., 2019; Çelik, 2018). Reinforcement learning involves algorithms that obtain data recursively as a method of information collection (Karthiga et al., 2019). Regression and classification are often used in supervised ML models (Çelik, 2018).

ML is a modern application of mathematical modeling (Çelik, 2018). ML has become feasible with the advent of increased computational power (Çelik, 2018). Mathematical models were initially quite tedious to conduct by hand (Çelik, 2018). Contemporary computational software programs such as Python and R make these

computations easy to apply with just a few lines of code (Myint et al., 2019). Relevant aspect of ML to the analysis is supervised regression.

ML models are devised by partitioning obtained data into training and test sets (Karthiga et al., 2019). Statistical method is then applied to the training set. Results of the analysis are then assessed (Abubakar et al., 2019). The same statistical method is then test set. Models that are similarly effective on test set are functionally predictive (Karthiga et al., 2019).

Predictive analytics are recommended to be used in conjunction with human intuition (Helles & Flyverbom, 2019). Contemporary predictive analytics is a method for insight from *big data* (Deeks et al., 2019; Sanders & Sheptycki, 2017). Big data is a reference to exponentially increasing amount of data available for analysis (Sanders & Sheptycki, 2017). ML models are subject to several biases and if not deployed correctly can have severe repercussions (Helles & Flyverbom, 2019). Predictive analytics in ethical drift analyses is of little risk. An officer predicted as at-risk for ethical drift by a model is not likely to be harmed. Agency leaders can make appropriate case-by-case decisions based upon their experience and intuition.

Literature Review Related to Key Concepts

Police officer ethical drift is the core concept. Officer age, gender, and education were correlates of interest at individual level. Size of parent law enforcement agency was the variable under consideration at an environmental level. Differences in agency size, officer age, gender, and education level were expected to correlate at differing rates with

EDR. Relevant theoretical frameworks and constructs were extensively researched. Extensive research resulted in ethical drift (Sternberg, 2012) as being most relevant.

MLR is the chosen statistical methodology. MLR is a statistical method employed when investigating relationship among multiple IVs and one continuous DV (McKechnie & Fisher, 2020). MLR is used investigate these relationships for several purposes (McKechnie & Fisher, 2020). MLR can be used as a descriptive measure. MLR can be used as a test for association. MLR is also be used to make predictions (McKechnie & Fisher, 2020).

Ethics and Law Enforcement

Law enforcement ethics is an important social issue (Corbo Crehan, 2019). Police application of discretionary authority often put law enforcement at odds with communities (Foust, 2018). Tension between communities and police often leads to an increase in officer solidarity (Thomas & Tufts, 2019). Loyalty within police ranks rises in importance during conflict (Foust, 2018). An officer's loyalty to the group can become more personally important than ethical behavior (Foust, 2018).

Ethical drift is unique from ethical fading (Chang & Fraser, 2017; Rees et al., 2019). Ethical fading occurs as a direct result of exterior pressures. Exterior pressures are tangible. Professional competition and encouragement from leadership to excel can undermine ethics (Chang & Fraser, 2017). Ethical drift is less tangible and possibly more difficult to counter (Sternberg, 2012).

Ethical fading is widely researched in health care and corporate contexts (Chang & Fraser, 2017; Gunia, 2019; Rees et al., 2019). Health care and corporate fields are

similar to law enforcement. Health care and corporate environments are similarly competitive and hierarchical. Law enforcement is considered a unique profession in many ways (Cordner, 2017; Saunders, et al., 2019, 2019; Warner, 2018). Stress and sociological conditions faced by police officers is unmatched in most professions (Violanti et al., 2018; Warner, 2018). Ethical fading has not been previously applied to research on law enforcement.

A similar phenomenon to ethical drift is moral distress. Moral distress has almost exclusively been researched in healthcare contexts with most attention on the nursing profession (Bong, 2019). Moral distress is different from ethical drift. Moral distress is akin to rapid burnout because of intense chronic experiences with ethical dissonance. Nurses and medical professionals work in hierarchies. Medical professionals must take orders that are often in conflict with an individual's sense of ethics (Bong, 2019).

Moral distress is potentially applicable to law enforcement. Primary difference is the tangible and sudden onset of moral distress (Bong, 2019). Ethical drift is insidious and slow (Sternberg, 2012). Moral distress can be similar to an acute ethical ailment. Ethical drift is analogous with a chronic condition.

Police Legitimacy Crisis

Current police legitimacy crisis is evidence of a need for an ethical police force. Constant mainstream media barrage, social media contagion, and daily headlines on police misconduct are steady reinforcement for public distrust of law enforcement (Graziano & Gauthier, 2018; Nix & Pickett, 2017). Legitimacy crisis faced by law enforcement is a product of many factors (Demir et al., 2020; Nix & Pickett, 2017).

Current legitimacy crisis is largely resultant from incidents involving use of force (Demir et al., 2020, Graziano & Gauthier, 2018; Lee, 2017; Miethe, et al., 2019). Public skepticism of law enforcement is increasing as a result (Demir et al., 2020; Lee, 2017; Metcalfe & Pickett, 2018).

Prior research has resulted in varied success for providing a definition for law enforcement legitimacy (Huq et al., 2017; Tankebe, 2019; Worden & McLean, 2017). Components of legitimacy commonly found in extant research include procedural justice and effectiveness (Huq et al., 2017; Worden & McLean, 2017; Tankebe, 2017). Procedural justice is a key component to police legitimacy (Bell, 2017; Demir et al., 2018; Silver et al., 2017). Procedural justice gives the impression law enforcement officers are impartial in their enforcement. Impartiality garners citizen respect and legitimizes police discretionary application of authority.

Police legitimacy occurs at both individual and organizational levels (Worden & McLean, 2017). Officers can interact with the public in a procedurally just manner. Law enforcement organizations can implement procedurally just policies. Procedurally just policies are effective in combination with transparency (Demir et al., 2020). Lack of transparency is problematic to public trust (Albanese & Artello, 2019; Demir et al., 2020).

Most citizens do not have much personal interaction with law enforcement (Graziano & Gauthier, 2018). Citizens often rely on media outlets to form their perceptions of law enforcement (Graziano & Gauthier, 2018; Huq et al., 2017). Inclusion of citizen oversight into police governance is proposed to address this distrust (Worden &

McLean, 2017). Inclusion of civilians in law enforcement governance may foster more trust between communities and police. Direct citizen insight and involvement would reduce dependance on media outlets for law enforcement related information (Worden & McLean, 2017).

Hot spot policing strategies may result in citizen distrust for law enforcement (Metcalfe & Pickett). Hot-spot policing is perceived as illegitimate in poorer neighborhoods (Metcalfe & Pickett). Aggressive policing in high crime is counterproductive to legitimacy (Metcalfe & Pickett, 2018; Kochel, 2017). Abandonment of hot spot policing strategies may lead to higher crime rates in affected neighborhoods. Mobile police community offices, a tool for hot spot policing, were found to be effective in crime prevention (Bennet et al., 2017). Reduction of proactive policing in high crime areas would be counterproductive to crime reduction (Simes, 2017).

Neighborhood demographics should be considered in assessment of police legitimacy (Metcalfe & Pickett, 2018; Kochel, 2017; Lee, 2017). Neighborhoods vary in their needs for police services. Citizens in high-crime neighborhoods will respect police effectiveness when procedural justice levels are high (Kochel, 2017). Effectiveness is considerably more important to police legitimacy in disadvantaged neighborhoods (Tankebe, 2017). Procedural justice is a moderator in the relationship between effectiveness and legitimacy (Tankebe, 2017).

Police officers can improve legitimacy with citizens at the individual level by using straightforward professionalism (Demir et al., 2020; Worden & McLean, 2017). Police officers are more trusted if an officer is equipped with a body-worn camera in

traffic stops (Demir et al., 2020). Prior research has shown citizens view police officers as more professional if their interaction with police has four components (Demir et al., 2020). Citizens tend to appreciate having meaningful participation during their contact with officers. Officers gain trust by maintaining a neutral demeanor during contact with citizens. Citizens who were treated respectfully during their encounters with police held more positive views of the officer. Officers who demonstrated neutrality in decision making were more respected (Demir et al., 2020).

Police legitimacy crises are often originated from media coverage (Celestin & Kruschke, 2018; Demir et al., 2020; Miethe et al., 2019). Law enforcement incidents are typically publicized via media outlets (Baker & Bacharach, 2017; Graziano & Gauthier, 2018; Kennedy, 2017; Nix et al., 2018). Media, including internet, local news, and newspapers, all have varying impacts on public perception of police legitimacy (Graziano & Gauthier, 2018). Lack of neutrality in media reporting is influential to public opinion. People who consume negative police media coverage tend to perceive law enforcement as less legitimate (Graziano & Gauthier, 2018).

There are many different types of misconduct that factor into police legitimacy crises. Three common incidents that undermine public trust are failure to report, sexual misconduct, and excessive use of force (Donner et al., 2018; Foust, 2018; Miethe et al., 2019). Failure to report, sexual misconduct, and excessive use of force typically result from ethical failings. Failure to report is perceived as dishonest police officers covering for their own (Donner et al., 2018; Foust, 2018). Incidents involving sexual misconduct among law enforcement officers have a pronounced impact on public trust (Lopez et al.,

2017). Excessive use of force is commonly at the core of community conflict with law enforcement (Celestin & Kruschke, 2018; Miethe et al., 2019; Ouellet et al., 2019). A brief discussion of each offense is provided in the following section.

Failure to Report

Police failure to report refers to incidents in which an officer observes colleague misconduct and does not notify the appropriate authority. Failure to report is often a product of police culture (Westmarland & Rowe, 2018). Blue wall culture is one of loyalty (Donner et al., 2018; Foust, 2018; Westmarland & Rowe, 2018). Failure to report is often viewed as unethical coverup by police (Donner et al., 2018). Failure to report can further serve to exacerbate distrust for law enforcement (Donner et al., 2018).

There are limits to the extent an officer will fail to report. Failure to report typically occurs for minor infractions (Westmarland & Rowe, 2018). Police officers will usually report severe offenses by their colleagues (Westmarland & Rowe, 2018). Officers who commit serious offenses are more likely to do so alone (Westmarland & Rowe, 2018). Incidents of failure to report can cause significant distrust even in cases where offense is relatively minor (Donner et al., 2018). Failure to report is viewed as evidence police agencies are not ethically self-governed.

Police and Sexual Misconduct

Police sexual misconduct (PSM) is especially disconcerting to the public (Lopez et al., 2017). PSM is a professional failing that disgusts the public due to its personal nature (Lopez et al., 2017; Heil, 2018). PSM includes a wide variety of unethical activities. Incidents of PSM can range from on-duty consensual sex to forcible rape (Heil,

2018; Kubiak et al., 2017). Enforcement of PSM is difficult due to victim fear and legal loopholes (Heil, 2018). Several states currently have no prohibition against police officers engaging in consensual sex while on-duty (Heil, 2018). Lack of prohibition leads to a clear ethical problem. Police officers wield tremendous power and may coerce sexual favors from otherwise unwilling victims (Heil, 2018; Kubiak et al., 2017).

PSM is a problem in the corrections environment (Kubiak et al., 2017). More than 80,000 inmates experience some level of sexual exploitation each year, with approximately 10% of incidents being reported (Kubiak et al., 2017). Many of these incidents are perpetrated by staff members (Heil, 2018; Kubiak et al., 2017). Corrections officers, unlike police officers, do not have the loophole of consensual sex as a legal defense. Federal law prohibits consensual sex between corrections staff and inmates (Heil, 2018).

PSM is heavily attributable to male officers (Heil, 2018; Kubiak et al., 2017). The majority of PSM victims are drug addicts, sex workers and minority women (Fedina et al., 2018; Purvis & Blanco, 2019). Drug addicts and sex workers are more likely to be in contact with police and are less credible as victims. Victims are at a power disadvantage to the offending officer. Imbalance of power is a dynamic that renders consent impossible under typical police-citizen interaction (Heil, 2018).

Approximately 36% of officers have committed a PSM violation (Purvis & Blanco, 2019). PSM is more widespread than previously believed. Occurrence of PSM is likely to be significantly underreported (Heil, 2018; Kubiak et al., 2017; Purvis & Blanco, 2019). PSM reporting rates are consistent with those of sexual assault in general.

Researchers have found PSM incidents take place once every five days (Purvis & Blanco, 2019). PSM is commonplace and egregious enough to warrant continued research (Purvis & Blanco, 2019).

Excessive Use of Force

Excessive use of force is one of the most significant sources of conflict between public and law enforcement. Excessive use of force is often an individual officer and organizational failing (Ouellet et al., 2019). Communities have become increasingly skeptical about physical force by police officers (Bejan et al., 2018; Celestin & Kruschke, 2018; Ouellette et al., 2019; Patton et al., 2017). Many recent uses of force incidents have led to negative opinions about police in general (Patton et al., 2017). A single use of force incident, whether justifiable or not, can potentially cause significant public backlash (Ouellette et al., 2019). Police officers no longer hold the benefit of doubt with a skeptical public (Celestin & Kruschke, 2018; Ouellette et al., 2019).

Police initiated stops account for most nonfatal use of force encounters between law enforcement and citizens (Office of Justice Programs, 2019). Police initiated stops include traffic stops and *street stops*. Street stops are encounters with pedestrians. Street stops are approximately 700% more likely to result in use force than traffic stops (Office of Justice Programs, 2019). Citizens are more likely to perceive police use of force as excessive in street stops (Miethe et al., 2019; Office of Justice Programs, 2019; Patton et al., 2017).

Experienced officers are more likely to use de-escalation language and mitigate use of force situations (Mangels et al., 2020). Police officer profanity during a physical

confrontation influences perception of excessiveness (Patton et al., 2017). Perceptions of excessive force were higher when suspects were punched or kicked during a police confrontation (Office of Justice Programs, 2019). Individuals who had experienced use of force themselves were more likely to perceive police force on others as excessive (Miethe et al., 2019; Office of Justice Programs, 2019). There is a public perception use of force incidents are increasing in frequency (Celestin & Kruschke, 2018). Researchers have found use force by police is rare relative to overall contacts between law enforcement and citizens (Celestin & Kruschke, 2018).

Fatal police encounters have profound impact on public opinion of police (Ouellette et al., 2019). Fatal police encounters are often geographically clustered (Feldman et al., 2019). An underlying commonality in areas with higher rates of police killings is poverty (Feldman et al., 2019). A disproportionate number of involved citizens are male minorities in impoverished metropolitan neighborhoods (Feldman et al., 2019). Demographic disparity is a reason for distrust of police by the affected groups (Rhodes et al., 2020).

Corruption Versus Misconduct

An operational definition of police corruption has not been unequivocally established (Albanese & Artello, 2019). The term corruption is connotatively inclusive of all officer misconduct. Misconduct and corruption are often used interchangeably. Police misconduct can be considered as corruption (Albanese & Artello, 2019). Corruption is a term for serious abuse of official position (Albanese & Artello, 2019; Sadigov, 2018).

Misconduct has a more general use and may include offenses that do not rise to the level of corruption (Stinson, et al., 2018).

Police corruption occurs when an officer commits a crime through use of official position (Albanese & Artello, 2019; Sadigov, 2018; Stinson et al., 2018). Corruption is often thought of in financial terms (Tunley et al., 2018). Financial corruption is significant aspect to corruption (Tunley et al., 2018). Other forms of corruption are common as well (Sekhon, 2019; Stinson et al., 2018). Incidents of corruption may involve psychological benefits including sexually mistreating arrestees or engaging in biased behavior toward a marginalized group (Stinson et al., 2018).

Officers who commit corrupt acts and rationalize these acts as necessary for the greater good may still be experiencing ethical drift. *Noble cause corruption* includes offenses such as lying in court and warrantless searches (Stinson et al., 2018). Noble cause corruption incidents offenses are committed with public service in mind (Stinson et al., 2018). An officer who gets drugs off the street or falsely testifies to get a known criminal convicted can rationalize this behavior as being necessary for public safety (Sekhon, 2019; Stinson et al., 2018). Ethical descent into corrupt behavior often results in an officer lying to cover their actions.

Insufficiencies in police pay is a common cause for corruption (Bell, 2017; Peltier-Rivest, 2018). Police officers are often paid hourly wages (Bell, 2017). Officers often work overtime hours to make more money (Bell, 2017). Extensive shift work combined with overtime can lead to significant burnout (Peterson et al., 2019; Violanti et

al., 2018). Burnout can impact an officer's efficacy, ethics, and incentivize them to seek alternate employment (Bell, 2017; Peltier-Rivest, 2018; Peterson et al., 2019).

Burnout is impactful to corruption on two fronts. Officers in need of money are more at risk to take bribes (Stinson et al., 2018). Officers who are qualified for higher paying jobs are more inclined to leave police work. Departure of qualified officers mean lesser qualified officers remain (Bell, 2017). Lesser qualified officers are presumably more prone to ethical transgressions.

Law enforcement officers are tasked with performing a difficult job without exceptional compensation (Bell, 2017; Schuck & Rabe-Hemp, 2018; Warner, 2018). Low education standards do not provide substantial barrier to enter the profession (Wood, 2017). Low pay combined with high stress and long hours are motivation for qualified candidates to seek employment in other professions (Peterson et al., 2019; Schuck & Rabe-Hemp, 2018). Many law enforcement agencies are understaffed due to increasingly low numbers of qualified applicants and problems with officer retention (Bell, 2017; Inwald & Thompson, 2020; Wood, 2017). A sparsity of qualified applicants may force agencies to settle lesser qualified officers (Inwald & Thompson, 2020).

Corruption at organizational levels is currently a serious concern (Bauhr & Grimes, 2017; Tunley et al., 2018). Organizational leaders are typically responsible for setting a culture that is permissive of corruption (Stinson et al., 2018) or themselves are corrupt (Tunley et al., 2018). Organizational transparency is necessary to reduce corruption (Bauhr & Grimes, 2017; Chanin & Courts, 2017). Open, transparent law enforcement agencies are more trustworthy in the eyes of communities (Chanin &

Courts, 2017). Citizens view transparency as an indicator police have with nothing to hide.

Counter-corruption efforts in police agencies should be multi-level (Tunley et al., 2018). Corruption can occur at any level within an organization. Efforts to stymie corruption must be applicable at each level within an agency. Agency leadership can effectively combat corruption by appointing counter-corruption managers at each level within their organization (Tunley et al., 2018). Counter-corruption efforts present at every level is helpful to isolate incidents of corruption and prevent a contagion effect.

Occurrences of corruption significantly undermine public faith in police officers (Albanese & Artello, 2019). Citizens who do not trust police officers often resort to solving problems on their own (Albanese & Artello, 2019). Citizens must trust police officers if they are to call them for assistance (Albanese & Artello, 2019; Bell, 2017). Citizens in communities with low levels of trust for law enforcement are faced with difficult decisions. Citizens are forced to choose between not reporting crime, calling police officers they do not trust, and addressing crime themselves.

Law Enforcement Organizational Culture

Individual police officer ethics are influenced by culture of their parent agency (Cordner, 2017; Enciso et al., 2017; Ouellette et al., 2019; Rosenbaum & McCarty, 2017). Culture of a law enforcement organization may have several prevailing characteristics. Presence of multiple subcultures within an agency provides an environment for blue wall culture to develop (Silver et al., 2017). Blue wall culture occurs more frequently in larger agencies due to the number of officers and bureaucratic

compartmentalization (Silver et al., 2017). Officers of larger agencies have more formal relationships with supervisors (Silver et al., 2017). Formal relationships are less likely to result in personal friendships.

Culture of a law enforcement organization is largely organic (Cordner, 2017). Typical police officer experiences generalize across a large sample once key demographics are controlled for (Enciso, et al., 2017; Singh, 2017; Fallik, et al., 2018). Organizational culture is highly variant (Cordner, 2017; Hoggett et al., 2018). A logical conclusion to be drawn from these findings is the importance of leadership style on an organization's culture (Grigoropoulos, 2019).

There are two primary research findings regarding law enforcement leadership (Hoggett et al., 2018). First is a transactional type of leadership in which an organization's management provides opportunities for staff and staff members permit managers to lead. Second is focused on a leader's charisma and personal traits as being effective for leadership. Prior research on these approaches has not yielded indication they are especially effective (Hoggett et al., 2018). Previous researchers have suggested inclusion of direct entry candidates could improve law enforcement leadership, as it would theoretically reduce corruption (Hoggett et al., 2018). Incorporation of outsiders into a law enforcement is a difficult task due to prevailing the blue wall culture (Maskaly et al., 2017).

Blue wall culture of law enforcement is a well-researched topic (Donner et al., 2018; Paesen et al., 2019). Blue wall culture stems from law enforcement solidarity (Donner et al., 2018). Law enforcement officers often view non-officers in their agency

with suspicion (Silver et al., 2017). Such suspicion makes agency governance by outsiders a difficult endeavor (Enciso et al., 2017). The closed nature of law enforcement agencies is not conducive to transparency.

An agency's culture can become conducive to misconduct as a result of pathological solidarity (Thomas & Tufts, 2019). Solidarity is typically a positive social phenomenon. Solidarity among colleagues can result psychological security and team cohesion (Thomas & Tufts, 2019). Solidarity when over applied in law enforcement is a dangerous outcome according to Thomas and Tufts (2019). Such danger is evidenced by a general lack of willingness for officers to report colleague misconduct (Westmarland & Rowe, 2018).

Blue wall culture is associated with various unfavorable behavioral outcomes. Officers who embrace blue wall culture are more likely to use force excessively (Huq et al., 2017; Silver et al., 2017). Physical force incidents are more prevalent among rank and file officer than of managers. Acceptance for use of force is also more prevalent among officers in larger agencies (Silver et al., 2017). Officers who are highly supportive of blue wall culture are less likely to support procedural justice (Silver et al., 2017).

Police Agency Size

Agency size has been found to have an impact on police officer work experience (Cordner, 2017; Warner, 2018). Agency size may correlate with differing rates of ethical drift among employed officers. Size of a police agency, as measured by number of sworn police officers, has a negative effect on officer stress (Warner, 2018). Officers in larger agencies perceive a lack of support from leadership (Warner, 2018). Lack of support

perceptions are exacerbated by the hierarchical structure of large agencies (Enciso et al., 2017). Large law enforcement agencies typically serve in larger metropolises. Large municipal agencies often have more officers than typical sheriff's offices (McCarty & Dewald, 2017).

Size of an agency is negatively correlated with community opinion (McCarty & Dewald, 2017). Officers in larger agencies experience more cynicism from the public (Huff et al., 2018). Larger organizations experienced lower levels of reported police misconduct (Huff et al., 2018). Findings of Huff et al. (2018) are not conclusive. Study was limited to five agencies in Arizona. It is possible increased resources and officers in specialized units such as Internal Affairs may contribute to fewer incidents of misconduct (Huff et al., 2018). Blue wall culture is more prevalent in larger agencies (Silver et al., 2017). Misconduct is possibly underreported in larger agencies because of the blue wall culture.

Larger law enforcement agencies typically have higher levels of organizational commitment among its officers (Perez et al., 2017). Larger agencies are usually more technologically advanced (Bell, 2017). Technologically advanced agencies have more officer buy in (Hendrix et al., 2018). Organizational commitment is dependent upon the presence of role dissonance. Officers unhappy with assignments within the agency are less likely to have high levels of organizational commitment (Perez et al., 2017).

Officers in larger agencies typically experience lower rates of officer attrition (Schuck & Rabe-Hemp, 2018). Larger agencies are often more diverse, pay better, and have more career opportunities within the agency itself (Bell, 2017; Schuck & Rabe-

Hemp, 2018; Silver et al., 2017). Smaller agencies are viewed by officers as stepping-stone employment stops on their way to larger agencies with more opportunities. Smaller agencies also experience higher levels of dismissal rate (Schuck & Rabe-Hemp, 2018). High dismissal rate among officers in smaller agencies is possibly due to employment of lesser qualified candidates.

Officer Age

An officer's age is likely to have an influence on their behavior in the line of duty (Ouellet et al., 2019; Silver et al., 2017). Younger and less experienced officers are more likely to over arrest (Ouellet et al., 2019). Younger officers are also more likely to use force and underemphasize de-escalation when dealing with citizens (Mangels et al., 2020; Silver et al., 2017). Lack of de-escalation skills may be a product of inexperience. Stereotypical aggressive young male officer has a negative impact on police legitimacy (Silver et al., 2017).

Previous researchers have found young officers are more likely to embrace blue culture (Rosenbaum & McCarty, 2017; Silver et al., 2017). Younger officers are susceptible to subculture indoctrination (Ouellet et al., 2019). Officers initially display a strong sense of organizational commitment that declines over time (Rosenbaum & McCarty, 2017). Older officers tend to develop health problems such as hypertension and obstructive sleep apnea from chronic work-related stress (Pan et al., 2019). Older officers are subject to work-related cynicism and burnout (Violanti et al., 2018).

Younger officers are more likely to get in trouble with alcohol-related incidents and gambling (Zavala, 2017). Male and female officers are similarly susceptible (Zavala,

2017). Unfavorable outcomes include alcoholism, depression, and low quality of life in older officers (Pan et al., 2019). Older officers are less likely to seek help for stress-related burnout (Saunders et al., 2019). Older officers less likely to engage in work over-commitment (Violanti et al., 2018).

Law Enforcement and Gender

Police officers of different genders experience law enforcement differently (Beagley et al., 2018; Chitra & Karunanidhi, 2018; Chu, 2017). Women experience law enforcement different than males in several ways (Beagley et al., 2018; Chitra & Karunanidhi, 2018; Chu, 2017). Female officers differ from male officers in dealing with stressful events (Beagley et al., 2018). Male officers are less responsive than their female counterparts to resilience training (Chitra & Karunanidhi, 2018). Male officers are less likely to perceive female officers as professionally competent (Chu, 2017).

Law enforcement is a highly stressful occupation (El Sayed et al., 2019; Saunders et al; 2019; Warner, 2018). Stress is a precedent to psychological burnout (Peterson et al., 2019; 2017; Warner, 2018). Male and female officers are stressed at differing rates. Differing aspects of law enforcement are more stressful depending on officer gender (Duxbury & Halinski, 2018; Saunders et al., 2019). Both genders similarly experience stress when the source of stress is the organization (Duxbury & Halinski, 2018).

Family factors are more stressful to female officers more than males (Duxbury & Halinski, 2018). Female officers with young children have additional pressure. Work hours often overlap with child-care requirements (Duxbury & Halinski, 2018). Female officers often experience family-role stress overload (Duxbury & Halinski, 2018). Male

officers experience work-role overload at significantly higher rate than female officers (Duxbury & Halinski, 2018).

Female officers are less likely to use excessive force or cause injury during physical confrontations (Huff et al., 2018; Ouellette et al., 2019). Female officers are less likely to show racial disparity in arrest decisions (Mbuba, 2018). Female officers affect arrests more evenly across racial demographic whereas male officers under-arrest minorities, perhaps due to the prevailing perceptions of the stereotypical aggressive male officer (Mbuba, 2018). Prior research has shown female officers are not as subject to stereotypes of police brutality (Mbuba, 2018). Findings are reversed in domestic violence situations, where female officers support mandatory arrests for domestic violence suspects, which are typically males (McPhedran et al., 2017).

Women experience law enforcement differently within the organization as well (Chu, 2017; Chitra & Karunanidhi, 2018; Duxbury & Halinksi, 2018; Terrill et al., 2018). Female officers are less likely to pursue promotions at work (Duxbury & Halinksi, 2017; Terrill et al., 2018). Female officers prioritize their lives differently with higher emphasis on familial obligations (Duxbury & Halinksi, 2017). Discriminatory policies and biases held by male supervisors are deterrents to female police officers in seeking promotions (Shjarback and Todak, 2019). Discriminatory biases may include a lack of confidence in females to perform effectively in the field (Chu, 2017).

Women do not typically have as many connections in the law enforcement community (Barnes et al., 2017). Situational alienation is hypothesized to render female officers as more trustworthy and less corrupt (Barnes et al., 2017). Assumption about a

lack of network is sensible given that women make up approximately 12% of law enforcement officers (Shjarback & Todak, 2019). Women officers may ultimately end up being corrupt. Lack of an expansive network, at least initially upon entering law enforcement, is seen as a barrier to corruption (Barnes et al., 2017).

Fewer women may pursue law enforcement careers due to the physical nature of police work (Kukic et al., 2019). Women officers experience a significant decline in physical abilities between 30-35 years of age (Kukic et al., 2019). Physical decline may contribute to male officer's impression about females being less competent (Chu, 2017). Kukic et al. (2019) found female officers experience a significant increase in body fat with serious detrimental effects on their physical abilities, health. Female officers are also at elevated injury risk (Kukic et al., 2019).

Law Enforcement and Education

Law enforcement officers with higher education tend to provide superior outcomes (Fox et al., 2018). An advanced education may have an impact on the ethical behavior of police officers. Elevation of law enforcement officer education is considered an effective approach to fielding a professional and more ethical police force (Bartkowiak-Théron, 2019). People with college degrees are generally more culturally tolerant and competent (Cordner, 2019). Officers with advanced degrees are more likely to be skilled in de-escalation techniques (Fox et al., 2018). Police officers with criminal justice-related majors do not necessarily make for better police officers (Cox & Kirby, 2018; Williams et al., 2019).

Police officers are granted significant discretion in how they enforce the law (Silver et al., 2017). Consistent application of discretion requires systematic thinking. Logic is a structured approach to decision making and systematic at its core (Joaquin, 2019). Higher education provides an opportunity to acquire logical thinking skills. Relative percentage of police officers with higher education remains low (Fox et al., 2018). Highly educated law enforcement officers often leave police work to pursue other careers with higher pay (Bell, 2017).

Police officer education is correlated with differing attitudes and outcomes across many different aspects of law enforcement (Cunha & Gonçalves, 2017). Police officers with education level beyond that of high school are less likely to have a positive attitude toward offenders (Cunha & Gonçalves, 2017). Officers with college degrees are more likely to conduct traffic stops for lesser offenses (Rosenfeld et al., 2018). College educated officers are typically career-minded (Terrill et al., 2018). Officers with higher education are less likely to pursue formal punishment of student suspects as school resource officers (Bolger et al., 2019).

Law enforcement officers with college degrees are more likely to hold negative views of supervisors (Rosenfeld et al., 2018; Terrill et al., 2018). Educated officers often consider themselves to be intellectually equal or even superior to supervisors. College educated officers are more ambitious (Terrill et al., 2018). Ambitious officers are frequently dissatisfied with their hierarchical position within an organization. Officers with college degrees were found to hold unfavorable views of community-oriented policing (Rosenfeld et al., 2018).

Previous Approaches to Study of Law Enforcement

Prior researchers have approached the study of law enforcement organizations from a sociocultural angle (Maskaly et al., 2017). Researchers have addressed policing from a management perspective. Police occupational culture is unique from most other professions. Challenges exist for changing police culture due to the unique law enforcement culture (Silver et al., 2017). Many of these prior studies have been conducted to learn more about the uniqueness of law enforcement culture and its relationship with ethical behavior (Maskaly et al., 2017).

Research on law enforcement organizational culture from a management perspective has provided key insights. Several current studies resulted in further understanding of the influence leadership has on agency culture (Huq et al., 2017). Law enforcement culture is largely localized (Cordner, 2017). Organizational culture is organically developed (Cordner, 2017). Police misconduct may be a product of organizational culture more so than universal law enforcement experience. (Cordner, 2017).

Police occupational stressors are unique to the law enforcement profession (Cordner, 2017; Silver et al., 2017; Warner, 2018). Officers of different agencies similarly experience occupational stressors (Violanti et al., 2018). Law enforcement officers routinely experience inhumanity. Law enforcement officers are at risk for anxiety as a result of repeated exposure to negative experiences (Falkenbach et al., 2018). Solidarity among officers is a common coping strategy (Thomas & Tufts, 2020). Isolation behind the blue wall is permissive of ideological and ethical change (Silver et al., 2017).

Effectiveness of candidate screening has been the subject of extensive research (Garb et al., 2018; Wood, 2017). Individual psychological traits associated with policing outcomes has been a popular study topic (Falkenbach et al., 2018; Garb et al., 2018). Pre-screening process of police candidates appears to be relatively effective (Garb et al., 2018). Pre-screening techniques used in police officer candidate selection include intelligence testing and psychological assessment (Garb et al., 2018; Wood, 2017). Psychological assessment tests are used to make probabilistic determinations about a candidate's fitness for police work (Falkenbach et al., 2018; Garb et al., 2018).

Variables under consideration are justified by current literature. Police agency size is a key factor in organizational culture (Warner, 2018). Officer age, gender and education have been shown to be relevant in officer ethics (Beagley et al., 2018; Chitra & Karunanidhi, 2018; Rosenfeld et al., 2018; Todak, 2017). Ethical drift as a conceptual framework is novel, timely, and beneficial. EDR as a quantitative measure of police behavioral outcomes is groundwork for future studies.

Key IVs presented, agency size, officer age, gender, and officer education level have each been subject to extensive prior analysis. Agency size is established as a factor in officer behavior and overall experience (Huq et al., 2017; Warner, 2018). Larger agencies are viewed less favorably than smaller agencies by communities (McCarty & Dewald, 2017). Citizens in districts of larger agencies are less likely to file complaints for minor misconduct by officers (McCarty & Dewald, 2017). Citizens believe minor complaints are not likely to be taken seriously (McCarty & Dewald, 2017).

There are significant correlations between officer gender and certain duty-related behaviors (Beagley et al., 2018; Chitra & Karunanidhi, 2018; Chu, 2017). Male and female officers are stressed by different experiences (Beagley et al., 2018). Male officers are more likely to use force (Ouellette et al., 2019). Female officers are more responsive to training (Beagley et al., 22017). Male and female officers are each equally likely to not report minor ethical offenses committed by colleagues (Silver et al., 2017; Westmarland & Rowe, 2018). Female officers are perceived as less susceptible to corruption (Barnes et al., 2017). Some researchers suggest women should occupy more positions in law enforcement, including supervisory roles, because of their supposed resistance to corruption (Barnes et al., 2017; Shjarback & Todak, 2019).

Higher education and law enforcement have received considerable attention among researchers. Findings are mixed regarding benefits of higher education in law enforcement (Silver et al., 2017). College educated officers are more likely to over police (Rosenfeld et al., 2018). College graduates are typically more career minded, which leads to proactive policing efforts. Proactive policing efforts are expected to result in promotions (Rosenfeld et al., 2018). Officers with higher education are more likely to have opportunities outside of law enforcement (Bell, 2017, Silver et al., 2017). Highly qualified officers may begin to leave law enforcement as the profession continues to experience a difficult relationship with the public they serve.

Summary and Conclusions

Behavior of a single officer can cause severe damage to a community (Metcalfe & Pickett, 2018). Many previous studies have shown the fragility of police relationships

with communities (Graziano & Gauthier, 2017). A single incident of misconduct can serve to confirm suspicion the representative police department is corrupt (Graziano & Gauthier, 2017; Lee et al., 2017). Modern police officers operate without benefit of doubt (Lee, 2017). Multiple misconduct incidents have been contributory to the legitimacy crisis police currently face.

Current research literature on law enforcement organizational factors, age, gender, and education as they relate to ethical behavior is an expansive corpus (Cordner, 2019; Silver et al., 2017; Westmarland & Rowe, 2018). Studies of effective leadership and management practices in law enforcement are abundant (Hoggett et al., 2018; Perez et al., 2017; Rosenbaum & McCarty, 2017; Schuck & Rabe-Hemp, 2018). Research of police culture has been a popular study topic and is also abundant (Cordner, 2017; Reynolds & Helfers, 2017; Silver et al., 2017). Gender is a topic of study across many domains and highly tangible in law enforcement research (Chu, 2017; Duxbury & Halinski, 2018; McPhedran et al., 2017). Relationship between education levels and job performance is a timeless topic of research. Study of education continues to be true in law enforcement research as well (Cunha & Gonçalves, 2017; Rosenfeld et al., 2018).

Application of ethical drift to law enforcement is an advancement in understanding police misconduct. Results filled a gap in knowledge of how agency size, age, gender, and education levels relate to law enforcement officer ethical drift. Manner in which ethical drift manifests into poor behavioral outcomes has now been quantified in temporal terms. Analysis results are informative as to conditions that promulgate ethical drift. Findings are potentially useful to reduction of officer misconduct.

Officer misconduct is an important topic in the field of forensic psychology (Hoggett et al., 2018). Ethical drift is a concept on which future forensic psychology research can be based. Knowledge of individual and collective influences to officer ethical behavior was extended in the discipline by improved understanding regarding psychosociological underpinnings involved with ethical drift. Ethical drift analysis in law enforcement context is a practical and theoretical roadmap to significantly improving understanding of police misconduct. Gained knowledge regarding how particular conditions impact ethical behavior of various officers is beneficial to law enforcement leadership and researchers alike.

Current analysis was an assessment of agency size, officer age, gender, and education as important aspects to officer behavior. A logical next step was to investigate the possibility these factors, either in isolation or combinations, as functionally predictive of EDR. Chapter 3 is a discussion of the appropriateness of MLR and ML as predictive tools for EDR. MLR as a statistical method of choice is discussed. Relevant ML models are expounded upon.

Chapter 3: Research Method

A nonexperimental quantitative investigation was conducted to test Sternberg's (2012) concept of ethical drift in law enforcement. Ethical drift was recorded in temporal terms to allow for quantitative analysis. Previous research findings have established that parent law enforcement organization size, officer age, officer gender, and officer education are influential in ethical behavior (Beagley et al., 2018; Enciso et al., 2017; Fox et al., 2018; Huff et al., 2018; Ouellet et al., 2019). The current study intention was to expand existing literature by examining the correlative strength between these IVs and EDR. A regression best fit model was constructed to test predictive validity for EDR as a function of law enforcement agency size, officer age, officer gender, and officer education.

Chapter 3 includes a detailed discussion of the research design and rationale. The chosen population, sampling and sampling strategy, data collection, instrumentalization and operationalization of constructs, and data analysis plan are also discussed. Internal and external threats to validity are addressed. Assumptions associated with statistical analyses are provided. Ethical procedures consistent with the requirements of the Walden University Institutional Review Board are outlined as well.

Research Design and Rationale

Research variables were agency size, officer age, officer gender, officer education level, and EDR. A nonexperimental quantitative research design with MLR was used to analyze publicly available archival data. Archival secondary data were advantageously

used (see Wallis et al., 2018). Data were not expected to require a significant amount of time to obtain. The financial cost of obtaining data was expected to be minimal.

The research design was selected to align with the study research questions (RQ) listed in Chapter 1. Each RQ was stated as an investigation into the correlation between IV and DV. Correlational studies are commonly done with regression analyses (McKechnie & Fisher, 2020). Regression is used in research to determine the magnitude of the relationship among variables (Blanca et al., 2018). Regressions are also used to make predictions (Baayen et al., 2019). An ML model was fit to the MLR after a statistically significant finding. ML is a useful method in validating predictive capability of statistical models (Deeks et al., 2019).

The design choice for this study was consistent with research designs used to advance knowledge in forensic psychology. Regression models are commonly used in psychological studies (Blanca et al., 2018). Predictive algorithms are beneficial to test the validity of a statistical model. ML models are becoming more widely used in law enforcement (Shapiro, 2019). ML models are potential tools for research in forensic psychology.

Archival police records are commonly used in research on law enforcement (Bauhr & Grimes, 2017; Chanin & Courts, 2017). Archival data are readily available. Archival data are useful in conducting investigations into law enforcement phenomena. Data provided in archival records are expected to be accurate. Replication of research conducted using archival data is easy due to their availability.

Methodology

Population

The sample population was recent or current sworn law enforcement officers in central Florida. Officer records were obtained from local municipalities or county sheriff's offices. Federal, state, and military police were not included. Multiple agencies throughout central Florida were contacted. Contacted agencies were expected to range in size by number of officers employed.

There are 19 local police departments and two sheriff's offices in Orange and Seminole Counties. Departments reported criminal offenses for 2019 along a range of 25 to 12,962. The median number of offenses was 228. Agency statistics supported the assumption that agencies in this area vary widely in size. Variation among IVs of interest were expected to similarly vary.

Sampling and Sampling Procedures

A purposive sampling strategy was implemented to obtain personnel records from area law enforcement agencies (see Serra et al., 2018). Purposive sampling is useful for obtaining data about a specific group with qualities of interest (Serra et al., 2018). The specific group of interest in the current study was central Florida law enforcement officers. Agency information was also of interest. Qualities of interest were agency size, officer age, officer gender, and officer education level.

Personnel records for current and recently employed sworn law enforcement officers of local city police and sheriff's deputies were obtained via public records. Requests were conducted in the required manner for each included agency. Records were

requested only for officers with documented incidents of misconduct for calendar years 2015 through 2020. Unfounded allegations of misconduct were not requested. Records obtained from local agency were validated against CJSTC records.

Records for officers no longer with a department were obtained for validity purposes. Former officers may have been terminated for ethical offenses, may have resigned while under investigation, or may have been arrested for a crime. Nonsworn and civilian employees were not included. Part-time officers were excluded. Officers who had left the department more than 5 years prior were not included. A request for older records was expected to require a substantial amount of time.

Federal, state, and military law enforcement agencies were excluded. Officers in these agencies have a different law enforcement experience than city police officers and sheriff's deputies (Silver et al., 2017). Local law enforcement officers allocate a significant amount of time responding to civilian calls for assistance (Silver et al., 2017). Local officers also often engage in direct citizen contact that is not part of a larger investigation or operation. Federal, state, and military officers may engage in these activities, though not at the same frequency (Cheon et al., 2019). Highway patrol officers or troopers have state jurisdiction in Florida (Florida Legislature, 2019). Troopers have a unique mission specific to traffic and transportation enforcement that was beyond the scope of this study (see Florida Legislature, 2019).

Sample Size Power and Effect Size Analyses

A power analysis was conducted to establish a minimum sample size for achieving an acceptable probability of avoiding type II errors. Desired power for 0.80,

which is standard according to McKechnie and Fisher (2020). An alpha level of less than 0.05% was used because this is the standard threshold for typical statistical analyses (McKechnie & Fisher, 2020). Findings indicated a minimum sample size of 85 was needed. Statistical power analysis was calculated using G*Power 3.1.9.7. G*Power was developed for use in behavioral and social science research (Faul et al., 2009).

Effect size refers to the magnitude of effect an IV has on a DV (Hanel & Mehler, 2019; McKechnie & Fisher, 2020). A small effect size is traditionally less than 0.20. A moderate effect size is 0.20 to 0.50, and a large effect size is greater than 0.50 (McKechnie & Fisher, 2020). Effect size categorizations are general suggestions, and effect size interpretation is dependent on study specifics (Hanel & Mehler, 2019). The R^2 statistic and adjusted R^2 statistics are commonly used as an indicator of effect size in linear regression models (Bar-Gera, 2017; Hanel & Mehler, 2019).

Procedures for Collection of Archival Data

The primary strategy for data collection was public records request. Information related to police records was publicly available under the Freedom of Information Act (United States Department of Justice, 2016). Each selected agency was contacted via email to request relevant records. Requirements for each agency to provide the necessary records varied. A fee for records was required for some agencies.

Data were provided electronically or in physical format. Data provided in physical format were provided by traditional mail. Data provided electronically were delivered via email. Some agencies provided a hyperlink to a cloud-based repository from which the data were downloaded. Data were compiled into spreadsheets upon collection.

No specific permissions were required to gain data access. Included agencies were informed that obtained data were for research purposes. Each agency was provided with an email outlining the information needed (see Appendix B). Email requests addressed information about the agency's size and the age, gender, and education level of each officer with a sustained misconduct incident in 2015 through the present. Officers' personal information was not requested.

Florida law enforcement agencies are legally compelled to keep accurate records (Florida Legislature, 2019). Agency records are to include regularly updated information of public servants. Law enforcement officers are included as public servants. Records are updated and maintained on a quarterly basis (Florida Legislature, 2019). Record reputability was reasonably ensured as a result of clear legal guidelines.

Public records of law enforcement officer and agency are reliable representations for the variables under consideration. Records were expected to provide direct information about agency size, officer age, officer gender, and officer education. Variability in record keeping was expected. Variability in record keeping methods was not expected to negatively impact record accuracy. Records obtained were expected to be reasonably accurate.

Instrumentation and Operationalization of Constructs

Operationalization

The IVs were law enforcement agency size, officer age, officer education level, and officer gender. The DV was EDR. Each of these variables was operationally defined as follows:

Law enforcement agency size: The number of sworn law enforcement officers certified by CJSTC currently employed on a full-time basis by the agency.

Officer age: The number of years since date of birth at the time of certification as a sworn law enforcement officer according to personnel records provided by the agency.

Officer education: The classification of formal education for law enforcement officer included in the study according to personnel records provided by the agency. High school education or equivalent was assumed because this is a minimum requirement to be certified in Florida.

Officer gender: The gender classification (male or female) for a sworn officer according to personnel records provided by the agency.

Ethical drift rate (EDR): The number of days from date of hire with the agency until a documented and sustained ethical misconduct incident (as defined by the CJSTC) according to agency records.

Agency size was measured by the number of sworn law enforcement officers employed by the agency. Agency size was categorized. The first level consisted of 1 to 24 officers. The second level was 25 to 74 officers. The third level was 75 to 299 officers, and the fourth level was 300 or more officers. This size categorization strategy was used by Silver et al. (2017).

Officer education level was a categorical variable with five levels: high school diploma, associate's degree, bachelor's degree, master's degree, and doctorate. Officer gender was a dichotomous variable. Levels were male and female. EDR was measured by the number of days between hire date and first ethical offense according to department

personnel records. Categorical IVs were transformed into dummy variables prior to inclusion in the regression model (see Zimmerman et al., 2020).

Each agency and officer included was assigned a unique identifier. Each record for the analysis was similarly coded. Agency size was a descriptive statistic that required no calculation. Officer age was calculated by subtracting date of birth from the date of offense. Some records were received with an integer number representing the officer's age at the time of public records request. Integer numbers were used with no further calculations. Officer education and gender were descriptive, so no calculation was required. EDR was calculated using dates provided in personnel records by the agency. Table 1 provides a sample date entry for a fictitious officer.

Table 1

Sample Data Entry of Fictitious Officer Data

Row_ID	person_nbr	agcy_nbr	agency size	gender	Education	year of birth	year certified	age at cert	year of incident	drift
1	247027	445	Large	M	BD	1979	2005	26	2016	11

Data Analysis Plan

Multiple software packages were used for data analysis. Data were initially cleaned and prepared using *Microsoft Excel* (2016). Microsoft Excel is an excellent tool for data management. It is compatible with most other software programs. Microsoft Excel is useful to store data in a comma separated value (CSV) format.

MLR was conducted using *Jamovi v1* (2019) statistical package (The jamovi project, 2019). Jamovi is a code-based statistical software. Jamovi is open sourced and

free to obtain. ML algorithm was applied in *R* (R Core Team, 2018). R programming language is a commonly applied in social sciences (Myint et al., 2019). R is also open sourced and free to obtain.

Data cleaning procedures largely depended upon format. It was anticipated that some or all the data would be provided in a portal document format (PDF). It was expected that a significant portion of the data would be manually entered into Microsoft Excel. Microsoft Excel was used to ensure there are no non-breaking spaces (char 160), inconsistent numbering or lettering, and void of unwanted characters. Basic calculations needed for statistical analyses were conducted in Microsoft Excel. Data set was saved as comma separated value (csv) format prior to use in Jamovi.

An anticipated data issue was missing values. Records with missing values were excluded. No record manipulation such as imputation was conducted. A sufficient number of viable records were obtained. Obtained sample size was large enough to omit records with missing values. Obtained data set was sufficiently large enough for power analysis threshold to be met.

Obtained data were split into two sets after pre-processing in Microsoft Excel. Data were utilized as training and test sets (Çelik, 2018). Training set was comprised of randomly selected 80% of data. Remaining 20% was test data. Assignment of specific records to training or test set was recorded to ensure replicability.

Research Questions and Hypotheses

Research Question 1: What is the relationship between officer age and EDR?

Null Hypothesis 1 (H_{o1}): There is no statistically significant relationship between officer age and EDR.

Alternative Hypothesis 1 (H_{a1}): There is a statistically significant relationship between officer age and EDR.

Research Question 2: What is the relationship between officer gender and EDR?

Null Hypothesis 2 (H_{o2}): There is no statistically significant relationship between officer gender and EDR.

Alternative Hypothesis 2 (H_{a2}): There is a statistically significant relationship between officer gender and EDR.

Research Question 3: What is the relationship between officer education level and EDR?

Null Hypothesis 3 (H_{o3}): There is no statistically significant relationship between officer education level and EDR.

Alternative Hypothesis 3 (H_{a3}): There is a statistically significant relationship between officer education level and EDR.

Research Question 4: What is the relationship between the agency size and EDR?

Null Hypothesis 4 (H_{o4}): There is no statistically significant relationship between the size of agency and EDR.

Alternative Hypothesis 4 (H_{a4}): There is a statistically significant relationship between the size of agency and EDR.

An MLR was used to investigate association between IVs and DV on the training set. MLR was an appropriate methodology for the current study design. MLR can be used

to analyze association between multiple IVs and a single continuous DV (McKechnie & Fisher, 2020). An MLR model provides information about correlation between IVs and DV for each IV (Garver & Williams, 2017). Determination of coefficient statistics are indicative of IV impact to overall model. There are several statistics generated by the MLR to be interpreted in assessing model viability (McKechnie & Fisher, 2020).

Key model statistics interpreted were *p*-value, R^2, adjusted R^2, and *F* statistic (Bar-Gera, 2017; McKechnie & Fisher, 2020). MLR model viability was established by assessment of *p*-value significance at the conventional 0.05 threshold (McKechnie & Fisher, 2020). Threshold is referred to as an alpha level, or α (McKechnie & Fisher, 2020). A *p*-value is a statistic interpreted as the probability model results are due to chance (McKechnie & Fisher, 2020). A *p*-value less than alpha threshold is considered to be statistically significant (Peskun, 2020).

The R^2 statistic is a coefficient of determination and is often used as effect size estimate in linear regression models (Bar-Gera, 2017). There are multiple ways to determine effect size for MLR models (Bar-Gera, 2017; Hanel & Mehler, 2019). MLR effect sizes are commonly determined by use of the R^2 and adjusted R^2 statistics (Bar-Gera, 2017; Hanel & Mehler, 2019), though R^2 is likely a better effect size statistic when used with simple linear regression (SLR; Bar-Gera, 2017). Adjusted R^2 statistic is often a better indicator of effect size in MLR (Bar-Gera, 2017). MLR associated *F* statistic is obtained by conducting an analysis of variance (ANOVA; McKechnie & Fisher, 2020). *F* statistic obtained from an ANOVA is used to determine critical value for an MLR model (Jeon & De Boeck, 2017).

A training set MLR was initially constructed using all IVs on 80% of the data set. Usefulness of each IV to overall model strength was assessed. Model of best fit was constructed from most impactful IVs. Model impact was determined by effect size in combination with statistical significance. Resultant model of best fit was then applied to the test set. Test set analysis results were used to interpret predictive capability for the model of best fit.

Test set effect size was dependent upon which MLR variables were included in model of best fit (Bar-Gera, 2017). Adjusted R^2 was interpreted as effect size for MLR. Effect size for SLR was determined by R^2 statistic. (Garver & Williams, 2017). A 95% confidence interval for each iteration was reported. Statistical significance of model *p*-value was also reported.

Code used to construct the ML algorithm was used to provide a predicted EDR score (see Appendix C). Predicted score was compared to actual score via SLR. Resultant data points were plotted in a scatterplot. SLR was analyzed for information about model performance. Key statistics analyzed from SLR were *p*-value and R^2. Pearson's *r* was also useful for assessment of correlational strength (McKechnie & Fisher, 2020).

MLR and associated regression-based ML algorithms may not result in a predictive model for EDR. Classification ML algorithms are an alternative (Çelik, 2018). A classification ML algorithm was a possible post hoc analytical strategy. Selection of classification method was dependent on data type (Çelik, 2018). Many possible classification ML algorithms were possibilities. Classification ML approach anticipated for this data was cluster analysis (Çelik, 2018).

Threats to Validity

A potential threat to external validity was agency type. Municipal police departments and county sheriff's offices have different structural components (Cheon et al., 2019; Silver et al., 2017). Sheriffs are elected officials and police chiefs are appointed, usually by a city mayor (Silver et al., 2017). Political makeup and environment for these two agency types is significantly different. Political makeup and environment may have an impact on EDR.

Organizational structural threats to validity can be addressed in possible future analyses. Analysis included multiple sheriffs' offices. Agency type was intentionally omitted as covariant. Sheriffs' offices are larger than municipal agencies in central Florida. Inclusion of agency type would be expected to result in multicollinearity with the agency size variable. City police departments are typically larger than sheriffs' offices in other geographic regions (Silver et al., 2017). Replication with more agencies across a larger geographic population can potentially address agency type as an additional IV.

Overall base rate of occurrence for misconduct is low. Low base rate of occurrence is an obstacle for development of predictive model (McKechnie & Fisher, 2020). Descriptive statistics and probabilities were used where misconduct incidents were too rare to establish predictability. Statistical models were examined for proportionality of base rates (McKechnie & Fisher, 2020). Base rates were reported as descriptive statistics.

A threat to internal validity was cases where misconduct incidents were not related to the study variables (Patino & Ferreira, 2018). External forces may have caused

a single incident of misconduct not related to law enforcement. An officer who experiences some external pressure other than police work may act inappropriately on duty. There are several possible confounding variables to an individual's behavior. Outcomes may not be directly associated with the law enforcement profession.

Threat of external causalities was addressed by strict adherence to CJSTC definitions of moral behavior in *11B-27.0011 Moral Character*. All included records were validated as a disciplinary record by the CJSTC. CJSTC provides a detailed outline of ethical misconduct that may result in decertification (see Appendix A). It is also expected context was considered during the investigation of offense at agency level. Internal Affairs investigations concluded with an ethical violation were assumed to be accurately categorized. A large portion of data obtained was directly provided by the CJSTC. CJSTC database inclusion was a reasonable assurance included offenses met standards as outlined for ethical violations.

A threat to the statistical validity for MLR was model overfit (Agapitos et al., 2019). Model overfitting occurs when data used for a model are highly specific to that particular dataset (Garver & Williams, 2017). Consequence of overfitting a model is loss to generalizability (Garver & Williams, 2017). Conclusions from models constructed with overfit data tend to be erroneous (Agapitos et al., 2019). Overfit was addressed with the application of an ML model.

A safeguard against overfitting is to partition data (Agapitos et al., 2019). Application of statistical model trained on a training set to test data allowed for comparison. An overfit model developed with training set was not likely to have highly

similar results on test data (Agapitos et al., 2019; Garver & Williams, 2017). Data partition method was basis for the ML model constructed. Overfitting was not expected to be problematic.

MLRs are subject to several assumptions (McKechnie & Fisher, 2020). Assumptions are important in ensuring findings from the model are reliable (McKechnie & Fisher, 2020). MLR assumptions are that residuals are normally distributed. There should be no multicollinearity among IVs. Consistent variance of error terms for all scores across each value is also an assumption.

Multiple secondary tests are available to check these assumptions (Hickey et al., 2018). An assumption of normality can be checked with visual inspection of a normal probability plot (Hickey et al., 2018). A Shapiro-Wilk test can also be applied to check assumption of normality (González-Estrada & Cosmes, 2019). Multicollinearity can be assessed by an examination of Variance Inflation Factor (VIF) statistic (Hickey et al., 2018). A Levene's test can be utilized to check for homoskedasticity (Shear et al., 2018). Violations of test assumptions were addressed individually as they occurred.

Ethical Procedures

Each agency selected for inclusion was expected to have procedures in place for requesting and obtaining personnel records. Agency procedures for obtaining study data were followed. All communication with agencies was maintained in adherence to American Psychological Association guidelines (APA, 2017). Most agencies had privacy restrictions on officer data of birth. Year of birth was utilized in place, as this information was publicly available from the CJSTC.

Some personal information in obtained records is potentially harmful. Officer records were being analyzed for incidents of misconduct. Full context for misconduct incidents was not knowable without further investigation. Any lack of context would allow for a possible misunderstanding about key circumstances that may have contributed to an incident. APA ethical guidelines that govern beneficence were applied in analysis of officer records (APA, 2017).

Personal information possibly associated with personnel records was requested to be removed or redacted in advance. Personal information that was not redacted or removed and subsequently obtained in the data was not recorded. Officer personal information was not necessary for replication of this study. Each individual officer record was codified. Agencies were assigned a code by the CJSTC. Personal officer information was disposed of according to the APA Ethical Principles of Psychologists and Code of Conduct (APA, 2017).

Summary

A non-experimental quantitative investigation of publicly available officer personnel records was an efficient approach to exploring ethical drift in law enforcement. Requisite data were readily available with little financial cost. Variables under consideration were universal to law enforcement agencies nationally (Cordner, 2017; Silver et al., 2017). Information about officer age, gender, and education were expected to be commonplace in personnel records at each agency. Records were believed to be reliable and accurate.

An accepted approach to explore correlational phenomena is use of regression models (Blanca et al., 2018). MLR is a popular use of regression in psychological research (Blanca et al., 2018). MLR is a versatile method to investigate relationships among variables of interest (McKechnie & Fisher, 2020). MLR used in research to describe relationships and make predictions about unknown data (McKechnie & Fisher, 2020). Strength of association among variables are quantified in MLR statistical models (McKechnie & Fisher, 2020).

MLR was informative about relationships among variables and potential predictability (Blanca et al., 2019). Knowledge gained about association, in quantified terms, is useful to counter-corruption efforts for agency leaders. Findings can possibly be used to develop statistical models with other relevant variables that may underly EDR. Findings can be groundwork for development of advanced ML models (Agapitos et al., 2019). Additional ML approaches may result in an advancement in the study of ethical drift.

ML algorithms are popular in data-driven decision making (Agapitos et al., 2019). Supervised regression ML models can be used to validate statistical analyses. ML models are used frequently in predictive analytics (Çelik, 2018). Application of ML models in predicting officer ethical drift is a novel approach to protecting community interests. ML algorithms are a contemporary tool used to reduce noise while increasing signal in data analytics (Agapitos et al., 2019).

ML models are useful for discovering previously unknown associations of variables in a data set (Çelik, 2018). Cluster analyses are unsupervised classification

techniques that assist in learning new information about associations (Çelik, 2018). A classification analysis was constructed using the same training and test data splits. Classification model was constructed due to non-significant MLR results. Resultant classification model was useful for insight as to which officers ultimately engage in misconduct.

APA ethical guidelines were followed with potentially sensitive personnel records of included officers (APA, 2017). Records contained information about misconduct, which can be potentially harmful. An emphasis was placed on keeping individual identity anonymous. Personal information was not needed for the study. Unnecessary personal information was not recorded.

Chapter 4 is a detailed explanation of the completed analysis. A discussion of data collection procedures is provided. Applied analytic methodology is described. Predictability of EDR was quantified and assessed. Results for the regression analyses and ML model are discussed. Post hoc analyses are provided, and each research question is revisited with results for hypotheses.

Chapter 4: Results

The purpose of this study was to test Sternberg's (2012) concept of ethical drift in a law enforcement context. The goal was to determine whether a statistically significant relationship existed between the IVs and DV. Development of a predictive ML model was an additional goal. Goals were achieved with the use of publicly available archival secondary data obtained from multiple central Florida law enforcement agencies and the FDLE CJSTC. Records contained information on age, education, and gender of officers with sustained misconduct violations from 2015 to 2020. The size for each agency was obtained from FDLE databases. Research questions for this study were as follows:

RQ1: What is the relationship between officer age and EDR?

RQ2: What is the relationship between officer gender and EDR?

RQ3: What is the relationship between officer education level and EDR?

RQ4: What is the relationship between the agency size and EDR?

Chapter 4 includes a discussion of data collection and results of the analyses. The data collection section provides a discussion of the time frame involved in data collection. Discrepancies with the data collection plan in Chapter 3 are also reviewed. Descriptive statistics along with visual support such as tables and graphs are provided to clarify findings. Results of the MLR and ML algorithm are discussed in detail. The chapter concludes with a summary.

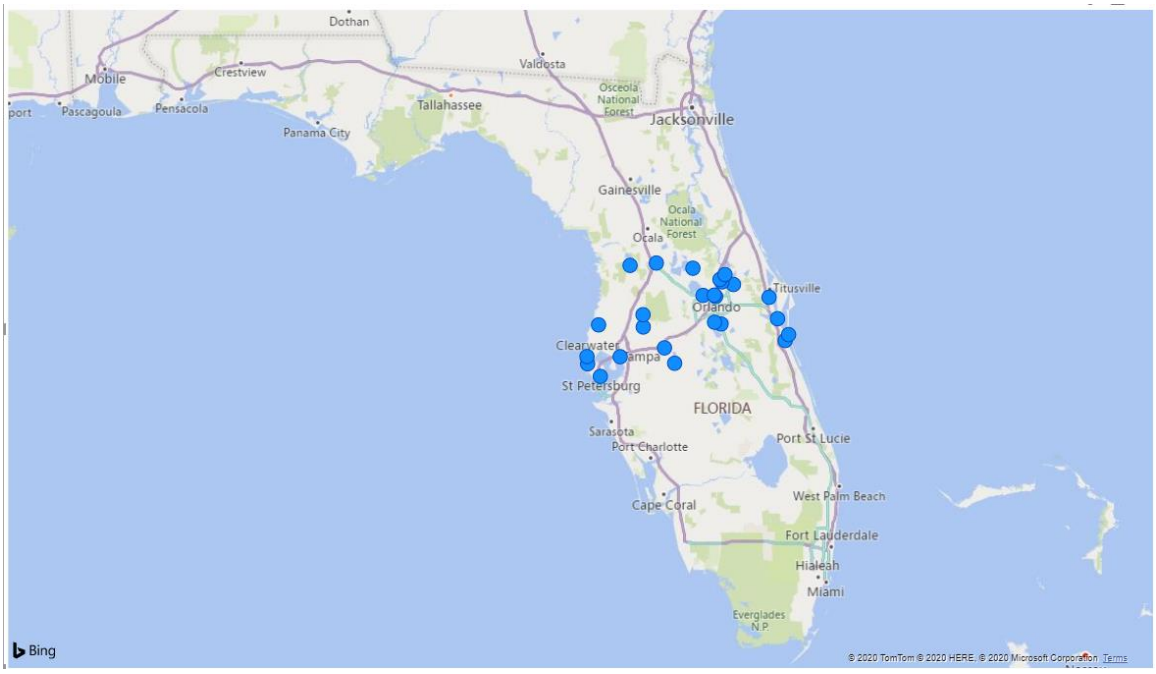
Data Collection

Requests for agency records were initiated on May 25, 2020. Requests were submitted via email to each agency's records department. All included records were

received by July 24, 2020. A total of 27 agencies across central Florida were contacted via email (see Appendix D). There is no official designation as to which counties compose the central Florida region. Counties were selected based on their general geographic location (see Figure 1).

Figure 1

Map of Include Agencies Locations



The sample size surpassed the minimum number of records needed based on the power analysis (see Faul et al., 2009). A complete database of all law enforcement officers historically certified in Florida was obtained from the CJSTC. The CJSTC database was provided at no cost and was in the form of a compact disc. Data were stored in a Microsoft Access (Microsoft Corporation, 2018) database. The CJSTC database was used to determine officer birth year, certification year, and agency employment dates.

A discrepancy with the initial data collection plan was the use of the CJSTC database. Existence of this database was previously not known. The CJSTC was contacted in an email request concerning officer education level. The CJSTC responded without comment by providing a compact disc containing the database. Information contained in the CJSTC was beneficial to analyses. The CJSTC database contained officer year of birth, certification date, offense disposition, employing agency information, and agency geographical information. The CJSTC database was used to ensure each included offense met CJSTC definitional criteria for ethical violations (see Appendix A).

The CJSTC also had information on agency size available for download. Data on agency size were collected in 2016. Agency size data were beneficial for internal validity. Size of all agencies was captured from the same chronological time, which resulted in data normalization. A drawback to this approach was slightly dated information.

Categories of agency size were adjusted to three levels from four. New levels were small, medium, and large. Deviation from the categorization plan was made because records on small agencies in previous categories of one and two were few. Only four records were obtained from Category 1. The combination of Categories 1 and 2 resulted in a larger sample size.

The time period for the study was increased to 5 years from 2 years. The original intention was for records to be limited to 2 years because of expected burden on agencies. Research into records several years old was expected to be tedious, slow, and costly. No additional research time was needed to expand the date frame with inclusion of the

CJSTC database. Inclusion of records going back 5 years allowed for a larger sample size with no apparent drawbacks.

Officer age was calculated differently from the original intended method. Officer age was calculated using year of birth and certificate date. The original method was to calculate officer age by subtracting date of birth from incident date. Calculation of age in this way would have created a problem of heteroscedasticity (McKechnie & Fisher, 2020). Years between certification as a law enforcement officer and offense overlapped years included in the calculation of age. This problem was resolved by using the age at the time of becoming a certified law enforcement officer.

Drift was calculated by years rather than days. Information on exact officer date of birth was not disclosed by any agency given concerns for privacy. The CJSTC database contained officer year of birth. Drift was then calculated by subtracting officer certification year from year of offense. A minor drawback to this approach was loss of some data granularity. A benefit to this approach was consistency in records. Table 2 presents the descriptive statistics of included records.

Table 2

Descriptive Statistics of Included Records

Category	*N*	Avg EDR (years)
Gender		
Male	130	10.97
Female	13	9.31
Age		
Minimum	19	
Maximum	48	
Mean	26.77	
Median	25	
Education		
High school (HS)	80	10.11
Associate's degree (AD)	20	11.15
Bachelor's degree (BD)	33	11.97
Master's degree (MD)	10	12.00
Agency size (number of officers)		
Small (1-74)	15	8.47
Medium (75-299)	25	11.32
Large (300+)	103	11.06

Note. No records received were associated with doctoral degrees.

Results are expected to generalize with national law enforcement agencies accurately. Descriptive statistics closely resemble demographic data for law enforcement agencies statewide. All sworn law enforcement officers in the state of Florida must complete a basic law enforcement academy and pass a state exam. Included law enforcement officers are or were employed with agencies ranging in size from 21 to 1486. Agencies included rural and urban areas.

Agencies are expected to differ from other agencies nationwide. Agency differences are not expected to be significant. Law enforcement agencies across the

United States range similarly in size. Law enforcement agencies serve multiple types of communities across the nation in urban and rural settings (Silver et al., 2017). Officers of varying education, gender, and age compose every agency nationwide.

Results

Multiple Linear Regression (Training Set)

MLR is a common statistical methodology used to investigate relationships between multiple IVs and a single continuous DV (McKechnie & Fisher, 2020). The current model included four IVs. Three categorical IVs were agency size, officer gender, and officer education. Categorical IVs were dummy coded (see Zimmerman et al., 2020). The continuous IV was age. EDR was a continuous DV.

The training set comprised 80% of randomly selected data. The code used to partition data included a set seed command (see Appendix C). Set seed is a code-line command in R. The set seed command is used to ensure subsequent analyses on study data set are randomly portioned exactly as in the original analysis. Results are replicable with use of set seed. Seed for partitioning data was set to 123.

An MLR was conducted on the training set to predict EDR from officer age, gender, and education and agency size (see Table 3). There was linearity as assessed by partial regression plots. Linearity was also verified by inspection of plotted studentized residuals against the predicted values. There was independence of residuals as assessed by a Durbin-Watson statistic of 1.96. There was no heteroscedasticity as assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values.

There was no evidence of multicollinearity as assessed by tolerance values greater than 0.1. The assumption of normality was met as assessed by a Q-Q plot. The MLR model was not a statistically significant predictor of EDR, $F(7, 106) = 1.51$, $p = 0.172$, adjusted $R^2 = -0.031$. No IVs were statistically significant predictors of EDR. Education ($p = 0.052$) and size ($p = 0.076$) were nearly statistically significant.

Table 3

Multiple Linear Regression Results for Training Set

			95% CI			
Predictor	Estimate	*SE*	*LL*	*UL*	*T*	*P*
Intercept [a]	12.0004	4.001	4.067	19.9336	2.999	0.003
Age	0.0993	0.121	-0.141	0.3397	0.819	0.415
Gender:						
Female-Male	-2.4156	2.690	-7.749	2.9176	-0.898	0.371
Size:						
Small – Large	-1.6204	2.252	-6.084	2.8436	-0.720	0.473
Medium – Large	-3.4060	1.903	-7.179	0.3665	-1.790	0.076
Education:						
BD – AD	-2.0113	2.526	-7.019	2.9963	-0.796	0.428
HS – AD	-4.4568	2.266	-8.949	0.0354	-1.967	0.052
MD – AD	-0.5610	3.461	-7.423	6.3011	-0.162	0.872

Note. $N = 114$, CI = confidence interval; LL = Lower limit; UL = Upper limit.
[a] Represents reference level

Model of Best Fit

The IVs most impactful in the model, as determined by statistical significance and effect size, were utilized to construct a model of best fit. The model included education

and size. An MLR was conducted to predict EDR from education and size on the training set (see Table 4). There was linearity as assessed by partial regression plots and a plot of studentized residuals against the predicted values. There was independence of residuals as assessed by a Durbin-Watson statistic of 1.99.

There was no significant heteroscedasticity as assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values. There was no evidence of multicollinearity as assessed by tolerance values greater than 0.1. Assumption of normality was adequately met as assessed by a Q-Q plot. The MLR model was not statistically significantly predictive of EDR, $F(5, 108) = 1.83$, $p = 0.113$, adjusted $R^2 = .04$. Education ($p = 0.079$) and size ($p = 0.052$) were nearly statistically significant.

Table 4

Multiple Regression Results for Model of Best Fit

			95% CI			
Predictor	Estimate	*SE*	*LL*	*UL*	*T*	*P*
Intercept [a]	14.10808	2.07	10.00	18.2116	6.81475	< .001
Size:						
Small – Large	-1.86902	2.23	-6.29	2.5483	-0.83867	0.404
Medium – Large	-3.69377	1.88	-7.43	0.0386	-1.96167	0.052
Education:						
BD – AD	-1.58508	2.43	-6.40	3.2321	-0.65223	0.516
HS – AD	-3.85227	2.17	-8.16	0.4555	-1.77258	0.079
MD – AD	-0.00897	3.42	-6.79	6.7747	-0.00262	0.998

Note. $N = 114$, CI = confidence interval; LL = Lower limit; UL = Upper limit.
[a] Represents reference level

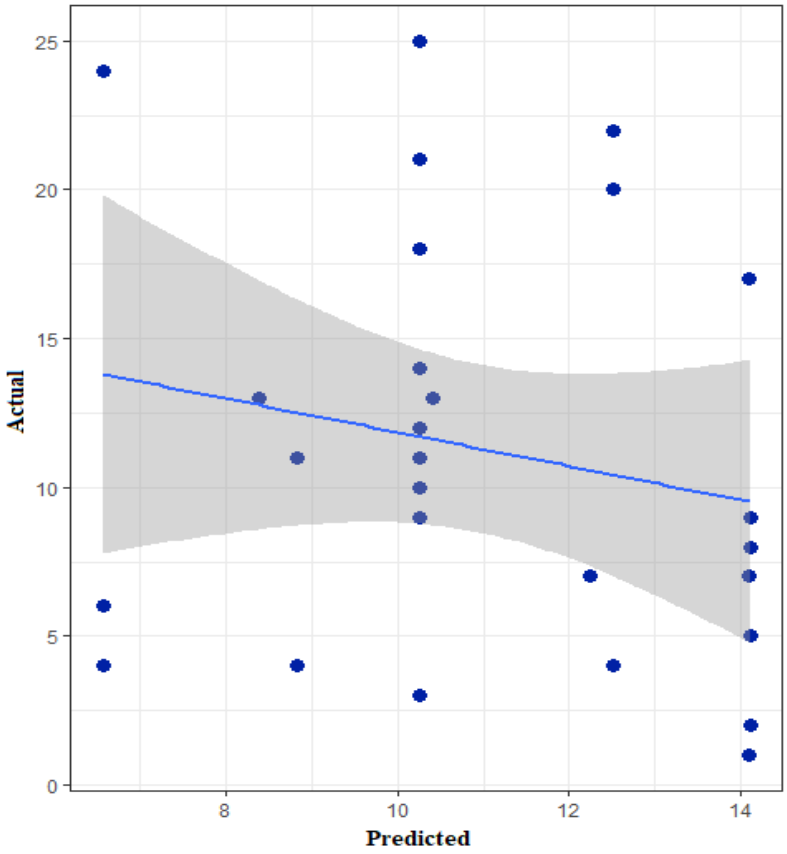
Applying Model of Best Fit to Test Set

SLR is a method to establish correlational strength between two continuous variables (McKechnie & Fisher, 2020). SLR can be similarly employed for predictions. SLR with predicted and actual scores was utilized to investigate predictive capability for model of best fit. ML model of best fit was applied to test set. Predicted scores were then regressed against actual scores to assess model accuracy (see Appendix E).

An SLR was calculated to predict actual EDR based on predicted EDR (see Table 5). A non-significant regression equation was found ($F(1, 27) = .949$, $p = .339$), $R^2 = .034$. A scatterplot of predicted against actual EDR was constructed (see Figure 2). No predictable relationship between predicted and actual EDR scores were found. Assumption of non-linearity is supported by statistical results from the linear regression model.

Figure 2

Scatterplot of Expected Versus Actual EDR Scores



Note. Shaded area indicates standard errors.

Table 5

Linear Regression Results for Predicted Versus Actual

			95% CI			
Predictor	Estimate	*SE*	*LL*	*UL*	*T*	*P*
Intercept	17.667	6.668	3.98	31.348	2.649	0.013
Predicted	-0.583	0.599	-1.81	0.645	-0.974	0.339

Note. $N = 29$, CI = confidence interval; LL = Lower limit; UL = Upper limit.

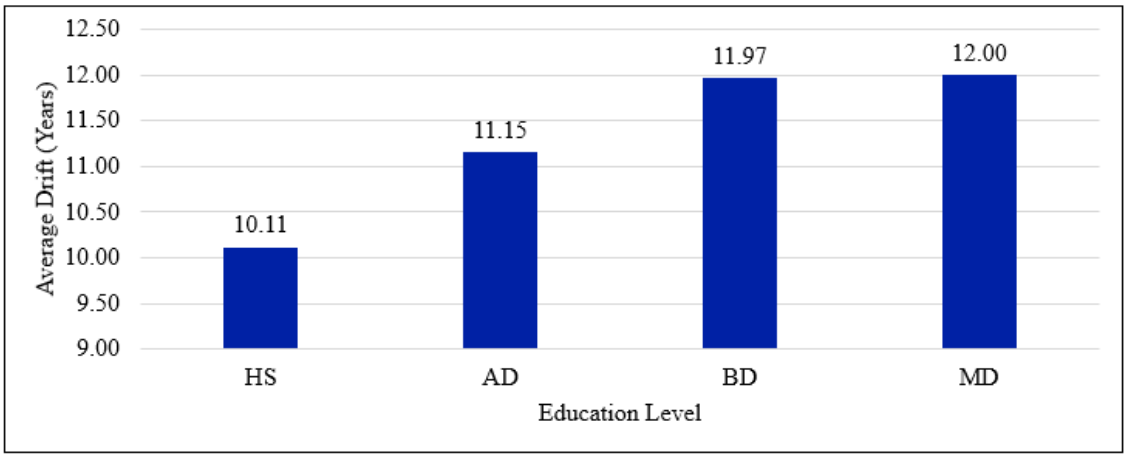
Post Hoc Analyses

Education and EDR

Initial MLR and subsequent ML model did not result in findings of a statistically significant relationship between education and EDR. An upward trend in EDR was found to be associated with education levels at near statistical significance (see Figure 3). Onset of ethical drift occurred later for each increase in officer education level. Largest difference in EDR was between HS and BD conditions. EDR for bachelor and master's degree levels only slightly differentiated.

Figure 3

Education Level and EDR

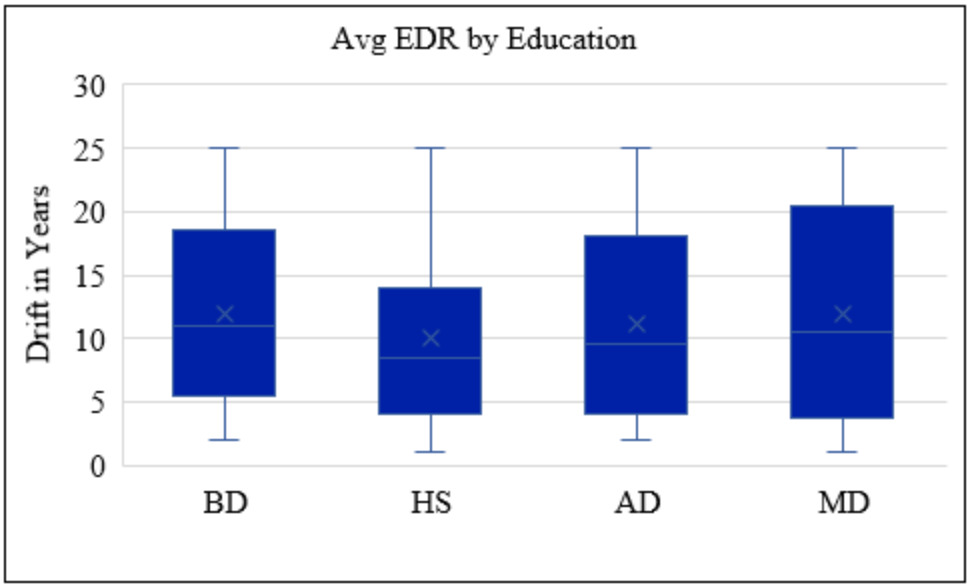


Note. HS = high school, AD = associate degree, BD = bachelor's degree, MD = Master's degree.

Mean comparison between more than two groups is often conducted with use of ANOVA (Mayer & Thoemmes, 2019). One-way ANOVA is used in situations where the groups of interest are not related and there are no repeated scorings (Tavares et al., 2020). A one-way ANOVA was conducted to compare mean differences of EDR in high school (n = 80), associate degree (n = 20), bachelor's degree (n = 33), and master's degree (n = 10) conditions. No significant outliers were found (see Figure 4). Assumption of normality was adequately met, as assessed by a Q-Q Plot. Levene's test results indicate homogeneity of variances (p = .797). There was a non-statistically significant difference in EDR [$F(3, 31) = .575$, $p = .635$].

Figure 4

Boxplot for EDR by Education Category



EDR and Agency Size

A wide range of values were found to be associated with agency size within each category. Small agencies ranged in size from 19 to 70 officers. Medium agencies ranged from 81 to 237 officers. Large agencies ranged from 321 to 1486 officers. Agency size was expected to be a better predictive measure of EDR when quantitatively considered. A departure from initial study approach was required for post hoc analyses.

Utilization of size as a continuous variable would not suffice for the original study design discussed in Chapter 3. Multiple officers included would have exact scores when employed by the same agency. An example is that nine officers were included from agency 448. Nine data points would have identical scores in the size category. Utilization

of size as a continuous variable when analyzing EDR by agency eliminated this problem. Size of each agency was a unique value (see Table 6).

Table 6

Agency Size Descriptive Statistics

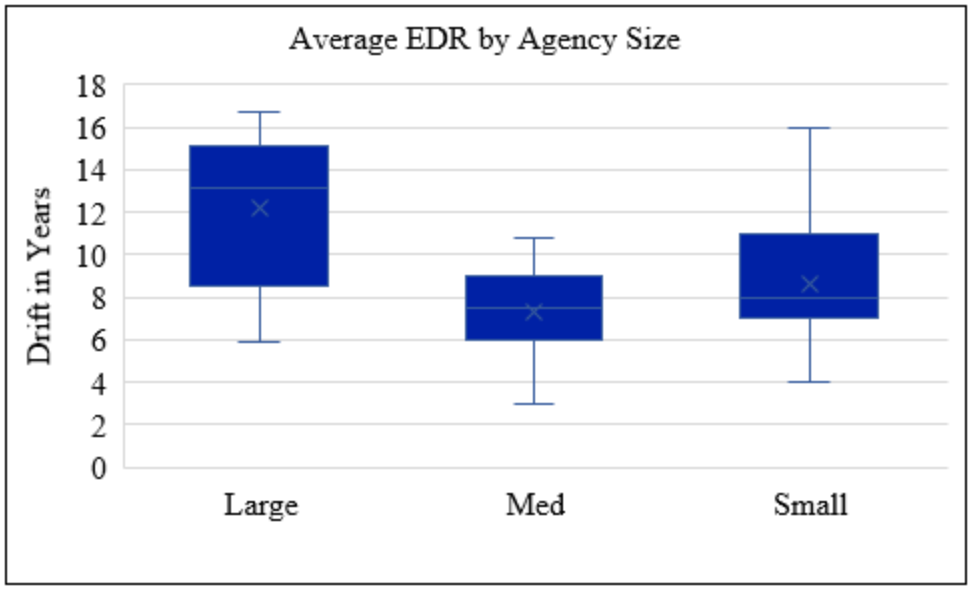
	size	*N*	Mean	*SD*	*SE*
Drift	Large	9	12.17	3.84	1.280
	Small	11	8.67	3.62	1.091
	Medium	7	7.33	2.58	0.977

A one-way ANOVA was conducted to compare mean differences of EDR in small, medium, and large agency conditions. Agency size data was classified into three groups, small (n = 11), medium (n = 7), and large (n = 9). Data were normally distributed for each group, as assessed by Shapiro-Wilk test (p = .692). Levene's test results indicate homogeneity of variances (p = .548). There was a statistically significant difference in EDR at the .05 alpha level [$F(2, 24) = 4.36$, p = .024].

A Tukey post hoc comparison was conducted to determine which specific conditions were statistically significantly different. The mean score for large agencies (M = 12.17, SD = 3.84) was statistically significantly different from medium agencies (M = 7.33, SD = 2.58). Mean score for small agencies (M = 8.67, SD = 3.62) was not statistically significantly different. Officers in large agency condition were associated with higher mean EDR. Officers in medium and small agency conditions were associated with lower mean EDR.

Figure 5

Boxplot for EDR by Agency Size Category



Resultant Predictive Machine Learning Model

ANOVA results were evidence of different EDR outcomes for officers in large agencies. Large agencies were found to be associated with statistically significant differing EDR. Data points that reliably fall into different categories indicate the possibility of prediction (Çelik, 2018). A classification ML model was suitable for investigating predictive validity of EDR. Resultant model was constructed to assess predictive capability of agency size from average EDR (see Table 7).

Multinomial logistic regression was a valid method for predicting the categorical outcome across more than two possible groupings (Szabo, 2018). A multinomial logistic regression was conducted to predict agency size from EDR (Szabo, 2018). The multinomial logistic regression was statistically significant, $\chi 2(2) = 7.90$, $p = .019$. Model

is explanatory for 13.5% of the variance in agency size as determined by McFadden's R^2 statistic. A small effect size of 13.5% was returned (McKechnie & Fisher, 2020).

Table 7

Multinomial Logistic Regression Model Results

							95% CI	
Size	Predictor	Estimate	*SE*	*Z*	*P*	Odds ratio	*LL*	*UL*
Small - Large	Intercept	3.152	1.629	1.94	0.053	23.387	0.960	569.498
	drift	-0.284	0.147	-1.93	0.054	0.753	0.565	1.004
Medium - Large	Intercept	3.771	1.830	2.06	0.039	43.406	1.202	1567.156
	drift	-0.418	0.186	-2.24	0.025	0.658	0.457	0.949

Note. N = 27, CI = confidence interval; LL = Lower limit; UL = Upper limit.

Overall model accuracy is calculated by dividing sum of scores from upper left to lower right in a diagonal fashion (see Table 7). Total is then divided by total score. Scores in the correct category on both x and y axes were correctly categorized. Small agencies were correctly categorized seven times out of 11. Medium agencies were correctly categorized one time out of seven. Large agencies were correctly categorized six times out of nine. Results indicate the model is an effective tool for predicting EDR by agency size for small and large agencies at better than chance. Prediction of EDR for medium agencies is not an outcome in this model.

Model was accurate for 52% of cases overall. Misclassification rate was 48%. Model was predictive for small agencies with 64% accuracy. Accuracy for medium agencies was 14%. Large agencies were correctly classified in 67% of cases.

Table 8

Results Table

	Small	Medium	Large
Small	7	6	3
Medium	2	1	0
Large	2	0	6

Probability that an officer was from a large agency and had an EDR of one standard deviation below group mean was 10% (see Table 8). Probability increased to 29% for the mean. Probability that an officer's EDR was one standard deviation above group mean and from a large agency is 59%. Probability that an officer experiences ethical drift beyond approximately 12 years rises to over 50% for those employed by large agencies. Similar probability for officers from small agencies is 31% (see Figure 6).

An increase in agency size is associated with and increased delay in EDR. Probability that an officer has already experienced ethical drift prior to 12 years is greater than 50% in medium agencies. The probability that an officer experiences drift after 12 years is a stark contrast between larger and smaller agencies (see Figure 7). Density score peaks are representative of modal scores (Gupta et al., 2019). Larger agency peak EDR demonstrably occurs after 12 years.

Data were not split into training and test sets due to small sample size. Post hoc data split would result in a training set sample with 22 records. Resultant test set would

be comprised of only five records. Reliability of prediction results on such a small sample is poor. Multinomial logistic regression models result in probability indications (Szabo, 2018). Model probabilities can be interpreted as predictive validity. Overall multinomial logistic regression model accuracy was utilized to assess predictive validity.

Table 9

Estimated Marginal Means - Drift

				95% CI	
Drift	Size	Probability	SE	LL	UL
5.60 ⁻	Large	0.1003	0.0768	-0.11302	0.314
	Small	0.4798	0.1399	0.09148	0.868
	Medium	0.4199	0.1418	0.02623	0.813
9.49 ᵘ	Large	0.2933	0.1037	0.00551	0.581
	Small	0.4653	0.1107	0.15791	0.773
	Medium	0.2414	0.0978	-0.03016	0.513
13.38 ⁺	Large	0.5924	0.1480	0.18156	1.003
	Small	0.3117	0.1352	-0.06375	0.687
	Medium	0.0959	0.0834	-0.13569	0.327

Note. ⁻ mean - 1SD, ᵘ mean, ⁺ mean + 1SD, Total *N* = 27, CI = confidence interval; LL = Lower limit; UL = Upper limit.

Figure 6

Estimated Marginal Means - Drift

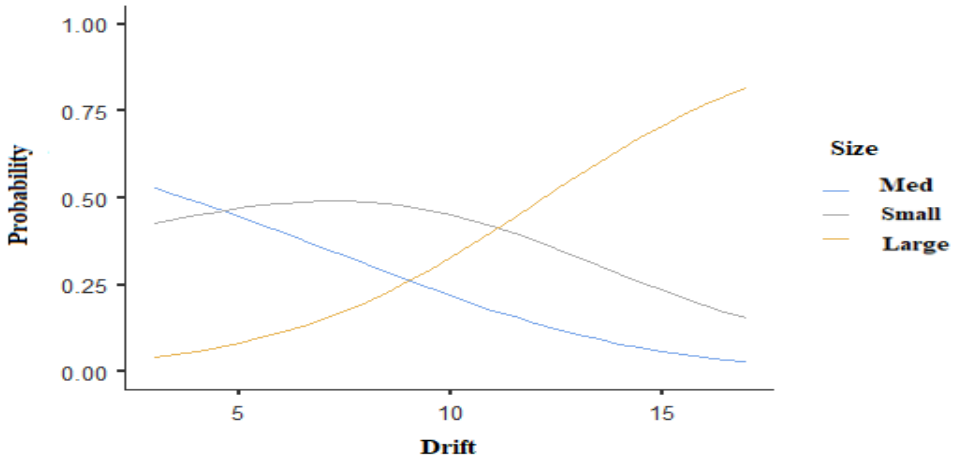
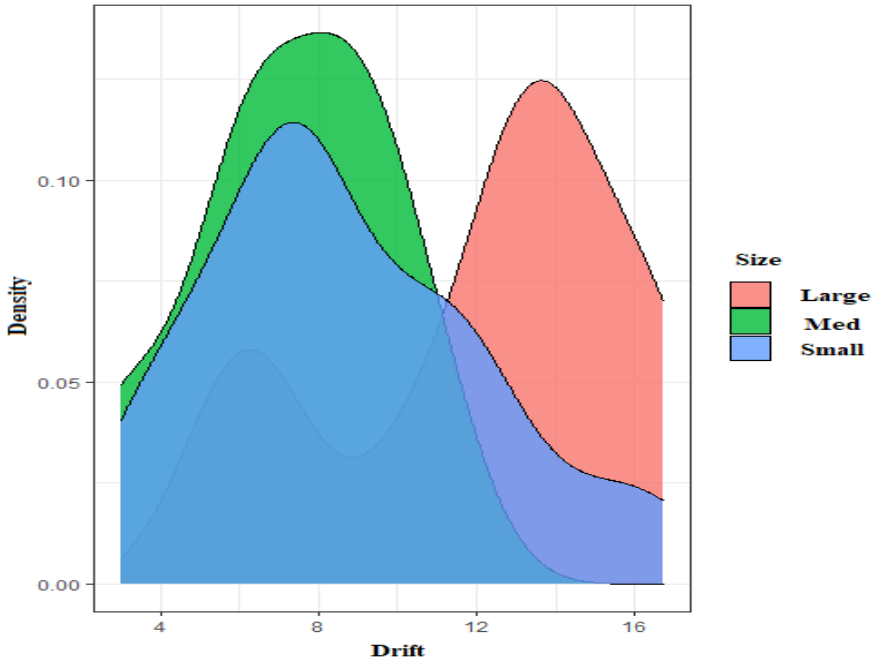


Figure 7

Probability Density Plot of Ethical Drift and Agency Size



Summary

Relationships between law enforcement officer age, gender, education, and agency size on EDR were quantitatively explored. An ML algorithm was trained on the MLR best fit model to determine if these collective IVs are adequately predictive of EDR. Initial MLR and model of best fit did not result in a predictive algorithm for EDR. A post hoc analysis was conducted, and a resultant statistically significant predictive model was developed. A larger sample size is needed to further validate model predictive capability.

An MLR model was prepared to investigate predictive capability for EDR as a function of officer age, education, gender, and agency size. Subsequent analysis results

are indicative only agency size is a viable predictor of EDR. Education is a potential predictor, though more analysis is needed. Gender and age were not statistically significantly contributory to the MLR model. Agency size as a categorical variable was not a statistically significant IV. Post hoc multinomial logistic regression analysis of agency size was statistically significant.

Relationship between officer age and EDR was examined. Initial MLR results were not statistically significant. Null hypothesis was not be rejected. Correlation between age at time of certification and EDR was 10%. Such low percentage is considered a weak to negligible correlation (Schober et al., 2018). Officer age was not included in the model of best fit.

Officer gender was expected to be impactful on EDR. Gender was not a statistically significant contributor to the initial MLR. Null hypothesis that there is not a statistically significant relationship between gender and EDR was not rejected. Gender was not included in the model of best fit. Small sample size of female officers is likely a methodological limitation.

Officer education level was hypothesized to be influential in EDR. Education was nearly statistically significant in the initial model. Null hypothesis that there is not a statistically significant relationship between education and EDR could not be rejected. Education was retained in the model of best fit. Officer education level was not statistically significant to the model of best fit. Null hypothesis that there is not a statistically significant relationship between education and EDR again could not be rejected.

Agency size was hypothesized to be statistically significantly related to EDR. Size was not statistically significant to the initial MLR model. Size was nearly statistically significant. Null hypothesis that there is no relationship between agency size and EDR was not rejected. Size was retained as a variable in the model of best fit. Agency size was again nearly statistically significant in the model of best fit. Null hypothesis there is no relationship between agency size and EDR was again not rejected.

Post hoc analyses consisting of ANOVA and multinomial logistic regression were conducted. Results of post hoc analyses resulted in a statistically significant relationship between agency size and EDR. Agency size was statistically significant as a continuous variable. ANOVA results indicated EDR for large agencies differed from smaller agencies. Multinomial logistic regression results indicated officer misconduct for large agencies occurred later than for smaller agencies.

A larger sample of agencies is needed to further validate predictive validity for this model. Sample size included for the full model is adequate. Conclusions drawn from this model are valid. Larger sample size would allow for development of a partitioned model. Data partition of larger sample size would allow for development of a more robust ML model. Additional classification models may prove to be superior for predictive validity when constructed using more data.

Overall results of this analysis indicate that ethical drift occurs differently for officers in larger agencies. Officers in larger agencies were associated with later incidents of EDR. Officers with higher education may be more resistant to ethical drift. Findings can be utilized by agency leaders in selection of new officer candidates. It can also be

used to potentially predict which officers in their employ are at risk for misconduct as a result of ethical drift. Further exploration into organizational differences between large and small agencies may lead to insight regarding differing rates of EDR. Differences in culture, pay, structure or other may be contributory to slower EDR.

Chapter 5 is a conclusionary synopsis of this analysis. Limitations for the current study are discussed. Recommendations for future research based upon these findings are provided. Importance of ML as a tool for law enforcement leadership and policy makers is outlined. Application of findings to positive social change, theoretical implications, and practice implications are discussed in detail. Reinforcement of ethics as a tenet for successful law enforcement agencies is provided. Key study takeaways are provided in the concluding discussion.

Chapter 5

The purpose of this study was to investigate Sternberg's (2012) concept of ethical drift within a law enforcement context. A quantitative analysis of common factors and their predictive validity relative to ethical behavioral outcomes for police officers was conducted to explore potential predictors of ethical drift. The societal importance for police behavior is of high concern and currently garners significant media attention (Intravia et al., 2017). A better understanding of factors that contribute, predict, or prevent police misconduct is needed for effective counter-drift policy development (Hendrix et al., 2018).

A total of 143 police disciplinary records from 27 central Florida law enforcement agencies were examined to investigate relationships between officer age, officer education, officer gender, agency size, and EDR. An MLR model was constructed to develop the initial ML algorithm (see Çelik, 2018). Model of best fit was determined according to statistical significance and effect size. An ML algorithm was constructed and utilized to test the efficacy of the predictive model. ML model of best fit was then applied to a test data set.

Key findings were centered around the relationship between common law enforcement factors and police misconduct. Common factors were at individual officer and agency levels. Findings for RQ1 pertained to the relationship between officer age and EDR. Officer age was not found to be predictive of EDR. RQ2 was centered on the relationship between gender and EDR. Officer gender was not a statistically significant predictor of EDR. RQ3 was formulated to address the relationship between officer

education and EDR. Officer education level was shown to be correlated with later onset of ethical drift. Education was not predictive of EDR. RQ4 was designed to address the relationship between agency size and EDR. Agency size, when applied as a categorical variable, was not found to be a valid predictor of EDR. Agency size as a continuous variable was utilized in post hoc analyses.

Post hoc ANOVA and multinomial logistic regression were utilized to investigate predictability for EDR as a function of agency size (see Szabo, 2018). Agency size data were applied as a continuous variable. Agency size was found to be a statistically significant predictor for average EDR. Officers of larger agencies were more likely to experience slower EDR. Officers of small- and medium-size agencies were found to experience more rapid EDR.

The resultant predictive model was a useful tool for predicting potential onset of ethical drift. Multinomial logistic regression was utilized as a predictive classification model. Findings indicated that officers in large agencies were more likely to experience ethical drift after approximately 12 years of service. Officers in smaller agencies were more likely to experience ethical drift before approximately 12 years of service. Findings are recommended to be validated with a larger sample size.

Interpretations and Findings

Previous research efforts have established officer age as a factor in behavior (Ouellet et al., 2019; Silver et al., 2017). Younger officers have a more aggressive outlook on policing (Mangels et al., 2020; Ouellet et al., 2019). Younger officers are susceptible to indoctrination into police culture (Rosenbaum & McCarty, 2017; Silver et

al., 2017). Older officers are subject to burnout (Violanti et al., 2018). Older law enforcement officers are less likely to seek professional help for job-related stress (Saunders et al., 2019).

Officer gender is correlated with differing behavioral outcomes in law enforcement (Beagley et al., 2018; Chitra & Karunanidhi, 2018). Female officers are physically less aggressive than their male counterparts (Huff et al., 2018; Ouellette et al., 2019). Male and female officers experience work-related stress similarly. However, causes of stress differ among the sexes (Duxbury & Halinski, 2018). Female officers are more positively received by the public (Barnes et al., 2017; Mbuba, 2018). Female officers tend to have less ambitious career goals.

Police officers with higher education tend to be more successful (Fox et al., 2018). College major is not predictive of success within the law enforcement profession (Marciniak & Elattrache, 2020). Attainment of a college degree is correlated with higher cultural tolerance and professional competence (Cordner, 2019). Officers with a college education are more likely to be career minded, which may lead to an increase in proactive policing (Rosenfeld et al., 2018). Officers with an advanced education may leave law enforcement as a result of having additional career opportunities (Bell, 2017).

Agency size is correlated with differences in work experiences for law enforcement officers (Cordner, 2017; Warner, 2018). Officers of larger agencies experience more organizational stress (Warner, 2018). Police in larger agencies are more negatively perceived by the communities they serve (Huff et al., 2018). Relative rates of

police misconduct are typically lower in larger agencies (Huff et al., 2018). Blue wall culture is more commonplace in larger agencies (Silver et al., 2017).

A quantitative analysis was appropriate to investigate potential predictive validity of officer age, education, and gender and agency size on EDR. Development of study research questions was to establish specific goals for investigating the relationships between these common factors and EDR. Regression and ML techniques are established methods for investigating predictive capacity of IVs on a DV (Çelik, 2018). The conceptualization of ethical drift in temporal units allowed for quantitative analysis. A better understanding of the interplay between study IVs and DV was achieved with regression analyses.

Age was not a reliable predictor for the rate at which an officer experiences ethical drift. Younger officers behave differently from their older counterparts as it relates to law enforcement duties (Ouellet et al., 2019; Silver et al., 2017). However, age at which a person becomes an officer was not found to indicate how fast they experience ethical decline. The correlation between officer age and EDR was only 10%. Younger officers are behaviorally different, but this difference is not manifested in EDR.

Gender was not found to be a valid predictor of EDR. The small sample size may have had an impact on this finding. There were 130 males in the study and only 13 females. This disproportionate sample size was representative of overall law enforcement demographics. Females currently constitute approximately 11% of all law enforcement officers (Shjarback & Todak, 2019).

Female officers have been shown to underreport colleague misconduct at a similar rate with male officers (Westmarland & Rowe, 2018). Female officers have been shown to make different arrest decisions than their male counterparts (Barnes et al., 2017). One such difference is found in domestic violence arrest decisions (McPhedran et al., 2017). Female officers are more likely to arrest in domestic violence cases (McPhedran et al., 2017). Female officers may engage in different policing styles. Female officers' overall ethical views do not appear to differ significantly from males.

Analysis resulted in a finding of no predictive value for education relative to EDR. An increase in education level did correlate with higher EDR. However, mean differences for EDR were not statistically significantly different between education levels. Officers experienced later onset of EDR as they attained higher education levels. Later onset of EDR is indicative education may be a buffer against ethical drift.

Agency size was found to be a statistically significant predictor of EDR. Officers of larger agencies experience EDR at a slower pace. There are multiple possible reasons for a delay in EDR for officers of larger agencies. Larger agencies often have higher starting pay levels (Holmes et al., 2017; Silver et al., 2017). Higher pay may be enticing for higher qualified candidates who are more resistant to ethical drift. Larger agencies are also likely to have more resources that allow for more advanced training and internal control mechanisms such as an internal affairs division (Silver et al., 2017). Advanced training and internal control mechanisms may be helpful in reducing ethical drift.

Officers of larger agencies are more likely to use force and engage in misconduct (Silver et al., 2017). There are more officers in larger agencies who field more calls for

service. Larger agency populations result in an increased number of contacts with citizens. It is logical to expect a higher number of incidents. Frequency of misconduct is not parallel to EDR. Incidents of misconduct in larger agencies may still occur at a later point in an officer's career.

Police officers with documented misconduct incidents are not likely to make up a large percentage of total officers. Approximately 1% of officers from Florida police departments or sheriff's offices have documented disciplinary records with the CJSTC. Incidents of misconduct are not likely representative of law enforcement as a whole. However, the relatively small number of misconduct incidents result in significant harm to law enforcement legitimacy (Demir, 2020). The law enforcement community is not able to separate themselves from police officers who commit violent attacks on citizens. Police are defined by this extreme few in the public eye.

Police are not without culpability for the current legitimacy crisis. Lack of transparency and widespread inability to effectively self-govern are factors (Maskaly et al., 2017). Blue wall culture is associated with a myriad of misconduct and public perception issues (Silver at al., 2017). Recent incidents involving use of force have reinforced public disdain for police (Celestin & Kruschke, 2018; Ouellette et al., 2019). Ongoing public skepticism regarding use of force and general treatment of members of minority groups is not being adequately addressed (Szetela, 2020).

Imbalanced media coverage of police incidents contributes heavily to public perception (Graziano & Gauthier, 2018; Miethe et al., 2018). Media sensationalism is a long-standing phenomenon (Graziano & Gauthier, 2018). Any expectation for media

outlets to not engage in sensationalism is likely unrealistic. Police officers should expect their every interaction with the public to be video recorded and subsequently disseminated. Officers should understand they do not have the public's benefit of doubt. Officers should approach every call for service with maximum professionalism. Maximized professionalism could lead to a positive reduction in negatively publicized incidents.

Advanced data science methods such as ML can be applied across several aspects of law enforcement. Selection, training, retention, and promotion of personnel based on unbiased and empirically supported evaluations will ensure fairness. Statistical models backed by validation practices can be used to establish predication for investigations and support in developing probable cause. Sophisticated data science methods will be attractive to educated and talented candidates. Outlier, trend, and anomaly detection algorithms can be used to detect biased policing patterns (Orellana & Cedillo, 2019).

Most police officers enter law enforcement as ethical citizens (Garb et al., 2018). Subsequent exposure to pressures along two separate paths can result in an officer's diminished concern for ethical policing. Organizational stressors combined with occupational stressors can take a significant toll on an officer's world view (El Sayed et al., 2019). Behavioral manifestation of this toll is ethical drift. Each individual officer experiences variations from both organizational and occupational stress (Peterson et al., 2019; Warner, 2018). Each individual officer responds differently to this stress (Violanti, 2018).

Solidarity among police officers is often cited as a cause for blue wall culture (Donner et al., 2018; Thomas & Tufts, 2019). Development of blue wall culture is likely an inevitable phenomenon. A certain amount of esprit de corps is not only inevitable but is also beneficial. Reliance and trust among colleagues are psychological safety nets for officers. Blue wall culture becomes a malignant force against ethical policing in agencies where command-level police leadership fails to enforce ethics (Donner et al., 2018; Rosenbaum & McCarty, 2017).

The nature of police work will always be stressful (Torres et al., 2018; Violanti et al., 2017). Police officer misconduct leads to increased occupational stress because it promulgates public cynicism, political backlash, and violence against officers (Torres et al., 2018). Law enforcement leaders who employ more ethical officers will experience lower levels of occupational stress. There are many variables that predict success in law enforcement at individual and organizational levels (Cordner, 2017; Huff et al., 2018). Police leadership will better staff their agencies with use of predictive models as aids in personnel decision-making.

The culture of an individual police organization is a key factor for police misconduct (Cordner, 2017). Police leadership is responsible for the conduct of their officers. Law enforcement leadership will benefit from understanding that politicians will say and do what is politically expedient to get elected. Media will disseminate unfair and distorted versions of officer-involved incidents. Citizens' beliefs will be affected by media portrayals of such incidents (Graziano & Gauthier, 2018). The manner in which

police officers respond to every call for service will be what determines an agency's legitimacy.

Misconduct incidents are less likely to result in formal punishment for officers of larger agencies (Silver et al., 2017). Incidents involving use of force or misconduct that do not result in formal punishment will not be contributory to ethical drift data. A lack of records may function to mask actual EDR in larger agencies. Validity of citizen complaints as a correlate to misconduct is potentially confounding. Officers in larger agencies may experience a higher number of invalid complaints.

Blue wall culture is more prominent in larger agencies (Silver et al., 2017). Hierarchical distance between lower and higher-ranking officers is permissive of subculture development. Blue wall culture among rank and file officers may result in fewer documented incidents misconduct (Donner et al., 2018; Foust, 2018). Fewer documented incidents would have an impact on the accuracy of measuring ethical drift. Results indicate a discrepancy for EDR between larger and smaller agencies. Results are not indicative of a causal mechanism for such discrepancies.

Recent publicized police shootings often involved active criminal activity at time of incident or immediately prior (Worden & McClean, 2017). Public opinion over fault for the shooting is divided. Many blame police, while others point out the victim's criminal activity as cause. There is considerable merit to both points of view. The result of a violent police interaction with criminal suspects is undeniably chaotic. It is the responsibility of police to navigate difficult situations.

Limitation of the Study

Data collected included only records for officers who had documented ethical offenses. Findings offer no insight relative to officers of agencies that do not commit ethical offenses. Predictive efforts will be hampered without information on base rate of occurrence. Police officers of larger agencies engage in more misconduct proportionally (Silver et al., 2017). A fully predictive model can be further developed with a proportional understanding of ethical drift.

Data quality from official records is an inherent limitation to quantitative analysis. Analysis was conducted primarily on data obtained from the CJSTC. Records for officer education were obtained from individual agencies. Law enforcement agencies may not report disciplinary data to the FDLE at a constant rate. Reporting differences may lead to disproportionate representation for agencies of varying demographics in the CJSTC database.

Generalizability of the post hoc analysis is a potential limitation. Proposed study design was centered on individual officer records. Many of these officer records were obtained from the same agency. Post hoc analysis included only 27 agencies. Replication of this study, specifically the post hoc analysis, with data from more agencies may yield more robust results.

Ethical drift was measured using only known disciplinary actions as recorded in official records. An inherent limitation exists regarding the capturing of time-sensitive data as it relates to official records. Officers may have begun committing ethical violations that were not detected. Timeline of drift may not be accurately analyzed due to

the variable nature associated with formal disciplinary records. Timeline inaccuracies are expected to be minimal.

Sample sizes for key variables were fairly inconsistent. There were a small number of female officers included. Records for only 13 female officers does not adequately provide enough information to draw conclusions regarding different gender outcomes. Small and medium agency records differed greatly in number from that of larger agencies. A disparity is logical considering larger agencies have more officers and were expected to be overrepresented. Difference in sample size among the agency sizes is a limitation and threat to internal validity. Sample size difference was not a limitation in the post hoc analysis.

Recommendations

Quantitative analyses are useful to make predictive models and illuminate relationships among variables (McKechnie & Fisher, 2020). Future research conducted with larger sample sizes may yield reliable results for development of predictive models. Larger sample sizes of key variables will reduce error margins and provide robust confidence intervals (McKechnie & Fisher, 2020). More robustly supported findings are superior for generalizability. Development of future predictive models may provide superior insight when constructed with sufficient sample sizes.

Hierarchical models may be useful due to the nested nature of study data. Officers are naturally nested within agencies. Multilevel modelling is an effective quantitative method for investigating such data (Berta & Vinciotti, 2019). Multilevel modelling is

effective for investigating organizational variables. A multilevel approach may result in insight not captured in this analysis.

Analysis results were not statistically significant for education as a function of EDR. There was a general trend toward later onset EDR among officers who had higher education. Higher education has been correlated with many positive life outcomes across multiple professions (Griffin & Sun, 2017). Education levels may generalize as a buffer against misconduct (Griffin & Sun, 2017). Impact of education on EDR is worthy future study.

An alternate predictive logistic regression model may provide superior predictability. Binomial logistic regression is used to predict binary outcome as a result of single or multiple predictors (McKechnie & Fisher, 2020; Szabo, 2018). Separation of medium agencies was not predictive for this model. Future research may provide superior predictive results with binomial logistic regression model in which medium and small agencies are combined into a single category.

Future study efforts on ethical drift in law enforcement may benefit from including severity of offense. Design of the current study was not constructed to address offense severity. Additional research regarding the severity of offense may provide significant insight into EDR as a law enforcement phenomenon. Research on offense severity may aid in future ML algorithm construction. Knowledge over which officers commit serious offenses holds potential for advancement of ethical drift study.

Police misconduct along racial lines is of significant societal interest (Lacoe & Stein, 2018). Law enforcement and race are currently at the forefront of American media

attention. Future research into ethical drift and treatment of minorities is a logical next step. Biased or unfair treatment of citizens on the basis of immutable traits is highly unethical (Foust, 2018). ML algorithms utilized to potentially predict officers who engage in biased policing will reduce future racially motivated incidents and provide reassurance for minority communities.

An emphasis on police ethics is currently of immense public interest. Police misconduct along individual officer lines and organizational structural components has been the topic of considerable research (Cordner, 2017; Hoggett et al., 2018). The current law enforcement legitimacy crisis is worsening as a result of multiple highly publicized police shootings (Demir et al., 2020; Worden & McClean, 2017). Inclusion of modern predictive analytics by agency leaders to assist in preventing officer misconduct is timely, necessary, and relevant. Further development of predictive models using ML would benefit agency leaders, communities, and police officers.

Additional research efforts focused on law enforcement militarization and legitimacy may provide further insight into the discord between citizens and police. Police militarization is currently a common theme among researchers (Moule et al., 2018; Roziere & Walby, 2017). Police militarization has been correlated with increases in operational efficacy (Moule et al., 2018). Fears of police militarization have been found in communities nationwide (Roziere & Walby, 2017). Officers in SWAT teams and other militarized units may experience ethical drift differently than their peers as a result of the unique role they perform.

Forensic psychology will benefit from inclusion of data science methods. Studies conducted with contemporary data science methods are more easily replicated due to modernized workflow processes. Data science methods include the use of many basic and advanced statistical methods (Betz et al., 2020). Social sciences researchers currently utilize multiple advanced statistical and research methods (Wang & Zhang, 2020). Efficacy of these statistical methods is enhanced with modern computing capabilities.

Popular and highly effective data science tools such as R programming language are currently utilized broadly within social sciences (Myint et al., 2019). ML algorithms are useful for research validation and replication (Abubakar et al., 2019). The field of psychology has recently been scrutinized for reproducibility and replicability shortcomings (Świątkowski & Dompnier, 2017). Inclusion of proper data workflow management commonplace in data science is a needed addition to forensic psychology research for ensuring reproducibility (Kumar et al., 2019).

Implications

Discord between law enforcement and society are a core issue in contemporary America (Foust, 2018; Lacoe & Stein, 2018). An ethical police force is necessary to begin restoring police legitimacy and reestablishing cooperation with citizens (Lacoe & Stein, 2018). Police officers may enter the law enforcement profession as ethical, well-meaning individuals. Police experiences may have a negative impact on an officer's attitude and disposition toward the public (Violanti et al., 2018). Analysis results are potentially helpful to identify officers at risk of becoming unethical. Results are a starting

point for future research to develop knowledge and practices that reduce or prevent ethical drift in law enforcement.

Ethical drift within a law enforcement context was analyzed relative to commonplace factors among police. Subsequent analyses resulted in a better understanding of the potential impact an agency and possibly education level may have on officer ethical drift. Delayed onset of EDR was found to be correlated with larger law enforcement agencies. Later incidents of ethical drift correlated with higher education levels to a nearly significant degree. The differences between larger and smaller agencies for EDR is evident at approximately 12 years of service. Officers in larger agencies did not typically display evidence of ethical drift prior to the 12-year mark. Officers of smaller agencies were found to engage in misconduct earlier in their careers.

Overall findings are suggestive that officers in smaller departments with lower education levels are more susceptible to misconduct. Smaller agencies have fewer resources (Silver et al., 2017). Emphasis on recruiting police candidates that have college education and are interested in furthering their higher learning may be a beneficial step to preventing ethical drift. A possible pitfall associated with this approach is pay deficiency (Bell, 2017; Peltier-Rivest, 2018). Small agencies typically operate with smaller budgets, which may make attracting qualified candidates more difficult.

Positive Social Change Implications

There are several implications for positive social change from achievement of an ethical police force. Mistrust for police is common in many communities across the United States (Lacoe & Stein, 2018). The current law enforcement legitimacy crisis may

be worsening (Demir et al., 2020). These findings may be applied to agency policies and training. Development of an empirical methodology for identifying officers at risk and conditions in which EDR is accelerated will provide a tool to reduce police misconduct.

Trust between law enforcement and the communities they serve will improve with application of study findings. A trusting relationship with law enforcement will benefit communities in staying safe. Communities cannot thrive without protection from harmful criminal elements (Kochel, 2017). Citizens in communities that have low trust for police experience higher levels of vulnerability to criminal activity. Police and citizens will begin to foster a cooperative relationship with the restoration of trust.

Citizens who trust police are more likely to call for assistance when necessary (Namgung, 2018). Cooperation between police officers and communities is necessary for safer neighborhoods (Namgung, 2018). Citizens are less likely to call police for assistance when they do not trust law enforcement (Kochel, 2017; Metcalfe & Pickett, 2018). Citizen reluctance to utilize police services leads to criminal opportunities. Crime flourishes in the absence of law and order (De Nadai et al., 2020; Mourtgos et al., 2018).

Detection and prevention of ethical drift will improve officer retention. Retention of qualified police officers is a benefit to communities. Police officers who have positive relationships with the communities they serve tend to experience longer careers (Schuck & Rabe-Hemp, 2018). Officers who are content with their careers are more likely to have a positive outlook toward citizens (Schuck & Rabe-Hemp, 2018; Violanti et al., 2018). Tenured officers are more effective at gaining trust of the public and are less likely to experience burnout (Violanti et al., 2018).

Law enforcement leaders can promote a professional image to the public by embracing unbiased and modern strategies of self-governance. Police agencies can signal to the public that they are agreeable to progress by utilizing contemporary data science methods such as ML (Agapitos et al., 2019). A willingness to evolve can impress upon the public that an agency is not opposed to progress. Cooperative progress can reduce public perceptions of blue wall culture. Progress can improve citizen trust of law enforcement.

Police agencies that utilize modern data science methods are likely to be attractive to highly qualified candidates. Data science is one of the fastest growing and most in-demand professions globally (Lin, 2017). Younger people tend to hold negative views of law enforcement (Kochel, 2017). Applicants for police jobs are diminishing in number (Inwald & Thompson, 2020). Qualified police officers are leaving the profession as a result of the current social climate (Bell, 2017). Modernization of the police force to attract new and qualified candidates should include a data science component. Agency leaders who apply ML and other data science techniques to combat ethical drift will be signaling they are contemporary.

Theoretical Implications

Prior researchers have focused heavily on police stress and psychological burnout (Saunders et al., 2019; Violanti et al., 2018). Blue wall culture has been shown to have negative outcomes for police ethics (Silver et al., 2017). Ethical drift is different from these concepts (Sternberg, 2012). Stress, burnout, and culture are all potential contributors to ethical drift. Ethical drift begins to manifest as behavior once an officer

experiences a diminished concern for ethical policing. A psychological inflection point can occur due to an amalgam of stress, burnout, organizational culture, repeated negative interaction with the public, or many other reasons.

The study of change in behavior by police officers after entry into law enforcement will provide a stronger ethical drift understanding. Ethics in policing is a unique phenomenon different from that of corporate settings. Police officers often overcommit to their profession with consequences (Griffin & Sun, 2017; Schaible, 2018). Burnout and stress are common results of overcommitment. Ethical drift is a behavioral consequence.

Ethical drift is a theoretical approach to identifying the common elements present in an officer's life prior to unethical behavior. Unethical behavior is an outcome of drift. An understanding of the processes preceding unethical behavior is a necessary step for misconduct prevention. An understanding of ethical drift precedents is not sufficient to prevent misconduct. Application of practices that allow police leaders and officers themselves to recognize ethical drift symptoms early on is key for preventing ethical misconduct.

Practice Implications

Ethical drift is a unique concept for agency leaders to address officer misconduct. Agency leaders will benefit from knowledge of what ethical drift is and how it occurs. Knowledge of ethical drift will allow leadership to develop practices for combatting an ethical decline in their police force. Agency leaders can be proactive in preventing misconduct with adoption of a counter-drift philosophy. A proactive approach is needed,

as a single incident of police misconduct has widespread individual and social consequences (Mummolo, 2018).

Future research efforts on police behavior should include ethical drift. Literature on the change in ethical outlook for police officers subsequent to policing exposure is currently lacking (Silver et al., 2017; Westmarland & Rowe, 2018). Study of what causes police officers to ethically morph over time is imperative for efforts to curb police misconduct. Psychological underpinnings present in officers who experience ethical drift can be explored. Additional research across larger samples would validate the results and potentially culminate in a stronger understanding of law enforcement ethical drift.

Differentiation in EDR among agencies of differing sizes are evidence against a uniform approach to preventing ethical drift. Small and medium sized agencies experienced an earlier onset of ethical drift than their larger counterparts. Such differentiation is potentially due to culture. Smaller agencies typically have fewer resources (Giblin & Nowacki, 2017). Small agencies offer lower starting pay and may not have as many possible career paths (Giblin & Nowacki, 2017). Such deficiencies may be contributory to early onset ethical drift.

Conclusion

Police officer ethical behavior is currently core to the current national discussion (Demir et al., 2020; Drakulich et al., 2020). Police misconduct, especially incidents involving use of force, has been the catalyst for several recent protests and riots (Gau & Paoline, 2020; Kearns et al., 2020). Highly publicized fatal and near fatal use of force incidents have led to large-scale protesting in many cities across the country. Citizens and

politicians are demanding police reform. There are rampant calls to defund law enforcement across the nation.

Current legitimacy crises faced by law enforcement has garnered attention from worldwide political leaders and sports superstars. Collective worldwide interest in American policing is unprecedented. Public response to recent police killings has transformative implications for police and society. Ethical policing is currently in high demand. Proactive measure to ensure police misconduct is being appropriately addressed is a reassuring measure for a distrusting public.

Police officers face the untenable situation in which responding to any call may result in their vilification. Rise in anti-police sentiment has led to a declining public trust and increased de-policing (Nix et al., 2018; Tankebe, 2019). Police officers are reporting lower job satisfaction (Ahmad et al., 2019). Officers with other career options are leaving law enforcement (Bell, 2017; Silver et al., 2017). Prospective college students are losing interest in becoming a police officer (Morrow et al., 2019).

Continued negative media coverage and a hostile public combined with inimical political leaders have significantly impacted the law enforcement work environment (Inwald & Thompson, 2020; Morrow et al., 2019). Protests and public hostility toward law enforcement are deterrents for highly qualified police officers to remain in law enforcement (Bell, 2017). The real possibility of losing qualified police officers and not replacing them with similarly qualified candidates leads to a paradoxical outcome. Quality policing will decline in a situation where lesser qualified police officers comprise larger proportions of law enforcement. A result of society turning on police officers for

what is perceived as law enforcement performing poorly is potentially a worse performance, as only lesser qualified candidates and officers will be remain (Inwald & Thompson, 2020).

Officers and communities must overcome a significant distrust to repair their relationships (Huff et al., 2018; Tankebe, 2019). Ethical police forces will gradually regain community trust (Kochel, 2017). The onus is on law enforcement to produce a professional product. An approach of police as victims is not productive. Law enforcement leadership will benefit from assuming accountability and ownership for their current predicament and taking proactive measures to remedy.

Agency leadership would benefit from reestablishing a viable relationship with the communities they serve. Effective and demonstrable methods of identifying ethical drift and preventing it from being manifested in unethical officer behavior is a significant opportunity for agency leaders. Results are indicative that ethical drift is quantitatively identifiable. Additional research with use of advanced data science techniques may help further risk factor identification. ML algorithms are used to commonly solve complex scientific problems (Agapitos et al., 2019). Law enforcement can benefit from the use of these algorithms to combat and prevent police officer ethical drift.

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Appendix A: Criminal Justice Standards and Training Commission's Moral Character Definitions

11B-27.0011 Moral Character.

(1) For the purpose of certification, employment, or appointment, pursuant to procedures established by paragraph 11B-27.002(1)(g) and rule 11B-27.00225, F.A.C., the employing agency is responsible for conducting a thorough background investigation to determine the moral character of an applicant, pursuant to section 943.13(7), F.S.

(2) The unlawful use of any controlled substances pursuant to rule 11B-27.00225, F.A.C., by an applicant for certification, employment, or appointment, at any time proximate to the submission of application for certification, employment, or appointment, conclusively establishes that the applicant is not of good moral character pursuant to section 943.13(7), F.S. The unlawful use of any controlled substances specified in rule 11B-27.00225, F.A.C., by an applicant may or may not conclusively establish that the applicant is not of good moral character pursuant to section 943.13(7), F.S., depending upon the type of controlled substance used, the frequency of use, and the age of the applicant at the time of use. Nothing in this rule chapter is intended to restrict the requirements of section 943.13(7), F.S., to controlled substance use only.

(3) Upon written request and submission of materials, the Commission shall evaluate the qualification of an applicant to determine compliance with "good moral character" pursuant to this rule section. Written materials submitted to the Commission upon request for reinstatement of certification shall include, if available, all prior Commission disciplinary records, agency disciplinary records, victim statement(s), or citizen input. The Notice of Petition for reinstatement shall be published in the Florida Administrative Register or in the jurisdiction of the petitioning agency.

(4) For the purposes of the Criminal Justice Standards and Training Commission's implementation of any of the penalties specified in section 943.1395(6) or (7), F.S., a certified officer's failure to maintain good moral character required by section 943.13(7), F.S., is defined as:

(a) The perpetration by an officer of an act that would constitute any felony offense, whether criminally

prosecuted or not.

(b) Except as otherwise provided in section 943.13(4), F.S., a plea of guilty or a verdict of guilty after a criminal trial for any of the following misdemeanor or criminal offenses, notwithstanding any suspension of sentence or withholding of adjudication, or the perpetration by an officer of an act that would constitute any of the following misdemeanor or criminal offenses whether criminally prosecuted or not:

1. Sections 316.193, 327.35, 365.16(1)(c), (d), 414.39, 741.31, 784.011, 784.03, 784.047, 784.048, 784.05, 784.049(3)(a), 784.046(15), 790.01, 790.10, 790.15, 790.27, 794.027, 796.07, 800.02, 800.03, 806.101, 806.13, 810.08, 810.14, 812.014, 812.015, 812.14, 817.235, 817.49, 817.563, 817.565, 817.61, 817.64, 827.04, 828.12, 831.30, 831.31(1)(b), 832.05, 836.12(2), 837.012, 837.05, 837.055, 837.06, 839.13, 839.20, 843.02, 843.03, 843.06, 843.085, 847.011, 856.021, 870.01, 893.13, 893.147, 901.36, 914.22, 934.03, 944.35, 944.37 and 944.39, F.S.

2. Any principal, accessory, attempt, solicitation, or conspiracy, pursuant to chapter 777, F.S., which had the crime been committed or completed would have been a felony offense; or

3. The perpetration of an act in any jurisdiction other than the State of Florida, which if committed in the State of Florida would constitute any offense listed in this rule section.

(c) The perpetration by an officer of acts or conduct that constitute the following offenses:

1. Excessive use of force, defined as a use of force on a person by any officer that is not justified under section 776.05 or 776.07, F.S., or a use of force on an inmate or prisoner by any correctional officer that would not be authorized under section 944.35(1)(a), F.S.

2. Misuse of official position, defined by section 112.313(6), F.S.

3. Having an unprofessional relationship with an inmate, detainee, probationer or parolee, or community controllee. An unprofessional relationship is defined as:

a. Having written or oral communication with an inmate, detainee, probationer or parolee, or community controllee that is intended to facilitate conduct prohibited by this rule section; or

b. Engaging in physical contact not required in the performance of official duties, and is defined as kissing, fondling of the genital area, buttocks, or breasts, massaging or similar touching, holding hands, any other physical contact normally associated with the demonstration of affection or sexual misconduct as

applied to all certifications, which is defined in section 944.35(3), F.S.

c. Engaging in a romantic association with an inmate, detainee, probationer, parolee, or community controlee. “Romantic association” is defined as the exchange of telephone calls, pictures, letters, greeting cards, or any other form of oral or written communication, which expresses feelings or thoughts of affection or the desire to engage in a romantic relationship whether emotional or physical. This subsection shall not apply to an officer who is legally married to an inmate, detainee, probationer or parolee, or community controlee in the community, nor does it apply to any officer who has no knowledge, or reason to believe, that the person with whom the officer has engaged in a romantic association is an inmate, detainee, probationer or parolee, or community controlee.

4. Sexual harassment pursuant to and consistent with decisions interpreting 29 C.F.R. 1604.11, including unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature, when the harassment involves physical contact or misuse of official position and when:

a. Submission to such conduct is made either explicitly or implicitly a term or condition of an individual’s employment; or

b. Submission to or rejection of such conduct by an individual is used as the basis for employment decisions affecting such individual; or

c. Such conduct has the purpose or effect of unreasonably interfering with an individual’s work performance or creating an intimidating, hostile, or offensive working environment.

5. Engaging in oral, anal, or vaginal penetration by, or union with, the sexual organ of another person or engaging in anal or vaginal penetration by any other object while on duty, or at any time the officer is acting under the color of authority as a Commission-certified criminal justice officer, and not done for a bona fide medical purpose or in the lawful performance of the officer’s duty.

6. False statements during the employment application process.

7. Conduct that subverts or attempts to subvert the State Officer Certification Examination process pursuant to rule 11B-30.009, F.A.C.

8. Conduct that subverts or attempts to subvert the Basic Abilities Test process pursuant to subsection 11B-35.0011(1), F.A.C.

9. Conduct that subverts or attempts to subvert the examination process for Commission-approved training at a Commission-certified training school or an employing agency promotional examination process which shall include the following:

a. Removing from the examination room any of the examination materials.

b. Reproducing or reconstructing any portion of the examination.

c. Aiding by any means in the reproduction of any portion of the examination.

d. Selling, distributing, buying, receiving, or having unauthorized possession of any portion of a past, current, or future examination.

e. Communication with any other examinee during the administration of the examination.

f. Copying answers from another examinee, or intentionally allowing one's answers to be copied by another examinee during the administration of the examination.

g. Having in one's possession during the administration of the examination, any books, notes, written or printed materials, or data of any kind, not supplied as part of, or required for, the test administration.

h. Falsifying or misrepresenting information required for admission to the examination.

i. Impersonating an examinee.

j. Having an impersonator take the examination on one's behalf.

k. Disrupting the test administration.

l. Revealing the test questions or other information that would compromise the integrity of the examination.

10. Any overt, conspicuous, or public act of a sexual or simulated sexual nature which is likely to be observed by others.

11. Any willful and offensive exposure or exhibition of his or her sexual organs in public or on the private premises of another or so near thereto as to likely be seen except in any place provided or set apart for that purpose.

12. Willful failure of the agency administrator to comply with chapter 943, F.S., as it pertains to the Criminal Justice Standards and Training Commission or Commission rules.

13. Intentional abuse of a Temporary Employment Authorization, pursuant to section 943.131(1), F.S.

14. Misuse of Electronic Database. Willfully and knowingly accessing an electronic database within the trust of an officer, by using said database to access restricted information for an illegitimate or personal purpose with bad intent. Bad intent is evidenced by:

a. A pattern of misuse that demonstrates improper accesses or violations.

b. if the violation occurred after the officer received agency or Commission discipline for improperly accessing a computer database, or after the officer received formal training on the database(s) that includes provisions on the improper use of said database(s).

c. The existence of a current or past non-amicable or otherwise contentious relationship between the officer and the subject of the query, or when the purpose of the query is to identify person(s) linked or associated to said relationship.

d. Pre-textual queries based on age, race, sex, gender, or other personal identifying characteristics.

e. Any additional action taken by the officer as a result of the information obtained from the query, for example, retaining, copying, or reproducing the information obtained from the query, or disseminating information not listed as confidential or exempt in chapter 119, F.S., obtained as a result of the query.

15. Discriminatory Conduct:

a. The perpetration by the officer of either a course of conduct or a single egregious act that evidences discriminatory conduct based on race, color, religion, sex, pregnancy, national origin, age, handicap, or sexual orientation, which does not involve an expression of public concern, and which causes a clear and substantial belief in the mind of a reasonable person that the officer cannot perform the duties of office in a fair and impartial manner, with respect for the rights of others and laws of the state and nation; or

b. Knowingly, willfully, and actively participating in any activity committed with the intent to benefit, promote, or further the interests of a “hate group”, as defined in section 874.03(6), Florida Statutes.

c. For the purposes of this section, an expression of public concern shall mean an expression by an individual as a citizen that relates to any matter of political, social, or other concern of the community. Expressions of public concern are determined by the content, form, and context of the given act or course of conduct, viewed by the totality of the record.

(d) A certified officer’s unlawful injection, ingestion, inhalation, or other introduction of any controlled

substance, as defined in Section 893.03, F.S., into his or her body as evidenced by a drug test in accordance with section 112.0455, 440.102 or 944.474, F.S.

(5) A certified officer's failure to maintain good moral character as defined in subsection (4) of this rule section, by committing a violation involving perjury or false statement in a court proceeding, shall not include a statement which was recanted. if the violation involving perjury or false statement is alleged to have occurred in the performance of regularly required work duties or the course of an administrative or disciplinary investigation, a certified officer's failure to maintain good moral character as defined in subsection (4) of this rule section, shall not include a statement in which the officer making the statement conceded such statement to be false prior to the employing agency's conclusion of the internal affairs investigation in which the false statement related to a material fact or within 10 calendar days of making the false statement, whichever occurs first. For purposes of this subsection, the employing agency's internal affairs investigation shall be deemed to be at a conclusion upon the investigator's execution of the statement required by section 112.533(1)(a)2., F.S.

(6) The employing agency shall forward to the Commission the agency's investigative report pursuant to procedures established in rule 11B-27.003, F.A.C., when an allegation has been made that an officer has failed to maintain good moral character, as defined in subsection (4) of this rule section, and has been sustained by the employing agency, or an act of conduct by the officer has resulted in the officer's arrest. The report shall be forwarded immediately upon separation of the officer from employment, or, if the officer is not separated from employment, within 45 days from the date an allegation has been sustained, as set forth in this rule section.

(7) Commission staff's decision to initiate presentation of a case for a Commission Probable Cause Determination shall be based upon the following conditions:

(a) Whether the allegations against the officer constitute a violation of subsection (4) of this rule section or section 943.13(4), F.S.;

(b) Whether there is evidence of probable cause to support the filing of a complaint; and,

(c) Whether a Letter of Acknowledgement is warranted pursuant to subsections 11B-27.004(7)-(11), F.A.C.

Rulemaking Authority 943.03(4), 943.12(1) FS. Law Implemented 943.13(7), 943.1395(7) FS. History–New 1-7-85, Formerly 11B-27.011, Amended 7-13-87, 10-25-88, 12-13-92, 9-5-93, 1-19-94, 8-7-94, 11-5-95, 1-2-97, 7-7-99, 8-22-00, 11-5-02, 4-11-04, 11-30-04, 3-27-06, 3-21-07, 6-9-08, 4-16-09, 6-3-10, 5-21-12, 3-13-13, 5-29-14, 7-29-15, 9-4-16, 8-15-18.

Appendix B: Request for Records

To whom it may concern:

I am requesting information regarding full-time sworn Officer/Deputies of your agency for a doctoral dissertation study. For this study, the following information is needed:

1. Agency size as determined by current number of full-time sworn law enforcement Officer/Deputies, certified in the State of Florida.
2. Any and all such Officer/Deputies with a sustained formal disciplinary action documented in their personnel file. This can include, but is not limited to, Internal Affairs investigations, Supervisory counselling, and Criminal Justice Standards and Training Commission decertification. Please include if said violation was first sustained offense. if not the first sustained offense, please include date of first sustained offense.
3. Where available, any former full-time sworn Officer/Deputies in your employ from the years 2018-present with a similar formal disciplinary action.
4. Included in these records, I am requesting:
    a. Officer/Deputy date of birth or age at time of disciplinary action.
    b. Officer/Deputy education level.
    c. Officer/Deputy gender.
5. I am not requesting any personal information about the Officer/Deputy that may reveal their identity. I am requesting that personally sensitive information be properly redacted or removed prior to the record being furnished.

Please contact me if you have any questions or need any other information for the fulfillment of this request.

Thank you,

Ryan Mann

ryan.mann@waldenu.edu

386-624-3055

Appendix C: R Code for ML Algorithm

```
#Training the ML algorithm

df <- read.csv("sim_data.csv") #This loads data into R Studio


#Partitioning data into training and test sets

#load package to partition data

library(caTools)


#Set seed for randomization. This ensures same random draw every time.

set.seed(123)


#split sample

sample <- sample.split(df$drift, SplitRatio = .8)

# 80% of data used for training set

train <- subset(df,sample == TRUE)

# 20% of data used for test set

test <- subset(df,sample == FALSE)


#Build training model. Full model used for this simulation.

#model of best fit was used on real data.

mod1 <- lm(drift~age + gender + edu + size,data = train)
```

```
#run the model

summary(mod1)


#Build Prediction Model

drift.prediction <- predict(mod1, test)


#Frame the results

results <- cbind(drift.prediction,test$drift)

colnames(results) <- c('predicted','actual')

results <- as.data.frame(results)

print(head(results))# This just prints a sample of 6 results, not full list.


#build model and review performance on test data

result.mod <- lm(actual~predicted,data = results)

summary(result.mod)


#Plot results. Shaded area is standard errors (SE).

library(ggplot2)

ggplot(results,aes(x=predicted,y=actual))+

 geom_point()+

 geom_smooth(method = 'lm')
```

Appendix D: List of Included Law Enforcement Agencies

Agency:

St. Petersburg Police Department

Pinellas County Sheriff's Office

Orlando Police Department

Rockledge Police Department

Bartow Police Department

Orange County Sheriff's Office

Clearwater Police Department

Zephyrhills Police Department

Pasco County Sheriff's Office

Titusville Police Department

Dade City Police Department

Hillsborough County Sheriff's Office

Melbourne Police Department

Hardee County Sheriff's Office

Seminole County Sheriff's Office

Kissimmee Police Department

Wildwood Police Department

Longwood Police Department

Manatee County Sheriff's Office

Satellite Beach Police Department

Citrus County Sheriff's Office

Lakeland Police Department

Mount Dora Police Department

Oviedo Police Department

Ocoee Police Department

Osceola County Sheriff's Office

Casselberry Police Department

Appendix E: Predicted Versus Actual SLR Results

Sample	Predicted	Actual
7	13	22
12	9	4
19	7	4
20	14	2
21	10	25
23	10	21
28	10	18
37	13	20
43	14	7
47	14	5
52	10	3
62	9	11
76	10	10
92	10	12
93	7	24
99	14	8
101	7	6
108	13	4
110	14	17
115	10	9
119	10	25
122	10	11
123	10	14
124	10	13
126	10	3
127	8	13
129	12	7
139	14	1
143	14	9