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AN INQUIRY INTO THE NUMBER OF TRAFFIC TICKETS ISSUED AND
IMPLICATIONS FOR AFRICAN AMERICANS MOTORISTS

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the
Degree Doctor of Philosophy in the Graduate School of
Texas Southern University

Casey J. Davis, B.A., M.Ed.

2022

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AN INQUIRY INTO THE NUMBER OF TRAFFIC TICKETS ISSUED AND
IMPLICATIONS FOR AFRICAN AMERICANS MOTORISTS

By

Casey J. Davis, Ph.D.

Texas Southern University, 2022

Interim Chair/ Associate Professor David N. Baker, Advisor

The purpose of this study was to examine the impact of race and gender disparities in police traffic stops as they relate to the number of tickets issued, number of consent searches, and number of arrests of traffic violators in the southern region of Texas, Harris County. The research will further shed light on how implicit bias affects police discretion and provide implications for police officers.

This research will bring attention to the sanction disparity and examine the relationship between race and gender in motorist outcomes at the conclusion of traffic stops. The data for this research was conducted from secondary data obtained from Texas Commission on Law Enforcement (TCOLE) annual reporting and the Houston Police Department. The sample consisted of 21 Texas Law Enforcement Agencies in the Houston metropolis area of the state of Texas, Harris County. This included Law Enforcement Agencies from college/university police departments, Houston Police Department, Harris County Constables Offices, Harris County Sheriff's Office, and Independent School District Police Officers. To specifically focus on implicit bias and

Police discretion, an exhausted review of the literature was conducted. Further analysis examined implicit bias specified in the study as it relates to the use of discretion by police officers when contacting African American men and women in the southern region of Texas Harris County. The Standard Multiple Regression procedures including the multiple correlation procedure were used to test the aforementioned hypotheses. All hypotheses were tested at the .05 level or better. One of the most surprising findings of the current study was the significantly predictable relationship between racial variables (number of African Americans, number of Asians, number of Hispanics and other racial group violators) and the number of arrests given by officers associated with Texas Law Enforcement Agencies. The five racial variables were found to be significant linearly related to the number of tickets issued by officers of Texas Law Enforcement agencies.

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VITA

| | |
|-----------------------|---|
| 2003..... | B.A. University of Houston Downtown Houston, TX |
| 2004..... | Texas Basic Peace Officer License |
| 2012..... | M.Ed. University of Houston Victoria Victoria, TX |
| 2008-12 | Harris County Precinct 4 Constables Office, Deputy Constable Spring, TX |
| 2012-18 | Cypress Fair-Banks ISD Police Department, Lieutenant, Emergency Manager Cypress, TX |
| 2017..... | Leadership Command College, Class Law Enforcement Management Institute of Texas Texas A&M University, Texas Woman’s University Sam Houston State University |
| 2018 to present | University of Houston Downtown Police Department, Chief of Police Houston, TX |
| Major Field..... | Administration of Justice |

DEDICATION

To my wife, Dr. Kewana Marsha Davis. Since high school you have inspired me to walk with you on this life's journey. You have always been an excellent example of what a lifelong learner is and have consistently challenged me to excel. You are my friend, mentor and muse. Thank you. I would not have accomplished this goal without your support.

Your favorite student,

Casey

ACKNOWLEDGEMENTS

**Romans 11:36 – For from Him and through Him and to Him are all things. To Him
be the glory forever. Amen.**

CHAPTER 1

INTRODUCTION

“Police are the most visible symbol of governmental authority in our country. There are numerous federal, local, and state agencies, which vary in size and are bureaucratic and quasi-military in structure” (Gabbidon, & Greene, 2013, p. 104). Police officers in this country are tasked with protecting people and property on daily basis. Police patrol assigned areas, respond to dispatch calls, issue citations, enforce the law, make arrests, and periodically testify in court. In the performance of the aforementioned duties, police officers must make multiple judgment calls, which may dramatically affect the citizens they meet while doing their jobs. “In municipal agencies, the police role consists primarily of maintaining the social order, preventing, and controlling crime, and enforcing the law. Gabbidon & Greene, (2009) postulate that police are responsible for social control, have a considerable amount of discretion (decisional latitude), and are authorized to use force in the performance of their duties”. The multiple judgment calls that an officer is required to make daily are governed by discretion. These judgment calls made at the officer’s discretion could be influenced by the officer’s implicit biases.

Implicit bias is a positive or negative mental attitude towards a person, thing, or group that a person holds at a subconscious level (*Understanding Implicit Bias*, 2015). There are certain instances where the law must be followed to the letter and the officer has no choice but to enforce it regardless of their opinion or agreement to the fairness of

the law. However, there are a vast majority of the decisions that police officers make daily that are governed by that officer's discretion.

This research begins by defining implicit bias and discretion, followed by how both relate to a police officer's interactions with violators and will conclude with recommendations for reducing the negative effects implicit bias has on discretion. In other words, how police discretion is applied to various violators, while accounting for implicit bias, by 21st century police officers in Texas to complete lawful objectives during traffic stops. "Implicit bias refers to the attitudes or stereotypes that affect our understanding, actions, and decisions in an unconscious manner. These biases, which encompass both favorable and unfavorable assessments, are activated involuntarily and without an individual's awareness or intentional control" (Understanding Implicit Bias, 2015).

Nosek, Smyth, Hansen, Devos, Lindner, Ranganath, Smith and Olson (2007) stated that one of the most comprehensive investigations of implicit social cognitions (i.e., attitudes and stereotypes) has been that of Project Implicit begun in 1998, first through Yale University and now hosted by Harvard (p. 2). The heterogeneous sample collected for the implicit, explicit, study, between 2000 and 2006 results were based on 2.5 million participants across 17 topics. Research study findings found that "implicit preferences and stereotypes are pervasive across demographic groups and topics and also found variations in gender" (Nosek, et.al, 2007, p.37).

What is discretion? According to Davis (1969) in *Discretionary Justice: A Preliminary Inquiry*, a public officer has discretion whenever the effective limits on his power leave him free to make a choice among possible courses of action or inaction

(Davis, K. C., 1969, p. 178). “Some elements of this definition need special emphasis. Especially important is the proposition that discretion is not limited to what is authorized or what is legal but includes all that is in “the effective limits on the officer’s power. This phraseology is necessary because a good deal of discretion is illegal or of questionable legality” (Davis, K. C., 1969, p. 178).

Police officers use this discretion in the performance of their duties daily. This research examined the relationship between police discretion and implicit bias. “Implicit biases (e.g., stereotypes linking Blacks with crime or with related traits like violence or hostility) influence judgments through processes of misattribution and disambiguation” (Spencer, Charbonneau, & Glaser, 2016, p. 50). More specifically, the way implicit bias affects the way police discretion is used in ticketing and arrest decisions by police officers in Harris County, Texas. Does the officer’s unconscious attitude towards citizens of diverse backgrounds affect the outcome of the police officer / citizen contact was also examined. When examining police discretion and the relationship between implicit bias and negative outcomes for African Americans at the conclusion of traffic stops, there has been limited research conducted as it relates particularly to the number of citations received, consent searches performed and traffic stop related arrests in the southern region of Texas, Harris County.

Statement of the Problem

This study explored relevant data on how a police officer’s implicit biases can affect the way they use their discretion in the performance of their duties. There are gaps in the literature that have limited focus on the impact of race and gender disparities in

police traffic stops as they relate to the number of tickets issued, number of consent searches, and number of arrests of African American motorists in the southern region of Texas, Harris County. By gaining a clear understanding of the prevalence of the effects of implicit bias on officer discretion in their police departments, key police administrators can work toward ways to measure this phenomenon, raise awareness and effectively reduce their effect on behavior. Although many law enforcement agencies have bans on racial profiling and trainings in place to try to curb bias-based policing, law enforcement leaders also recognize that they have limited information to help them understand the scope of the problem within their department” (Spencer et al., 2016, p. 58). This area is important because it will specifically focus on police discretion that is a byproduct of an officer’s implicit biases as relates to police/citizen contact outcomes. This research will add to the limited body of knowledge in the area of implicit bias and police discretion.

Additionally, this research studied the effects that the following independent variables have on an officer’s discretion: ethnicity of violator and gender of violator. The dependent variables are number of tickets issued, number of consent searches, and arrests at the conclusion of traffic stop. Answers to the following questions will be sought:

1. Does the number of male and female traffic violators have any predictive power regarding the number of tickets issued by officers of Texas Law Enforcement Agencies?
2. Does the number of various racial groups of traffic violators (African American, Asian American, Caucasian, Hispanic American, and Other American) have any predictive power regarding the number of tickets issued by officers of Texas Law Enforcement Agencies?

3. Does the number of male and female traffic violators have any predictive power regarding the number of consent searches by officers of Texas Law Enforcement Agencies?
4. Does the number of various racial groups of traffic violators (African American, Asian American, Caucasian, Hispanic American, and Other Americans) have any predictive power regarding the number of consent searches by officers of Texas Law Enforcement Agencies?
5. Does the number of male and female traffic violators have any predictive power regarding the number of arrests at the conclusion of traffic stops by officers of Texas Law Enforcement Agencies?
6. Does the number of various racial groups of traffic violators (African American, Asian American, Caucasian, Hispanic, and Other American) have any predictive power regarding the number of arrests at the conclusion of traffic stops by officers of Texas Law Enforcement Agencies?

Purpose of the Study

The purpose of this study was to examine the impact of race and gender disparities in police traffic stops as they relate to the number of tickets issued, number of consent searches, and number of arrests of traffic violators in the southern region of Texas, Harris County. “More than 20 million Americans are stopped each year for traffic violations, making this one of the most common ways in which the public interacts with the police” Pierson et al., 2020, p. 736).

A review of implicit bias from a theoretical frame of reference as it relates to decision making (discretion) and outcomes for African American motorists at the

conclusion of a traffic stop is necessary. There has been limited research conducted as it relates particularly to the number of citations received, consent searches performed, and traffic stop related arrests.

There are gaps in the literature that have limited focus on the impact of race and gender disparities in police traffic stops as they relate to the number of tickets issued, number of consent searches, and number of arrests of African American motorists in Texas. The research is necessary to impact or inform the creation of bias-based police policies for police agencies in Harris County, Texas. Harris County is in the United States in the state of Texas, located in the southeastern part of the state near Galveston Bay. As of the 2010 census, the population was 4,092,459, making it the most populous county in Texas and the third most populous county in the United States. Harris County sits in the Upper Gulf Coast region that consists of the following counties: Austin, Brazoria, Chambers, Colorado, Fort Bend, Galveston, Harris, Liberty, Matagorda, Montgomery, Walker, Waller, and Wharton.

Data for this study was taken from Harris County Law Enforcement Agency's Racial Profiling Report that is required to be submitted by each agency to the Texas Commission on Law Enforcement (TCOLE) on a yearly basis. The agencies for this study consisted of Texas police agencies in Harris County, which is in the Upper Gulf Coast Region (13 counties) and include the report from 2018. There are approximately 191 law enforcement agencies in the Upper Gulf Coast Region and approximately fifty-one law enforcement agencies in Harris County. This includes agencies from college/university police departments, Houston Police Department, Harris County Constables Offices, Harris County Sheriff's Office, and Independent School District

Police Officers. Twenty-one law enforcement agencies racial profiling reports were reviewed for this study.

Significance of the Study

The analysis of the data obtained in the present study will be particularly useful to police command staff members and other city and county officials who are responsible for improving police and citizen relationships. An analysis of the data may contribute to the development of training that helps reduce the biases that an officer may have.

Statement Hypotheses

The following null hypotheses were formulated for the purposes of the study:

H01: There is no statistically significant predictable relationship between the number of male and female traffic violators and number of tickets issued.

H02: There is no statistically significant predictable relationship between the number of racial groups, traffic violators and number of tickets issued.

❖ H03: There is no statistically significant predictable relationship between the number of male and female traffic violators and number of consent searches.

H04: There is no statistically significant predictable relationship between the number of racial groups, traffic violators and number of consent searches.

H05: There is no statistically significant predictable relationship between the number of male and female traffic violators and number of arrests at the conclusion of traffic stops.

H06: There is no statistically significant predictable relationship between the number of racial groups, traffic violators and number of arrests at the conclusion of traffic stops.

Assumptions

The following assumptions were made regarding this study. They are as follows:

1. The researcher will assume that all law enforcement agencies will have similar results as they relate to implicit bias and the use of discretion.
2. The law enforcement agencies selected for this study are a representative sample of this study.
3. It is assumed that the statistical methods chosen for this study would be appropriate to analyze data.

Limitations

The researcher observed the following limitations and delimitations:

1. This study will be limited to Texas police agencies in Harris County in southeast Texas.
2. This study will be limited to offenses that give an officer the option of using discretion during traffic stops, e.g., speeding, failure to signal lane changes and all other traffic violations listed in the Texas Transportation Code, Chapter 545.
3. Finally, this study will only examine offenses that are classified as Class “C” Misdemeanors by the Texas Penal Code.

Definition of Terms and Variables

Throughout this study, the researcher used the following terms: gender, race, police officer, implicit bias, discretion, violators, speeding, public intoxication, Class “C” misdemeanor, Texas Penal Code, and years of service. To ensure that the reader has a

clear understanding of the terminology used by the researcher in this study, the following terms were operationally defined:

Class C misdemeanor - (Penal Code Sec. 12.23) An individual adjudged guilty of a Class C misdemeanor shall be punished by a fine not to exceed \$500. (Texas Penal Code, *Sec. 12.23*)

Consent Searches – an act or reason, accompanied with deliberation, the mind weighing as in a balance the good or evil on each side. It means voluntary agreement by a person in the possession and exercise of sufficient mental capacity to make an intelligent choice to do something proposed by another. (Black's Law Dictionary, 1968)

Discretion – a public officer has discretion whenever the effective limits on his power leave him free to make a choice among possible courses of action or inaction (Davis, K. C., 1969, p. 178).

Differential Association Theory (Sutherland, 1947) - “Sutherland’s theory has two basic elements. The content of what is learned includes specific techniques for committing crimes; appropriate motives, drives, rationalizations, and attitudes; and more general ‘definitions favorable to law violation’” (Bernard, Snipes, & Gerould, 2010, p. 181).

Education – level of formal education through public or private institution (Merriam-Webster's Collegiate Dictionary, 2020).

Gender- is a social construction whereby a society or culture assigns certain tendencies or behaviors the labels of masculine or feminine (U.S. Census, 2020).

Implicit bias - is a positive or negative mental attitude towards a person, thing, or group that a person holds at a subconscious level. (*Understanding Implicit Bias*, 2015).

Misdemeanor - a crime less serious than a felony (Merriam- Webster's Collegiate Dictionary, 2020).

Motor Vehicle Stop - an occasion in which a peace officer stops a motor vehicle for an alleged violation of a law or ordinance. (Texas Code of Criminal Procedures, CCP, Art. 2.132. Law Enforcement Policy on Racial Profiling, 2019-2020).

Non-Discretionary Police Searches - those where the reported rationale of the vehicle search type was a search incident to arrest (Childers, 2012, p. 1042).

Number of Female Issued Traffic Tickets – refers to raw number of female violators in Harris County and related counties in the southern region of Texas.

Number of Males Issued Traffic Tickets – refers to raw number of male violators in Harris County and related counties in the southern region of Texas.

Number of Traffic Tickets Issued by Ethnicity – refers to raw number of tickets issued by ethnicity for traffic violators in Harris County and related counties in the southern region of Texas.

Number of Consent Searches – refers to the raw number of consent and non-consent searches for traffic violators in Harris County and related counties in the southern region of Texas.

Number of Arrests – refers to the raw number of arrests for traffic violators in Harris County and related counties in the southern region of Texas.

Police officer - a member of a police force (Merriam- Webster's Collegiate Dictionary, 2020).

Public intoxication – (Penal Code Sec. 4902) A person commits an offense if the person appears in a public place while intoxicated to the degree that the person may endanger the person or another. (Texas Penal Code, 49.02 Public Intoxication, 2021).

Race – social definition of race recognized in this country and not an attempt to define race biologically, anthropologically, or genetically. Race data collected for a minimum of five groups: White, Black, or African American, American Indian or Alaska Native, Asian, and Native Hawaiian or other Pacific Islander (U.S. Census, 2020).

Racial profiling (Code of Criminal Procedure, Article 30.5., C.C. P. 30.5) – In this code, “ Racial Profiling” means a law enforcement-initiated action based on an individual’s race, ethnicity, or national origin rather than on the individual’s behavior or on information identifying the individual as having engaged in criminal activity. (Texas Code of Criminal Procedure, Art. 2.132, 2021)

Rank - relative standing or position (Merriam-Webster's Collegiate Dictionary, 2020).

TCLEDDS - Texas Commission on Law Enforcement Data Distribution System

TCOLE – Texas Commission on Law Enforcement: The mission of the Texas Commission on Law Enforcement, as a regulatory State agency, is to establish and enforce standards to ensure that the people of Texas are served by highly trained and ethical law enforcement, corrections, and telecommunications

personnel. In [tcole.texas.gov](https://www.tcole.texas.gov). Retrieved June 25, 2020, from <https://www.tcole.texas.gov/content/tcole-mission>

Texas Penal Code (2019-2020, Sec. 1.02. Objectives of Code) – The general purposes of this code are to establish a system of prohibitions, penalties, and correctional measures to deal with conduct that unjustifiably and inexcusably causes or threatens harm to those individual or public interests for which state protection is appropriate. To this end, the provisions of this code are intended, and shall be construed, to achieve the following objectives:

- (1) to ensure the public safety through:
 - (A) the deterrent influence of the penalties hereinafter provided;
 - (B) the rehabilitation of those convicted of violations of this code; and
 - (C) such punishment as may be necessary to prevent likely recurrence of criminal behavior;
- (2) by definition and grading of offenses to give fair warning of what is prohibited and of the consequences of violation;
- (3) to prescribe penalties that are proportionate to the seriousness of offenses and that permit recognition of differences in rehabilitation possibilities among individual offenders;
- (4) to safeguard conduct that is without guilt from condemnation as criminal;

- (5) to guide and limit the exercise of official discretion in law enforcement to prevent arbitrary or oppressive treatment of persons suspected, accused, or convicted of offenses; and
- (6) to define the scope of state interest in law enforcement against specific offenses and to systematize the exercise of state criminal jurisdiction. (Lexis Nexis, 2019-2020)

Texas Transportation Code - Chapter 545 – The legal code that governs the operation of motor vehicles on public roads and highways (Texas Transportation Code , 2021).

Violator - a person who breaks or disregards the law / violate the law (Merriam-Webster's Collegiate Dictionary, 2020).

Organization of the Study

This study was organized into five chapters: Chapter 1 includes an introduction, statement of the problem, purpose of the study, significance of the study, theoretical framework, statement of hypotheses, assumptions, limitations, definition of the terms/variables, organization of the study, and context of the study. Chapter 2 provides a review of literature related to (a) theoretical framework (b) historical overview of implicit bias (c) historical overview of police discretion (d) hit rates (e) Ferguson Effect (g) factors that affect traffic violations (h) gender and the number of traffic tickets issued (i) ethnicity and number of tickets issued (j) number of consent and non-consent searches for traffic violations (k) number of arrests for traffic violations. A summary of the literature review concludes Chapter 2.

Chapter 3 discusses the design of the study, type of research design, population, sampling method/data collection, independent variable and dependent variables, statistical analysis, and statistical assumptions. Chapter 4 provides analyses of the data. Chapter 5 discussed summary, findings, discussion, conclusions, implications, and recommendations.

Context of the Study

The data collected for this research study was secondary data taken from the yearly racial profiling reports that are submitted to the Texas Commission on Law Enforcement by Texas Law Enforcement Agencies. Texas Occupations Code 1701.164 specifies that TCOLE collect incident-based data in accordance with the Code of Criminal Procedure Article 2.131 – 2.138. Chief administrators of law enforcement agencies that meet the criteria must submit racial profiling reports to their governing body, as well as TCOLE. Each agency must file an annual online report by selecting and completing the reporting option that applies to their situation. Reports are filed online through the Texas Commission on Law Enforcement Data Distribution System, TCLEDDS. The reporting period for the previous year begins on January 1 of the current year and ends on March 1 of the current year. Secondary data will also be taken from the Houston Police Department's Annual Racial Profiling Report (2018).

(See APPENDIX) The data for the Houston Police Department can be found at the following links:

https://www.houstontx.gov/police/departments_reports/racial_profiling/2018_Annual_Racial_Profiling_022019.pdf

This included agencies from college/university police departments, Harris County Constables Offices, Houston Police Department, Harris County Sheriff's Office, and Independent School District Police Officers. Twenty-one law enforcement agencies racial profiling reports were reviewed for this study.

CHAPTER 2

REVIEW OF RELATED LITERATURE

The purpose of this study was to examine the impact of race and gender disparities in police traffic stops as they relate to the number of tickets issued, number of consent searches, and number of arrests for traffic violators in the southern region of Texas. Specifically, this study was concerned with the predictable relationship between the variables gender (number of male violators and number of female violators) ethnicity (number of African American, number of Asian American, number of Caucasian, number of Hispanic American, and number of other racial groups) and the number of tickets issued, number of consent searches, and number of arrests for traffic violators by Texas Law Enforcement Agencies. The analysis of the data obtained in the present study will be particularly useful to police command staff members and other city and county officials who are responsible for improving police and citizen relationships.

“More than 20 million Americans are stopped each year for traffic violations, making this one of the most common ways in which the public interacts with the police” Pierson et al., 2020, p. 736). The research examined in detail the definition of implicit bias, how it is measured and how it affects the decision making of police officers when making contact with female, male, African American, Caucasian, Asian, Hispanic, and other racial groups during traffic stops. Lee (2013) postulated from research that one does not have to be a racist to harbor implicit bias.

The literature review discusses historical overview of implicit bias, historical overview of police discretion, and factors that effect and historical accounts of African Americans and police interactions on traffic stops. In addition, literature discusses in both qualitative and quantitative analysis as it relates to the independent variables of this study. The subsequent section will discuss the theoretical framework of this study that will shed light on how police officers can learn discriminatory behavior.

Theoretical Framework

The Differential Association theory will be used to explain how police officers learn discriminatory behavior during and after their indoctrination period into law enforcement. Differential association theory proposes that people learn values, attitudes, techniques, and motives for criminal behavior through their interactions with others. It is a learning theory of deviance that was initially proposed by sociologist Edwin Sutherland in 1939 and revised in 1947 (Matsueda, 1988). Differential Association Theory states that criminal behavior is learned in a process and a person engaging in criminal behavior must first acquire the skill set to complete the crime. Sutherland's differential association theory recognizes nine propositions, which introduce three concepts - normative conflict, differential association, and differential group organization – that explain crime at the levels of the society, the individual, and the group” (Matsueda, 2010, p. 3).

Everyday police officers patrol the streets in various communities across the country knowing the danger they will face and the perception of being unfair in their dealings with minorities. The decisions that they make daily have life changing outcomes for those that they encounter while doing their jobs completing lawful

objectives. Texas Administrative Code §217.1, (2014) states to become a police officer in the State of Texas an individual must meet the minimum standards for enrollment and initial licensure; successful completion of the basic licensure course; passing of the state licensing examination; and appointment by a law enforcement agency (Texas Administrative Code §217.1, 2014).

After a person that meets the requirements, completes the basic licensure course, passes the state licensing examination, and then is appointed/hired as police officer, they still must complete a Field Training Program (FTP) for on-the-job training. During this process, officers in training review a variety of topics that they learned in the academy. The topics include state criminal and traffic laws, police agency policy and procedures, driving techniques, de-escalation, ethics, report writing, basic investigation, firearms training, and numerous other blocks of instruction before being able to patrol the streets and interact with the public on their own.

If a police officer in training cannot demonstrate proficiency in the topics, they will be dismissed from the police agency's training program and lose the opportunity to become a police officer. The above list of training initiatives is not an all-inclusive list, but they are clearly defined guidelines and best practices that gives new officers a straight path towards being a good officer and applying the law equitably to those in the community that he or she may serve. Officers who serve year after year also receive annual training that cover de-escalation, domestic violence, crisis intervention training, legal updates, professionalism, etc.... The Texas Commission on Law Enforcement requires all officers to complete a minimum of 40 hours of training during each training unit (2 years), however they do not limit the number of continuing education hours an

agency may provide. (TCOLE, 2020) (Texas Commission On Law Enforcement, 2020)*Texas Administrative Code Chapter -RULE §218.3- Legislatively Required Continuing Education for Licensees:*

(a) Each licensee shall complete the legislatively mandated continuing education in this chapter. Each appointing agency shall allow the licensee the opportunity to complete the legislatively mandated continuing education in this chapter. This section does not limit the number or hours of continuing education an agency may provide.

(b) Each training unit (2 years).

(1) Peace officers shall complete at least 40 hours of continuing education, to include the corresponding legislative update for that unit.

(2) Telecommunicators shall complete at least 20 hours of continuing education.

(c) Each training cycle (4 years).

(1) Peace officers who have not yet reached intermediate proficiency certification shall complete: Cultural Diversity (3939), Special Investigative Topics (3232), Crisis Intervention, (3843) and De-escalation (1849).

(2) Individuals licensed as reserve law enforcement officers, jailers, or public security officers shall complete Cultural Diversity (3939), unless the person has completed or is otherwise exempted from legislatively required training under another commission license or certificate.

Although officers receive numerous hours of training mandated by the state and their respective agencies that focuses on fair and equitable treatment of the violators police officers encounter while carrying out lawful objectives, there are still factors that affect how they interact differently with members of the community and how they

distribute sanctions. By examining the process of becoming a police officer, the research shows that while in the police academy or in the field training program with their hiring agency, the new officer could possibly be exposed to excessive discriminatory definitions (police subculture), as defined by Edwin Sutherland's Differential Association theory. According to Wesley (1970), the new officer "watches how his partner acts, and the next time anything happens he does the same thing. From his partner he is receiving a constant stream of explicit and implicit definitions of behavior" (pg. 158-159).

Research shows that "the recruit as he passes through the police school, thus comes in contact with more informal definitions by implication and suggestion" (Wesley, 1970, p.156) Wesley (1970) further postulated that "it is difficult to make an objective assessment of the function of the recruit school in initiation. However, as the foregoing impressionistic account shows, there is little doubt (1) that it detaches the new man from his old experience and prepares him for the new; and (2) that the recruit learns the outlines of his job as it appears on the books, and with this he can work until he knows better" (p. 156). As defined by Edwin Sutherland, learning behavior through Differential Association occurs when there are excessive definitions that a person is exposed where they learn the skill set necessary to engage in the behavior. "And from these explanations and assertions the recruit gets his actions defined. In fact, he is overwhelmed with such explanation and scarcely has time for thought of his own. From them he gets a general orientation, which is concretized as he gets involved in police action" (Wesley, 1970, p.159).

For the purposes of this research, how some officers still interact in a negative way or apply sanctions to African American men and women disproportionately will be

examined. This researcher will explain the actions of police officers who distribute sanctions and/or take police action against African American women and men disproportionately by applying Edwin H. Sutherland's Differential Association Theory.

Differential Association Theory states that criminal behavior is learned in a process and a person engaging in criminal behavior must first acquire the skill set to complete the crime. Sutherland stated that differential association theory as a set of nine propositions, which introduce three concepts - normative conflict, differential association, and differential group organization – that explain crime at the levels of the society, the individual, and the group” (Matsueda, 2010, p. 3). The nine propositions that make up Sutherland's differential association theory (1947) are as follows:

1. Criminal behavior is learned.
2. Criminal behavior is learned in interaction with other persons in a process of communication.
3. The principal part of the learning of criminal behavior occurs within intimate personal groups.
4. When criminal behavior is learned, the learning includes (a) techniques of committing the crime, which are sometimes very complicated, sometimes simple; (b) the specific direction of motives, drives, rationalizations, and attitudes.
5. The specific direction of motives and drives is learned from definitions of the legal codes as favorable or unfavorable.
6. A person becomes delinquent because of an excess of definitions favorable to violation of law over definitions unfavorable to violation of the law.

7. Differential associations may vary in frequency, duration, priority, and intensity.
8. The process of learning criminal behavior by association with criminal and anti-criminal patterns involves all the mechanisms that are involved in any other learning.
9. While criminal behavior is an expression of general needs and values, it is not explained by those needs and values, since non-criminal behavior is an expression of the same needs and values.

The tenants that are outlined in Sutherland's Differential Association theory will be used to explain how police officers learn behavior that is discriminatory to African American men and women. For purposes of this study, the researcher will specifically assess the following five propositions:

1. Discriminatory behavior is learned.
2. Discriminatory is learned in interaction with other police officers in a process of communication.
3. The principal part of the learning of discriminatory behavior occurs within intimate personal groups within the police subculture.
4. The specific direction of motives and drives is learned from definitions of the informal codes of the police subculture as favorable or unfavorable.
5. A police officer discriminates because of an excess of definitions favorable to discrimination towards African American men and women over definitions unfavorable to discrimination towards African American men and women.

The subsequent section will discuss the theoretical historical overview of implicit bias.

Historical Overview of Implicit Bias

“Implicit bias refers to the attitudes or stereotypes that affect our understanding, actions, and decisions in an unconscious manner. These biases, which encompass both favorable and unfavorable assessments, are activated involuntarily and without an individual’s awareness or intentional control” (*Understanding Implicit Bias*, 2015).

Implicit Biases have a few very distinct characteristics that allow researchers to identify its presence in individuals. The Ohio State University Kirwan Institute for the Study of Race and Ethnicity (2015) outlines the following characteristics of Implicit Bias:

- Implicit biases are **pervasive**. Everyone possesses them, even people with avowed commitments to impartiality such as judges.
- Implicit and explicit biases are **related but distinct mental constructs**. They are not mutually exclusive and may even reinforce each other.
- The implicit associations we hold **do not necessarily align with our declared beliefs** or even reflect stances we would explicitly endorse.
- We generally tend to hold implicit biases that **favor our own ingroup**, though research has shown that we can still hold implicit biases against our ingroup.
- Implicit biases are **malleable**. Our brains are incredibly complex, and the implicit associations that we have formed can be gradually unlearned through a variety of debiasing techniques.

Activated involuntarily, without awareness or intentional control, implicit bias can be either positive or negative. Everyone is susceptible. A person’s bias can extend to any group, but for the purposes of this research, we will focus on the bias held against African American men and women during traffic stops. Northwestern Law Review stated in *The Ferguson Effect* that race plays a role, “covertly, into the social construction of normative rules for social interaction between Whites and people color ” (Foreman,

2015, *Northwestern Law Review*). In decision making a person's bias is impacted by stereotypes and "certain racial order arises" (Foreman, 2015). Lee (1996) revealed in research that African Americans are viewed from a negative position of being more violent and aggressive than Whites. Oliver (2003) concurs that there are a considerably host of variables that contribute to African Americans being perceived as dangerous and violent, including age, gender, and dress. The Ohio State University Kirwan Institutes Implicit Bias Review (2015) research from the neuro-social and cognitive sciences posited that hidden biases are distressingly pervasive, that they operate largely under the scope of human consciousness, and that they influence the ways in which we see and treat others, even when we are determined to be fair and objective". Everyone has an unconscious guide that consistently assists in making assumptions about other members of our society. As long as man has walked this earth, he has held biases against one group or another. The biases have been the driving force behind wars, the enslavement of others, discrimination of many and the attempted annihilation of certain groups.

When examining the thought process involved in implicit bias, a breakdown from a psychological point of view must be applied. Implicit bias is a product of System 1 thinking. System 1 thinking involves thought that is unconscious, effortless, automatic, and fast, which is a part of the Dual System Theory (Stanovich, 1999; Evans, 2006). System 2 involves thinking that is conscious, deliberate, effortful and slow. Stanovich (1999) stated that our implicit biases are the result of mental associations that have formed by the direct and indirect messaging we receive, often about different groups of people. When we are constantly exposed to certain identity groups being paired with certain characteristics, we can begin to automatically and unconsciously associate the

identity with the characteristics, whether that association aligns with reality (Evans, 2006). The Dual System Theory provides an account of how thought is created in two different ways, or because of two different processes. More often than not, the two processes consist of an implicit (automatic), unconscious process and an explicit (controlled), conscious process (Evans, 2006). The Dual System Theory foundations were derived from Psychologist Williams James who believed there two kinds of thinking: associative and rue reasoning. His research led to Professor Keith Stanovich eventually creating the term Dual Process thinking.

Discretion is used daily and without equity throughout the criminal justice system. The police are just the first step in the process. Levinson and Smith (2012) research posited that the presence of bias from individuals who should be able to make rational decisions based on facts, e.g. “A scientific revolution, however, has generated new interest with regard to how upstanding people—including judges, jurors, lawyers, and police—may discriminate without intending to do so” (Levinson & Smith, 2012). The presence of this revolution has given researchers new opportunities to empirically investigate the legal system and its workers and how discrimination has almost been undetectable until now. “The topic of implicit racial bias in the legal system is extraordinarily broad, and scholars are beginning to consider how it might illuminate inequality across a range of legal domains” (Levinson & Smith, 2012, p. 795).

Levinson and Smith (2012) research concurs with this study as it discusses the presence of implicit bias across various legal domains, which includes police law enforcement agencies. “It thus calls for an implicit bias research agenda designed to further examine how and when implicit bias affects prosecutorial decision-making,

including studies designed to test ways of reducing the harms of these biases” (Levision & Smith, 2012, p. 797).

Fridell (2017) posited that the science behind implicit bias and how it applies to the police profession. “Through our implicit biases, we link individuals to the stereotypes associated with their group(s). This can impact our perceptions and behavior and can occur even in individuals who, at the conscious level, reject bias, prejudice, and stereotyping” (Fridell, 2017, p. 7). The article specifically discusses how it manifests itself in police work. Fridell (2017) postulates with several of the researchers on how Black crime association might manifest in the work of police. Peruche and Plant (2005) as cited in Fridell (2017) reported that officers’ implicit biases might increase the scrutiny of Blacks compared to others; it might lead to more searches of Blacks than others.

The presence of implicit bias is something that is visible to the naked eye. Those biases routinely held by an individual without their knowledge until they are set in motion. “Implicit attitudes are manifest as actions or judgments that are under the control of automatically activated evaluation, without the performer's awareness of that causation” (Greenwald, McGhee & Schwartz, 1998). The Implicit Association Test is a tool that is used to help shed light on an individual’s existing internal biases. Greenwald et al. (2009) further explained in detail what the Implicit Association Test is and how they tested for its validity. "The IAT assesses strengths of associations between concepts by observing response latencies in computer-administered categorization tasks" (Greenwald et al., 2009, p. 18). The researcher discussed the validity of the tests that are the basis of determining if someone is bias. According to Greenwald (2009):

“The review found that, for socially sensitive topics, the predictive validity of self-report measures was remarkably low and the incremental validity of IAT measures was relatively high. In the studies examined in this review, high social sensitivity of topics was most characteristic of studies of racial and other intergroup behavior. In those topic domains, the predictive validity of IAT measures significantly exceeded the predictive validity of self-report measures” (p. 32).

Eberhart, Goff, Davies, and Purdie (2004) investigated the influence of stereotypes on visual processing. The authors used five studies to try to make the correlation between the two. “Study one demonstrates that black faces influence participants’ ability to spontaneously detect the greater images of criminal relevant objects. Conversely, studies 2-4 demonstrate that activating abstract concepts (i.e., crime and basketball) includes attentional biases toward black male faces” (Eberhart et al., 2004, p. 876). The fifth and final study examines whether a social group member is the default representative of the social group.

Their research is imperative because it goes right to the heart of what causes implicit bias which ultimately affects police discretion. The authors believe that the mere concept of crime can bring forth negative thoughts of Blacks or associate them with the crime itself. “Crime, for example, may trigger images of those Black Americans who seem most physically representative of a black racial category (i.e., those who look highly stereotypical). Likewise, highly stereotypical Blacks should be the most likely to trigger thoughts of crime” (Eberhart et al., 2004, p. 877). The authors call this concept bi-directionality and believe that it contributes to the durability of certain stereotypic associations which could be associated with the presence of the negative effects of

implicit bias as it relates to police discretion despite training and other attempts to decrease is negative effects.

Historical Overview of Police Discretion

What is discretion? According to Davis (1969) in *Discretionary Justice: A Preliminary Inquiry*, a public officer has discretion whenever the effective limits on his power leave him free to make a choice among possible courses of action or inaction (Davis, K. C., 1969, p. 178). “Some elements of this definition need special emphasis. Especially important is the proposition that discretion is not limited to what is authorized or what is legal but includes all that is in “the effective limits on the officer’s power. This phraseology is necessary because a good deal of discretion is illegal or of questionable legality” (Davis, K. C., 1969, p. 178).

Discretion is a ubiquitous and legitimate aspect of modern policing, though its scope and limits are poorly understood (Bronitt & Stenning, 2011). The complexity of police discretion calls for a thorough examination of the topic that will increase our understanding of the historical evolution of the concept and the challenges faced by police officers and the agencies that govern their behavior. As stated by Davis (1969) “an officer who decides what to do or not to do often (1) finds facts, (2) applies law, and (3) decides what is desirable in the circumstances after the facts and the law are known. The third of these three functions is customarily called “ the exercise of discretion,” (Davis, K. C., 1969, p. 196).

The examination of the concept and practice of police discretion, examples of discretion abuse and ways to improve the use of discretion by police officers is important.

Young (2011) define discretion and specifically discuss the legitimate use of discretion by police officer to enforce the law. “This thesis discusses police exercise of discretion and its relationship to the U.S. Constitution and the Criminal Justice field. It addresses the two most common interactions between police and citizens, the traffic stop and maintenance of order” (Young, 2011, p. 1). The researcher examined two examples of the abuse of discretionary authority by police officers in the case of Rodney King and the Kent State University Shootings. “Discretionary authority represents one of the most critical and difficult exercises of power for law enforcement in America today. Police discretion in a democratic society is required to maintain social order. However, the exercise of discretion —poses an uncomfortable paradox in a democratic society” (Joh, 2007, p. 205). According to Davis (1969) when we isolate what we regard as the exercise of discretion, we find three principal ingredients- facts, values, and influences. But an officer who is exercising discretion seldom separates these three elements; most discretionary decisions are intuitive, and responses to influences often tend to crowd out thinking about values (Davis, K. C., 1969, p. 196).

In the research study, the researchers further examined police discretion concepts as it relates to Discretionary Authority and Democracy and Dilemmas of excessive Discretionary Power. Additional research also yielded the importance of implementing high standards to motivate relevant police training. “With the current demands placed on police officers and the pervasive role discretion plays in policing, ensuring quality police work should be accomplished through a relevant training continuum throughout all levels of law enforcement” (Young , 2011, p. 71).

Discretion plays an important role in maintaining social order. “Discretion is a powerful and unpredictable tool that allows police officers to control and maintain social order in society. It challenges police officers to make the right decisions between proper and improper procedures, which sometimes cause tension in the criminal justice system and with the public” (Young, 2011, pp. 79-80). If implicit bias causes officers to use their discretion in a negative manner, it must be addressed, accounted for, and reduced through officer training.

Bronitt and Stenning (2011) defined discretion, focused on its’ meaning, inherent tension within and paradoxes, how the law enables and constrains discretion and the challenges police officers face when exercising discretion. “A public officer has discretion whenever the effective limits on his power leave him [or her] free to make a choice among possible courses of action or inaction” (Davis, 1969, p. 4). It is argued in this article that the mostly commonly used definition of discretion by Kenneth Culp Davis is extremely broad and does not identify what is an acceptable or unacceptable use of discretion by police officers. The point in which an officer’s “effective limits on their power” is exceeded involves a majority of that officer’s interaction with the public. This possibly leaves the justice outcomes for marginalized citizens in the hands of an individual whose discretion may or may not be influenced negatively by their own implicit biases. Davis concurs that the harms from police violations of clear statutes are multiplied when policy-making power is exercised by individual policemen. Davis further states that the system is atrociously unsound under which an individual policeman has unguided discretionary power to weigh social values in an individual case and make a final decision as to governmental policy for that case, despite a statute to the contrary,

without review by any other authority, without recording the facts he finds, without stating reasons, and without relating one case to another (Davis, K. C., 1969, p. 1533).

Hit Rates

Becker (1957) authored a book *The Economics of Discrimination* and introduced the first economic model of discrimination for loans, housing which hit rates were later adopted for policing. Hit rates are tests that measure and inform the rate in which a crime is in fact committed using consent for searches with motorist. The hit rates provide evidence and data whether race or gender was a legitimate factor in law enforcement at the conclusion of a stop, arrest, and/or consent for searches with motorist. Pierson et al., (2019) research postulated the hit rate searches for contraband found in Black and Hispanic motorists were considered equivalent or less than White motorists.

Ferguson Effect

The Ferguson effect was an egregious time- period, 2014-2015 in U.S. history with the killing of an unarmed young black man by police officer in Ferguson, Missouri. The case was highly profiled and lead to scrutiny of police, police procedures, discrimination, practices in American society. Research postulates that there was a significant increase in crime because of the Ferguson effect (Mac Donald, 2015).

The evidence indicates that crime rose in 2015 compared to 2014 for certain specific offenses, including violence (see Mac Donald, 2015), but rigorous and systematic research has challenged whether the rise can be pinned on a Ferguson Effect (Pyrooz et al., 2016, Rosenfeld, 2015, Rosenfeld, 2016, Towers and White, 2017). Only one study to date has examined whether de-policing has occurred in the wake of

Ferguson and whether such behavior was associated with changes in crime (Morgan and Pally, 2016).

Factors that Effect Traffic Violations

Fliss, Baumgartner, Delamater, Marshall, Poole, and Robinson (2020) state that the first citizen's contact with the US justice system is traffic stops (US Department of Justice Office of Justice Programs Bureau of Justice Statistics & Davis, 2018). Many traffic violations that happen can be grounds to pull over any motorist. According to NHTSA (2012), the United States had 6,898 fatalities resulting from motor vehicle crashes at intersections, and 1,126 fatalities occurred at the signalized intersections and 1,492 fatalities transpired at the stop/yield-controlled intersections (NHTSA, 2011). A driving violation is one type of driving error (Stanton & Salmon, 2009) that has been known as a factor involved in the crashes occurring at intersections (Young, Salmon, & Lenn'e, 2013).

Motorists are often treated indifferent after the inception of a traffic stop. If a police officer detects a traffic violation, the resulting stop can be based exclusively on the traffic violation and lead to only a ticket or warning, or result in an investigative stop where the minor traffic violation gives probable cause to further investigate the motorist by searching their vehicle, seizing the vehicle, or additional criminal sanctions. When a traffic violation has occurred, the officer has probable cause to make the traffic stop.

Academic scholars are beginning to question using traffic citations as a source of revenue. The first major work in this area was conducted by Garrett and Wagner (2009) to examine the link between the number of traffic citations issued and local government fiscal health. With this in mind, Makowsky and Stratmann (2009) found evidence that

local governments often use traffic citations as an alternative source of revenue.

Makowsky and Stratmann (2009) concluded that law enforcement agencies consider the state of the economy while issuing traffic citations. Similarly, Hummel (2014) found a relationship between government fiscal health and the issuing of traffic citations.

Hummel (2014) implied governments are utilizing traffic fines and fees to alleviate their budgets. Likewise, Makowsky and Stratmann (2011) claimed local governments in poor fiscal health issue more traffic citations especially when the local governments possess a portion of the revenue generated from traffic citations (Garrett & Wagner, 2009).

Gender and the Number of Tickets Issued

This research posits that the gender of drivers on Harris County, Texas roadways has a direct effect on the possibility of whether they will receive a ticket at the conclusion of the traffic stop. “In the United States, a majority of the drivers who receive a traffic ticket are male, and male drivers are more likely to receive a ticket after being stopped by the police” (Rowe, 2009, p. 1). The result is unequitable outcomes for male drivers at the end of traffic stops compared to female drivers committing the same or more egregious violations. According to the US Department of Justice Office of Justice Programs Bureau of Justice Statistics and Davis (2018) revealed in the report *Contacts Between Police and the Public*, 2015, that a greater percentage of males (10.2%) than females (7.0%) were pulled over as the driver in a traffic stop (*Table 3*). Blacks (9.8%) were more likely than Whites (8.6%) and Hispanics (7.6%) to be the driver in a traffic stop” (US Department of Justice Office of Justice Programs Bureau of Justice Statistics & Davis, 2018, p. 4).

Blalock, DeVaro, Leventhal, and Simon (2007) examined if driver gender impacts the issuance of traffic tickets. Traffic data were collected from locations in Illinois, Massachusetts, Tennessee, and Wichita, Kansas. Information from the dataset included the reason for the traffic stop, if a ticket was issued, and driver gender. The results of the study revealed that women are less likely to receive a ticket than men. When examining the influence of gender by location, in three of the five locations women were likely to receive a traffic ticket more than men; whereas, in two of the remaining locations, men were more likely to receive a traffic ticket. The results indicated that a driver's gender varied in locations, which does not support previous views that women are less likely to receive a traffic ticket than men.

Research by González-Iglesias et al. (2012) surveyed a sample of 541 drivers (292 females, 249 males) aged 20–73 years. Research collaborators collected individual data from participants in Spain. The results revealed considerable differences in gender driving behaviors. According to the data, males were more likely to receive high numbers of fines and accidents resulting from violating traffic regulations. Male traffic violations were related to aggressive expression of anger that resulted in overall number of fines and number of accidents than females. The results show that males are involved in more road accidents and violate traffic regulations more often than women. The results also suggest that females tend to be angrier at traffic obstructions causing roadblocks than males.

Liew, Hamidun, and Soid (2017) investigated the effect of driving experience and gender on various traffic offenses. To collect data, a self-administered questionnaire was completed by 168 male and 132 female road users, which totals 300 respondents.

Information from the questionnaire was gathered related to the respondents' demographic characteristics, number of accidents, and their involvement in the traffic offenses. The questionnaire measured gender frequency of committing eleven types of traffic offenses such as: "(1) speeding; (2) red light running; (3) overtaking at double lines; (4) queue jumping; (5) illegal use of emergency lane using mobile phone while riding/driving; (6) dangerously cutting into traffic; (7) using hand phone while driving / riding; (8) not wearing seatbelt / helmet; (9) driving/riding with expired road tax; (10) driving/riding with noncompliance specification vehicle and (11) dangerously cutting into traffic (p. 2). It was found that there is a significant relationship between gender and the summons received by the individuals committing traffic offenses. Regarding summons for traffic offenses, male drivers received more summons as compared to female drivers. In comparison, men committed more offenses in speeding, red light running, illegal use of emergency lane, tailgating and were involved in accidents. Based on the findings, the researchers recommended that a plan is needed for proper intervention that target gender groups and traffic violations to modify behaviors and help in the reduction of the national accident rate.

Race and Number of Tickets Issued

The most common way that the public encounters police officers in this country is through traffic stops. According to the Motor Vehicle Stop Data Report from the Texas Department of Public Safety, in 2020 relating to traffic stops by troopers indicates that 40.21% of the total traffic stops are White drivers, 10.89% are black drivers, 46.91% Hispanic drivers and 1.99% are of other ethnicities. These statistics relate to the estimated population of Texas which reflects 41.22% of the Texas population is White,

12.08% black, 39.75% Hispanic and 6.96% other ethnicities (Texas Department of Public Safety, 2020). In an article by Regoeczi, and Kent (2014), the researchers investigated factors that determine which citizens receive a warning instead of a ticket from police and if decisions varied by race. Data were collected from January 2011 to November 2011 during police ride-a-longs within four Ohio cities. Thirteen research assistants completed 140 ride-a-longs for 312 citizen stops. Three forms were used to record demographic information, officers' attitude before and after the observations, information about the events that took place, the outcome of the interaction, and an examination of the officer's decision-making processes. It was found that black citizens received a ticket more than White citizens. The results revealed 165 warnings of all stops followed by a citation/ticket for 106. In five of the 312 interactions the drivers were arrested. Officers observed that 190 stopped were male and 197 were White. In all Ohio cities, 97 White citizens stopped were ticketed compared to 165 Blacks and 62 Latino drivers, which suggests that black drivers were less likely to receive a warning than citizens in other racial groups.

The number of Black drivers ticketed, 87, were for making an illegal or improper turn and 69 of the stops made were because of a headlight violation. In comparison, 134 White drivers were ticketed for speeding and 69 White drivers were ticketed for running a red light or stop sign. Furthermore, a driver's attitude toward being stopped varied according to race either resulted in a warning or being ticketed. White drivers 231, who were courteous, received a warning compared to 81 that were ticketed. In contrast, 172 black drivers who exhibited courtesy received a warning whereas, 119 received a ticket. Based on the findings, the researchers suggested that standard procedures and policies

should be employed to explore the decisions of police officers to provide motorists a warning vs traffic ticket among black drivers and other economically disadvantaged ethnic groups across a variety of communities.

Quintana (2017) investigated if police issue speeding tickets based on gender or race. Individual level tickets were used by the researcher to investigate police behavior in issuing speeding tickets. Data were collected from automated speed detectors to measure speeding tickets issued by gender and race in Lafayette, Louisiana. Comparisons were made to determine the percentage of women and African Americans who received tickets from police officers in relationship to those who received tickets from an automated source. By comparing the results, the researcher can determine if police use gender or race as a determinant in issuing speeding tickets. The sample was taken from October 2007 to February 2008 between the hours of 6:00 a.m. to 7:00 p.m. Twenty-three percent of ticketed drivers were African American and 48% were female for speeding violations. The results of the study revealed that the probability of African Americans receiving a ticket by a police officer was higher than tickets given by an automated source. Quintana (2017) concluded that results are mixed when considering race of a driver in issuing a speeding ticket, but race cannot be completely ignored.

Seguino and Brooks (2017) examined if treatment of Black and Hispanic drivers differed significantly from that of White and Asian drivers. Data were collected from 29 police agencies in large towns and cities in Vermont using two sources: American Community Survey (ACS) and 2) the Department of Motor Vehicle (DMV). The indicators measured in this study include: “1) stop rates by race compared to racial shares of the population; 2) males as a share of stops by race, 3) the proportion of drivers by

race receiving citations; 4) racial differences in arrest rates; 5) racial differences in search rates; and 6) the percentage of searches that yield contraband (the “hit” rate)” (p. 24).

Agency-level data revealed that White and Asian drivers are stopped at rates less than other drivers. Black drivers are stopped between 16.1% and 19.3% the driving population in Vermont and Hispanics are stopped at a rate of 17.9%. Black and Hispanic drivers are stopped more often than would be expected. Based on the findings, the researchers concluded that racial disparities existed for all indicators of stop, ticket, arrest, search, and hit rates.

Liu and Sharma (2019) explored factors affecting the decision to issue a ticket vs. a warning for a traffic stop. Specifically, the researchers were interested in identifying if the drivers’ demographic and time-based factors influence the decision making of the police in Vermont. Traffic stop data were collected from the Burlington Police Department (BPD) website in Vermont during 2012 to 2017. There were a total of 33,874 traffic stops that involved White drivers of which 4,653 included speeding traffic stops. Liu and Sharma (2019) analyzed the moving violation-based speeding traffic stops resulting in tickets or warnings. The outcome of the analysis showed that minority driver’s records comprised of 153 Asians, 233 African Americans, 38 Hispanics, and 68 others. The findings showed that male drivers and minority drivers are more likely to be issued tickets rather than warnings which implies biases against these groups, which is consistent with previous studies conducted targeting traffic stop data of Vermont (Seguino et al., 2012; Seguino & Brooks, 2017, 2018), where African Americans and Hispanics were found to be more likely to be stopped, searched, and arrested than Whites and Asians. Further analysis discovered that the time of day and month influenced the

probability of minority drivers receiving speeding tickets. The researchers concluded that findings can help both the public and law enforcement agencies improve departmental policies and procedures the characteristics of law enforcement and take proper measures to eliminate possible bias.

The Sandra Bland Act (SB 1849, 2017) was supposed to do exactly that. According to the City of Houston Legislative Report, 2017, “The Sandra Bland Act (SB 1849, 2017) aims to improve and correct Texas’ criminal justice system to make it better for all people and prevent future tragedies like Sandra Bland’s. The bill addresses how law enforcement will be trained, jails will be equipped, and what resources will be available to people with mental illness, substance abuse, or intellectual differences”. Research has shown that the Texas Department of Public Safety displayed racial disparities on how it treats Blacks compared to their White counterparts during traffic stops. The Sandra Bland Act helps target and eliminate these disparities by strengthening Texas’ racial profiling law and ensuring racial profiling data submitted by Texas law enforcement agencies is “robust, clear and accurate”(City of Houston Legislative Report 2017). A case in point in Texas, the Sandra Bland will help shape Texas policy maker’s view of the need to address the disparities that exist in policing as it relates to race and gender, traffic tickets, consent for searches and arrests at the conclusion of traffic stops. As legislators, policy makers and leaders strive to work towards plausible solutions, researchers must continue to add to the literature and present the disparities with supporting data as it relates to race and gender, traffic tickets, consent for searches and arrests at the conclusion of traffic stops in policing.

There are two important reporting requirements for Texas law enforcement agencies as required by Texas' racial reporting laws. "First, every agency that makes traffic stops must compile that data and submit it annually in a report to the Texas Commission on Law Enforcement, which includes a breakdown of stops by race and whether vehicle searches were conducted. Second, law enforcement agencies are also required to submit a "comparative analysis" of that racial profiling data to TCOLE" (Code of Criminal Procedure, Article 30.5). According to The Texas Commission on Law Enforcement, in accordance with Section 1701.162, Occupations Code, shall develop guidelines for compiling and reporting information as required by this article:

(f) The data collected as a result of the reporting requirements of this article shall not constitute prima facie evidence of racial profiling.

(g) On a finding by the Texas Commission on Law Enforcement that the chief administrator of a law enforcement agency intentionally failed to submit a report required under Subsection (b), the commission shall begin disciplinary procedures against the chief administrator (Texas Commission on Law Enforcement, 2021).

Number of Consent and Non-consent Searches for Traffic Violations

When probable cause doesn't exist, police officers attempt to acquire consent by persuading motorists to allow them to search the vehicle (Blanks, 2016). When observing a traffic violation, the officer has probable cause to conduct a stop due to the violation which is a higher standard of proof than reasonable suspicion. The observed violation makes an objective stop where probable cause exists. However, when the officer uses the traffic violation as a pretext for a criminal investigation, it becomes a

pretextual investigatory stop, which the equivalent of a vehicular Terry Stop or stop and frisks with a “legal” definition of a probable cause traffic violation (Gizzi & Clark, 2016). In the court case *Terry v. Ohio*, the Court held that law enforcement could conduct a limited stop for a limited purpose if there was a reasonable articulable suspicion of wrongdoing. If an officer had a reasonable suspicion that a crime was committed or soon would be committed, they could detain the suspect to see if the suspicion was justified and allow law enforcement to conduct a limited search of the detainee, if the officer feared for his or her safety.

Blanks (2016) argues that the Fourth Amendment was intended to offer protection against practices such as Terry Stops. The exemption of voluntary consent cannot be used by police to create their own causes of articulable reasonable suspicion to pull over or stop citizens at their own discretion. The justification given for this practice is that it is a valuable tool that can be used by police officers to stop a crime before it has been committed. This expansion of police power nullifies the previous standard of probable cause or the necessity of a warrant.

In *Pennsylvania v. Mimms* (1977) the Court held that officers may order the driver to get out of the vehicle without violating the Fourth Amendment after the vehicle has been detained for a traffic violation (Rutledge 2005). This allows for the officer to perform a “sensory pat down” of the subject when they exit the vehicle (Remsberg, 1995). Knowles, Persico, and Todd (2001) examined data on police searches of vehicles stopped in Maryland for four years. Using a sample of 1,590 vehicle stops, it was determined that 29% or 461 of the searches were conducted on White drivers, whereas 63% or 1002 of the drivers stopped and searched were African Americans although their

assumed proportion of the driving public was only 18% or 286 (Knowles et al., 2001, p. 218).

Utilizing highway data from Maryland, they illustrate equal success rates for searches of motor vehicles driven by African Americans and Whites even though more searched cars are driven by African Americans. This implies police are engaging in statistical discrimination: once a car has been stopped, police are more likely to search if the driver is African American because, on average, it is more likely that they will find drugs or contraband. The results of the percentage and number of searches that uncovered illegal drugs was African Americans 34% or 541, Whites 32% or 509; Knowles et al., 2001, p. 219). This shows that African American vehicles are searched more often than those of White motorists. However, there was a low probability for Hispanics (11% or 175) was “suggestive of prejudice against this group” (Knowles et al., 2001, p. 222). This reveals that Hispanics were not carrying illegal drugs at an elevated rate to justify their search. The number of searches of African American drivers being found with drugs implied a bias against White motorists. Knowles, Persico, and Todd (2001) concluded that searches may be considered unfair because the odds of being searched is dependent on race.

Similarly, Hernandez-Murillo & Knowles (2004) examined reports of search rates by race, along with the number of searches that were permissive as opposed to mandatory or non-discretionary because police have the ability to exercise racial bias only when searches are not compulsory. An analysis of data from traffic stops made by police departments, sheriff departments, and state troopers in Missouri during 2001 resulted in 99,860 searches and 76,567 arrests. Data was analyzed by the rate of searches of drivers

by race (Hernandez-Murillo & Knowles, 2004, p. 968). The reports listed the numbers of searches that were incited by the types of probable cause used as pretext to conduct the search, which were consent searches. Regarding race of driver searches, 61,209 were related to White drivers; 20,574 were Black driver searches, and 2,869 were searches of Hispanic drivers. Of the total 84,652 searches, 44,475 were nondiscretionary, or Incident to the Arrest (ITA). There were 27 police agencies that reported no ITA searches of Whites, six agencies that reported no ITA searches of black drivers, and six agencies that reported no ITA searches of Hispanic. An Incident to the Arrest (ITA) search is ordered if the search follows an arrest made on the traffic stop which requires the police officer to search the driver and the vehicle. Most of the police bias detected was directed against Hispanics rather than Blacks.

Hernandez-Murillo and Knowles determined that African Americans and Hispanics were stopped and searched more, and these searches seemed to be related to race. In terms of the outcome rate, drugs were more likely to be found in searches of White (19.7%) than either African American (12.3%) or Hispanic (9.8%) drivers (Hernandez-Murillo & Knowles, 2004, p. 973). Findings indicated that a large portion of searches in Missouri are carried out by police forces that display prejudice against minority motorists. Most biases seem to be focused on opposition to Hispanic rather than black motorists.

In a study by Higgins, Vito, and Grossi (2012), examined traffic stop data to determine racial differences in drivers that were searched. Their study provides additional evidence of how race plays a part in police officers' decision to search individuals. Data were collected from self-reports of the officers making the traffic stop

using a two-sided scantron. The dependent measure for this study was whether a consent search was conducted. The sample included cases of 3,717 traffic stop searches. There were 966 consent searches and 2,751 searches without consent being given. Pertaining to ethnicity, the sample consisted of 1,859 Black motorists to determine if Blacks gave consent to be searched more than Whites. It was revealed that the number of Whites, 2,721 were non-consent searched; however, 2,765 Blacks were non-consent searched. These findings support the belief that Blacks are searched more than Whites, yet the differences are small.

In addition, there are two reasons why racial bias is an even greater concern in the context of searches. The search decision raises the intrusiveness and seriousness of the traffic stop for the driver because it changes the potential suspicion from a traffic violation to an implication of criminal activity. Yet this decision is not without legal limits. The driver may also voluntarily consent to a search and thus eliminate the need to establish probable cause (Farrell et al., 2005, pp. 82-83). Some scholars have argued that the consent search is the ultimate exercise of police search discretion because the officer is not “duty bound” to conduct a search (Totman & Steward, 2006, p. 1). In their analysis of statewide Texas traffic stop data from 2003, Totman and Steward (2006, p. 5, 10) found that two thirds of law enforcement agencies reported consent searching of Blacks or Latinos at higher rates than Anglos following a traffic stop and that they “rarely uncover wrongdoing.”

In a manuscript, Fallik and Novak (2012) examined the police officer decision making process during automobile traffic stops to determine whether Black and Hispanic drivers were searched at dissimilar rates to non-minorities. Using data collected by a

large Kansas City police department (KCPD), the sample consisted of 122,209 stops in 2009. Encounters were eliminated from the current analyses if the driver had an outstanding warrant, pedestrian stops were eliminated because the researchers were interested in automobile searches, and cases that involved nonpatrol officers were excluded. There were 4,569 automobile stops in the sample, of which 525 or 11.5 % cases resulted in a search. Blacks were involved in 2,271 of the automobile stops whereas Hispanics were involved in 256 of the automobile stops. The proportion of Blacks searched (291) is greater than the proportion of non-Blacks searched (234). Similarly, Blacks were more likely to be the subject of discretionary searches than non-Blacks (137 vs. 106). Hispanic drivers searched were higher than non-Hispanics (39 vs. 486; 20 vs. 262; 19 vs. 224). The reported results for Blacks do not indicate convincing evidence to suggest race was used to predict a search. Fallik and Novak's study concluded that overall minorities were searched more often; it was not because of driver race or ethnicity but the different conditions under which the citizen was stopped by the officer. The researchers' findings differ from the extant research because these results indicate a further diminishing influence of race and ethnicity for discretionary decisions. Results are consistent with Higgins et al. (2008) findings and are contrasting to the "driving while black/brown" phenomenon that appears throughout the automobile racial profiling research literature. Similarly, Pickerill et al. (2009) noted other related factors are perhaps superior to race when police officers decide to search drivers for automobile traffic stops.

According to Durose, Smith, and Langan (2007), approximately 4.8% of all traffic stops were reported being searched by citizens. Moreover, the survey indicated a

search differs by the race and ethnicity of the driver: 9.5% of Blacks and 8.8% of Hispanic/Latino drivers indicate being searched during traffic stops, whereas Whites reported being searched only 3.6% of the time.

Durose et al. (2007; p. 5) expounds on this issue:

[B]lacks were more likely than Whites to be searched during a traffic stop.

However, the apparent disparities documented in this report do not constitute proof that police treat people differently along demographic lines. Any of these disparities might be explained by countless other factors and circumstances that were not considered in the analysis.

Number of Arrests for Traffic Violations

Research has shown that males are more likely to be stopped and ticketed on a traffic stop. Since males are stopped on traffic stops by police at a higher rate than females, their arrest rate should also reflect a higher percentage of arrest than female drivers. According to US Department of Justice Office of Justice Programs Bureau of Justice Statistics and Davis (2018) report revealed in *(Table 12) Outcomes of traffic stops, by driver demographic characteristics, 2015* during a traffic stop, males (5%) were more likely than females (2%) to experience a vehicle or personal search or be arrested (p. 12). The report indicated that there were no other significant differences between males and females in the type of enforcement actions resulting from traffic stops. It is clear based on research that gender plays an important part of a police officer's decision to arrest male drivers at the conclusion of the traffic stop.

Dunn (2016) examined traffic stop patterns within Cuyahoga County (areas of Shaker Heights, Brook Park, Cleveland, and Westlake. In addition to data on the race

and gender of the motorist, the traffic ticketing data requested from each jurisdiction included the date and location of the traffic stop, the year and make of the vehicle, the offenses the motorist was cited for, if the vehicle was involved in an accident, and whether an arrest was made. In general, the race of the motorist, the location, whether an arrest was made, and whether the vehicle was involved in an accident were the primary variables on the traffic tickets that were used to analyze the traffic ticketing data from the various jurisdictions.

Turning to traffic stops in which an arrest was made, Blacks accounted for 3,700 of the 5,098 arrests. Whites were twenty-two percent (1,127) of those arrested because of a traffic stop or citation, and other minorities were six percent. Driving under suspension or revocation was the offense related to the majority of arrests at thirty-five percent (1,771), followed by driving without a driver's or commercial driver's license, which accounted for eleven percent (574) of arrests, and "speeding" which constituted six percent (291) of arrests. In that Blacks were the overwhelming majority of those cited for "driving under suspension or revocation" (seventy-nine percent), they were likewise the majority of those arrested. Given their percentage of the driving population and with all other factors being equal, Blacks were arrested at 1.86 times their percentage of all motorists. Other minorities and Whites were arrested less than would be expected given their proportion of the driving population, at seventy-five percent and forty percent of arrest respectively. In comparison to Whites, Blacks were almost four and two-thirds times (4.65) as likely to be arrested after a traffic stop resulting in a ticket, while other minorities were almost twice (1.87) as likely to be arrested in association with a traffic citation as Whites.

Seguino and Brooks (2017) investigated state level traffic arrests. The Black arrest rate almost doubled the White arrest rate. At the agency level, disparities differ. For example, at the high end, Black drivers stopped by Rutland police are 2.6 times more likely to be arrested than White drivers, subsequent to a discretionary stop (excluding arrests on warrant), and in Williston, 2.3 times more likely. Black drivers in Vermont are more likely to be arrested after a stop than any other racial/ethnic group. In 2015, using statewide data, the Black arrest rate was almost twice the White arrest rate (2.1% for Black drivers compared to 1.2% for White drivers). The number of arrests of Black, Asian, and Hispanic drivers by individual agency is too low in most agencies to make reliable statistical inferences. The data provided on hit rates only indicate whether contraband was found or not, but no information was gathered on the amount of contraband. Hit rates were examined in two ways by Seguino and Brooks. First, hit rates were calculated in cases involving arrests, issuance of a ticket or both. Second, hit rates that resulted in arrests are only reported for Black and White drivers, because information was limited for Asians and Hispanics.

After Pierson et al. (2020) examined the extent in which there are racial disparities in stop, citation, search, and arrest rates, they found that Blacks and Hispanics are more likely to be ticketed, searched, and arrested more than White drivers. Of the 50 state agencies, data from vehicle stops from 18 states occurring in 2011–2015 was used in the study. For each stop recorded, the researchers attempted to obtain the date and time of the stop; the county or state patrol district where the stop occurred; the race, gender and age of the driver; reason for the stop; if a search was conducted; reason for the search (probable cause or consent); and the stop outcome (citation or an arrest). The findings

revealed that black drivers are arrested in 2.8% of stops and Hispanic drivers in 3.4% of stops, compared to 1.7% for White drivers. In other words, black drivers have 1.9 times the chance of being arrested, while Hispanic drivers have 2.0 times the probability of being arrested in comparison to White drivers. Based on the findings, it was recommended that states collect individual-level stop data that include the date and time of the stop; the location of the stop; the race, gender, and age of the driver; the stop reason; whether a search was conducted; the search type (probable cause or consent); the result of the stop (a citation or an arrest); and the specific traffic violation the driver was charged.

Summary

Driving violations have been identified as one of the prominent contributing factors to motorist accidents. A routine traffic stop occurs when a police officer observes a motorist who is committing a traffic violation and pulls them over with the main intention of issuing a ticket or a warning to the motorist. In the traffic stop decision-making process, officers have given tickets by gender, which has led male drivers receiving more tickets compared to female drivers. This finding was supported by the number of fines and accidents that were greater among male drivers who have a higher tendency to commit traffic violations. Most studies reveal that African American males receive more tickets and arrests for traffic violations, followed by Hispanic Americans. In addition, males are ticketed more than female drivers.

CHAPTER 3

DESIGN OF THE STUDY

The purpose of this study was to examine the impact of race and gender disparities in police traffic stops as they relate to the number of tickets issued, number of consent searches and number of arrests of traffic violators in the southern region of Texas. Specifically, this study was concerned with the predictable relationship between the variables gender (number of male violators and number of female violators) ethnicity (number of African American, number of Asian American, number of Caucasian, number of Hispanic American, and number of other racial groups) and the number of tickets issued, number of consent searches, and number of arrests of traffic violators by Texas Law Enforcement Agencies.

This chapter includes the following sections: (1) Type of Design, (2) Population, (3) Sampling Procedure, (4) Data Source, (5) Data Collection, (6) Independent and Dependent Variables, Null Hypotheses, (9) Statistical Analysis, and Evaluation of Statistical Assumptions.

Type of Research Design

The researcher employed a correlation design in this investigation (See Figure 1). “Correlation research will allow the researcher to determine if a relationship exists between two or more quantifiable variables” (Mills & Gay, 2016). Specifically for this study the researcher employed the correlation design to determine if a relationship exists between independent variables (e.g., violator’s race, violator’s gender) and dependent variables (e.g., number of tickets issued, the number of traffic related consent searches

conducted, and arrested at the conclusion of the traffic stop). The correlation design enables the researcher to make predictions about the variables in the study. Gay and Mills (2016) state that correlation design in research studies may determine relationships and further investigates to make predictions about the variables (p. 216).

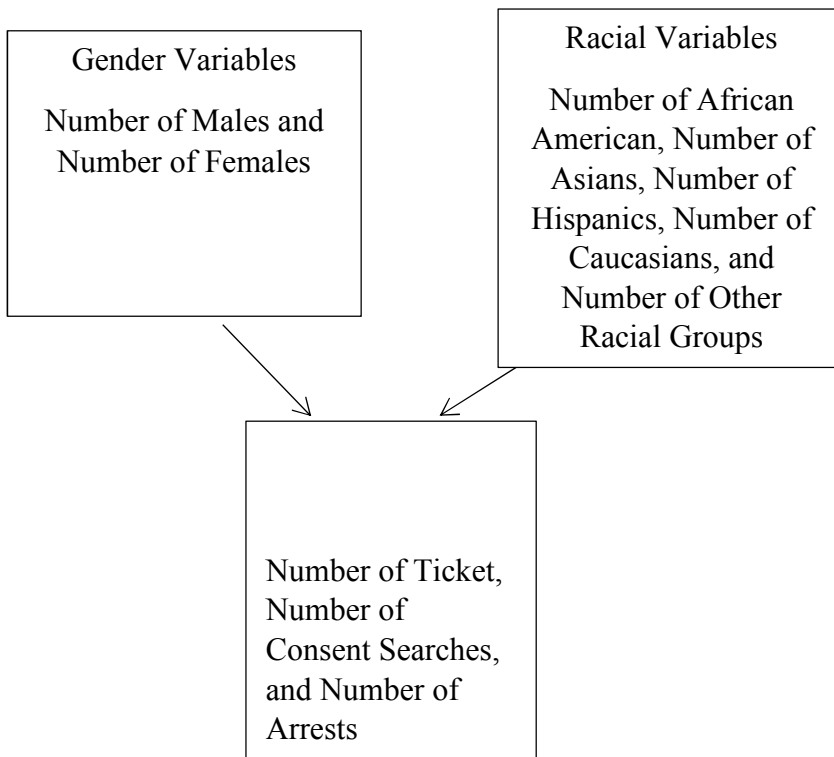


Figure 1. Correlational Research Design

Population

The target population for this study consisted of 21 Texas Law Enforcement Agencies in the Houston metropolitan area of the state of Texas, Harris County. This included Law Enforcement Agencies from college/university police departments, the Houston Police Department, Harris County Constables Offices, Harris County Sheriff's Office, and Independent School District Police Departments following the approval from an Institutional Review Board of the University for the Protection of Human Subjects.

External Secondary data were employed in this study from the fore stated Agencies/ Police Departments.

Sampling Procedure

This study utilized the nonprobability purposive sampling technique. According to Gay and Mills (2016), this type of sampling procedure provides the researcher the opportunity to focus on specific characteristics of a population of interest to answer his/her research questions. In addition, this sampling procedure allowed the researcher to select law enforcement agencies based on a variety of criterion common to those who are selected to participate in the study. In the current study, the following criterion was used to select the sample:

1. The participant must be a law enforcement agency;
2. The participant must be located in the state of Texas and
3. The participant must have archival data regarding the independent and dependent variable selected for this study.

Data Collection Procedures

Once approval was received from the University's Institutional Review Board, (IRB) to conduct the study, the researcher employed secondary data for the purpose of this study. Secondary data provides analysis of data over time to current time period (Page, 2010). The external secondary data for this study was retrieved from each Harris County Law Enforcement Agency's Racial Profiling Report that are required to be submitted to the Texas Commission on Law Enforcement (TCOLE) on a yearly basis. The external secondary data retrieved for purposes of this study were published materials available for public record and permissible by constituents.

Once the data base was provided by the Texas Commission on Law Enforcement (TCOLE), the researcher compiled and downloaded the data into a computerized system. During this process the data was recoded by the researchers. Finally, the coded traffic data was entered into a statistical software package by the researchers. For this purpose, the Statistical Package for Social Sciences (SPSS) was used.

Data Source

The data sets for this study are based on the yearly racial profiling report that are submitted to the Texas Commission on Law Enforcement by Texas Law Enforcement Agencies. On August 30, 1965, during the 59th Legislature, *Senate Bill 236* created The Texas Commission on Law Enforcement (Commission). The Texas Commission on Law Enforcement was created as a voluntary program to improve proficiency in law enforcement and received funding through federal grants and donations from private foundations. The Commission held rule-making authority through Chapter 1701 of the Occupations Code and related statutes.

“Sec. 1701.151. General Powers of Commission; Rulemaking Authority.

The commission may:

- (1) adopt rules for the administration of this chapter and for the commission’s internal management and control;
- (2) establish minimum standards relating to competence and reliability, including education, training, physical, mental, and moral standards, for licensing as an officer, county jailer, or public security officer;
- (3) report to the governor and legislature on the commission’s activities, with recommendations on matters under the commission’s jurisdiction, and make other reports that the commission considers desirable;
- (4) require a state agency or a county, special district, or municipality in this state that employs officers or county jailers to submit reports and information;

(5) contract as the commission considers necessary for services, facilities, studies, and reports required for:

- (A) cooperation with municipal, county, special district, state, and
- (B) federal law enforcement agencies in training programs; and

(6) conduct research and stimulate research by public and private agencies to improve law enforcement and police administration.

Texas Occupations Code 1701.164 specifies that TCOLE collect incident-based data in accordance with the Code of Criminal Procedure Article 2.131 – 2.138. Chief administrators of law enforcement agencies that meet the criteria must submit racial profiling reports to *their governing body*, as well as TCOLE. Each agency must file an **annual** online report by selecting and completing the reporting option that applies to their particular situation. Reports are filed online through the Texas Commission on Law Enforcement Data Distribution System, TCLEDDS. The reporting period for the **previous** year begins on January 1 of the current year and ends on March 1 of the current year.

TCOLE Racial Profiling Reports: <https://www.tcole.texas.gov/content/racial-profiling-reports>

The Reporting options are:

1. **Exempt** - Agencies that do not routinely make motor vehicle stops should fill out the 1 page online exempt status form. The exempt status report contains agency public contact information for questions about its racial profiling filing status. Some agencies are not required to file annual reports.
2. **Full Reporting** - Agencies that routinely perform traffic stops or motor vehicle stops must file by online report. The online report requires the completion of agency public contact information and requires completion of **both**:

- a one-page online form about the numbers of motor vehicles stops made and uploading a separate PDF document containing a statistical analysis of its motor vehicle stops compared to the gender and ethnic population of the agency's reporting area.
- The second document must also contain a statement as to if racial profiling complaints were made against the agency and if so, a listing of all racial profiling complaints and the corresponding resolutions.

The researcher employed the following quantitative secondary data from Law Enforcement Agencies/ Police Departments: Number of males, number of females, number of African American, number of Caucasians, number of Hispanics, number of Asians, and Other racial groups, number of tickets, number of consent searches, and number of arrests.

Null Hypotheses

- H01: There is no statistically significant predictable relationship between the number of male and female traffic violators and number of tickets issued.
- H02: There is no statistically significant predictable relationship between the number of racial group traffic violators and number of tickets issued.
- H03: There is no statistically significant predictable relationship between the number of male and female traffic violators and number of consent searches.
- H04: There is no statistically significant predictable relationship between the number of racial groups, traffic violators and number of consent searches.

H₀₅: There is no statistically significant predictable relationship between the number of male and female traffic violators and number of arrests at the conclusion of traffic stops.

H₀₆: There is no statistically significant predictable relationship between the number of racial group, traffic violators and number of arrests at the conclusion of traffic stops.

Independent Variable and Dependent Variables

The researcher identified the seven independent variables for this study. They were the two gender variables (number of males and females), and the five racial variables (number of African American, number of Caucasians, number of Hispanics, number of Asians, and Other racial groups). These variables were assumed to have some influences on the dependent variables (e.g., the number of tickets issued, the number of traffic related consent searches conducted, and the number arrested at the conclusion of the traffic stop), which becomes the way implicit bias affects police discretion when used in ticketing and arrest decisions.

Statistical Analysis

The Multiple Regression statistical analysis was used for purposes of this study to determine predictive values for independent variables (e.g., violator's race and gender) on the dependent variables (e.g., the number of tickets issued, the number of traffic related consent searches conducted, and arrested at the conclusion of the traffic stop). Multiple Regression will allow the researcher to view more than one predictor at a time (Mertler & Vannatta, 2013). The purposes of the Multiple Regression predicts the value from a single dependent variable (Mertler & Vannatta, 2013; Harris, 1998). In this Statistical

method in Multiple Regression is seeking to determine correlation exists. The procedure in this Statistical method is determined by multiple correlation with a R symbol. “The multiple correlation is essentially equivalent to the Pearson correlation between the actual, or observed, values and the predicted values on the dependent variable” (Mertler & Vannatta, 2013, p.).

Statistical Assumptions

The following assumptions associated with Multiple Regression:

1. Multiple linear regression requires the relationship between the independent and dependent variables to be linear.
2. The multiple linear regression analysis requires that the errors between observed and predicted values should be normally distributed.
3. Multiple linear regression assumes that there is no multicollinearity in the data. Multicollinearity occurs when the independent variables are too highly correlated with each other.
4. Multiple linear regression is homoscedasticity. A scatterplot of residuals versus predicted values is good way to check for homoscedasticity. There should be no clear pattern in the distribution; if there is a cone-shaped pattern, the data is heteroscedastic.

CHAPTER 4

RESULTS

The purpose of this study was to examine the impact of race and gender disparities in police traffic stops as they relate to the number of tickets issued, number of consent searches and number of arrests of traffic violators in the southern region of Texas, Harris County. Specifically, this study was concerned with the predictable relationship between the variables gender (number of male violators and number of female violators) ethnicity (number of African American, number of Asian American, number of Caucasian, number of Hispanic American, and number of other racial groups) and the number of tickets issued, number of consent searches, and number of arrests of traffic violators by Texas Law Enforcement Agencies.

The study sought to answers the following questions:

1. Does the number of male and female traffic violators have any predictive power regarding the number of tickets issued by officers of Texas Law Enforcement Agencies?
2. Does the number of various racial groups of traffic violators (African American, Asian American, Caucasian, Hispanic American, and Other American) have any predictive power regarding the number of tickets issued by officers of Texas Law Enforcement Agencies?
3. Does the number of male and female traffic violators have any predictive power regarding the number of consent searches by officers of Texas Law Enforcement Agencies?

4. Does the number of various racial groups of traffic violators (African American, Asian American, Caucasian, Hispanic American, and Other Americans) have any predictive power regarding the number of consent searches by officers of Texas Law Enforcement Agencies?
5. Does the number of male and female traffic violators have any predictive power regarding the number of arrests at the conclusion of traffic stops by officers of Texas Law Enforcement Agencies?
6. Does the number of various racial groups of traffic violators (African American, Asian American, Caucasian, Hispanic, and Other American) have any predictive power regarding the number of arrests at the conclusion of traffic stops by officers of Texas Law Enforcement Agencies?

A sample of twenty-five (25) Texas Law Enforcement Agencies was originally selected to participate in the study. Of the 25 agencies, twenty-one (21) provided all the 2018 archival data needed to conduct the study. The result section used a regression model that consisted of four major statistical sections. Section one contained the analysis concerning the demographic characteristics of the participants in the study. Section two dealt with the mean and standard deviation analyses pertaining to the predictor (independent) and criterion (dependent) variables. Section three presented the correlational analysis regarding the relationship between the predictors and criterion variables. Finally, the Standard Multiple Regression procedures including the multiple correlation procedure were used to test the aforementioned hypotheses. All hypotheses were tested at the .05 level or better.

Demographic Characteristics of Participants in the Study

There were 21 Texas Law Enforcement agencies that participated in the study. The law enforcement agencies were described demographically by type and size of the law enforcement agencies and size of the department.

Type of Law Enforcement Agencies

The variable type of law enforcement agency was categorized into five distinct groups for this study. Six or 28.5 percent of the law enforcement agencies were city police departments and four or 19 percent of them were colleges and universities police departments. On the other hand, six or 28.5 percent of the law enforcement agencies were constable law enforcement and four or 19 percent of them were school district police departments. Finally, one or .5 percent of the law enforcement agencies was identified as the sheriff department. See Table 1 for these results.

Table 1

Frequency Distribution of the Participants by Type of Law Enforcement Agencies

| Type of Agencies | Number | Percent |
|------------------------|--------|---------|
| Police Department | 6 | 28.6 |
| College and University | 4 | 19.0 |
| Constable | 6 | 28.6 |
| School District | 4 | 19.0 |
| Sheriff | 1 | 4.8 |
| Total | 21 | 100.0 |

Size of Law Enforcement Agencies

The variable size of law enforcement agencies was classified into three groups for this empirical investigation. There were 2 or 9.5 percent of the law enforcement agencies identified as large and 11 or 52.4 percent of them were identified as medium. Finally, 8 or 38.1 percent of the law enforcement agencies were identified as small. See Table 2 for these findings.

Table 2
Frequency Distribution of Size of Law Enforcement Agencies

| Size of Agencies | Number | Percent |
|------------------|--------|---------|
| Large | 2 | 9.5 |
| Medium | 11 | 52.4 |
| Small | 8 | 38.1 |
| Total | 21 | 100.0 |

Mean and Standard Deviations Results

The mean and standard deviation as descriptive statistics (See Table 3) were computed on the predictor and criterion variables utilized in the regression model. The mean number of female traffic violators was 11,129.76 (SD =25,764.70), whereas the mean number of male traffic violators was 19,956.43 (SD=52,957.64) in 2018 as recorded by the law enforcement agencies participating in the study.

Moreover, on the average, there were 10,025.40, 1,594.57, 12,353.76, 6,843.76 and 255.76, African American, number of Asian, number of Caucasians, number of Hispanics, and number of other, respectively. Additionally, the mean number of tickets issued to the traffic violators was 18,425.24 (SD=50,091.84). Finally, on the average, these were 507.24 arrests made by law enforcement agencies for traffic violations in 2018.

Table 3

Mean and Standard Deviation Results Regarding the Independent (Predictor) and Dependent (Criterion) Variables

| Variables | Mean | Standard Deviation |
|-----------------------------|-----------|--------------------|
| Number of Males | 19,956.43 | 52,957.64 |
| Number of Females | 11,129.76 | 25,764.70 |
| Number of African Americans | 10,025.90 | 27,953.80 |
| Number of Asian | 1594.57 | 3657.93 |
| Number of Caucasians | 12,353.76 | 34,248.73 |
| Number of Hispanics | 6843.48 | 12812.02 |
| Number of Other | 255.76 | 1007.33 |
| Number of Tickets | 18,425.24 | 50,091.84 |
| Number of Consent Searches | 427.33 | 1552.64 |
| Number of Arrests | 507.24 | 1467.86 |

Correlational Results Regarding the Independent and Dependent Variables

Correlational analyses (See Table 4) using the Pearson Product Movement Correlation was used to determine the relationship between the quantitative variables presented in the present study. Regarding the gender variables, number of male traffic violators was statistically significant related to the number of tickets issued ($r=.999$), number of consent searches ($r=.965$), and number of arrests ($r=.940$). Likewise, the number of female traffic violators was significantly positively related to the number of tickets issues ($r=.991$), number of consent searches ($r=.937$), and number of arrests ($r=.909$).

Moreover, the number of African American violators was positively related to the number of tickets issued ($r=.999$), number of consent searches ($r=.976$), and number of arrests ($r=.953$). In addition, the number of Asian violators was statistically related to number of tickets issued ($r=.960$), number of consent searches ($r=.885$), and number of arrests ($r=.856$).

Furthermore, the variable number of Caucasian violators was statistically positively related to the number of tickets issued ($r=.999$), number of consent searches ($r=.972$), and number of arrests ($r=.947$). Also, the variable number of Hispanic violators was found to be positively related to the number of tickets issued ($r=.922$), number of consent searches ($r=.815$), and number of arrests ($r=.784$). Finally, the number of other traffic violators was found to be significantly positive related to number of tickets issued ($r=.967$), number of consent searches ($r=.998$), and number of arrests ($r=.978$).

Table 4
Correlational Results Between the Independent and Dependent Variables

| Independent (Predictors) | Criterion Variables | | |
|----------------------------|---------------------|------------------|---------|
| | Tickets | Consent Searches | Arrests |
| Number of Males | .999*** | .965*** | .940*** |
| Number of Females | .991*** | .977*** | .909*** |
| Number of African American | .999*** | .976*** | .953*** |
| Number of Asian | .960*** | .885*** | .856*** |
| Number of Caucasians | .999*** | .972*** | .856*** |
| Number of Hispanics | .922*** | .815*** | .784*** |
| Number of Other Americans | .967*** | .998*** | .998*** |

*Significant at the .05 level

**Significant at the .01 level

***Significant at the .001 level

HO₁: There is no statistically significant predictable relationship between the number of male and female traffic violators and number of tickets issued by officers of Texas Law Enforcement agencies.

Reported in Table 5 are the standard multiple regression results pertaining to the predictable relationship between the number of male and female traffic violators and number of tickets issued. The multiple regression model for hypothesis one yielded a multiple correlation (R) of .999. The two gender variables together accounted for 99.8 percent (Adjusted = 99.8%) of the variance in number of tickets issued. Hypothesis one was rejected.

A linear relationship existed between the number of male violators, number of female violators and the number of tickets issued ($F(2,18) = 4659.816, P < .001$). The

variable number of male violators was found to be an independently predictor of number of tickets issued ($t(18) = 11.979, P < .001$). Hypothesis one was rejected.

Table 5
Standard Multiple Regression Results Regarding the Relationship Between the
Number of Males and Female Traffic Violators and Number of Tickets

| Model | B | SE | Beta | t | P |
|----------|--------|---------|-------|--------|---------|
| Constant | 96.748 | 611.550 | | | |
| Male | 1.118 | .093 | 1.181 | 11.979 | .000*** |
| Female | -.357 | .192 | -.184 | -1.862 | .079 |

Note: $R = .999$; $R \text{ Square} = .998$; $\text{Adjusted } R \text{ Square} = .998$; $F = 4659.816$; $df = 2, 18$; $P = .000$ ***

***Significant at the .001 level

HO₂: There is no statistically significant predictable relationship between the number of racial groups traffic violators and number of tickets issued by officers of Texas Law Enforcement Agencies.

Shown in Table 6 are the standard multiple regression analyses concerning the relationship between the number of racial groups (African Americans, Asians, Caucasians, Hispanics, and Other Americans) traffic violators and number of tickets issued. The regression model for hypothesis two resulted in a multiple correlation (R) of .999. The five racial variables combined were found to explain 99.9 percent (Adjusted = 99.8%) of the variance in number of tickets issued.

A statistically significant linear relationship was found to exist between the five racial variables and the number of tickets issued ($F(5,15) = 2476.19, P < .000$).

Moreover, the variable the number of Caucasians was an independent predictor of number of tickets issued ($t(15) = 2.545, P < .05$). Thus, hypothesis two was rejected.

Table 6
Standard Multiple Regression Results Regarding the Relationship Between the
Number of Racial Groups Traffic Violators and Number of Tickets Issued

| Model | B | SE | Beta | t | P |
|-------------------|---------|---------|-------|-------|-------|
| Constant | 113.334 | 535.667 | | | |
| African Americans | -.139 | .816 | -.078 | -.171 | .869 |
| Asians | -.634 | .668 | -.046 | -.950 | .357 |
| Caucasians | 1.475 | .580 | 1.009 | 2.545 | .022* |
| Hispanic | .270 | .220 | .069 | 1.229 | .238 |
| Other | 2.542 | 5.366 | .051 | .474 | .642 |

Note: $R = .999$; $R\text{ Square} = .999$; $\text{Adjusted } R\text{ Square} = .998$; $F = 2476.19$; $df = 5, 15$; $P = .000$ ***

*Significant at the .05 level

***Significant at the .001 level

HO₃: There is no statistically significant relationship between the number of male and female traffic violators and number of consent searches by officers of Texas Law Enforcement agencies.

Indicated in Table 7 are the standard multiple regression findings regarding the relationship between number of male and female traffic violators and number of consent searches. The regression model for hypothesis three yielded a multiple correlation coefficient (R) of .990. The two gender variables collectively accounted for 98 percent (Adjusted = 97.8%) of the variance in the number of consent searches.

A significant linear relationship was found to exist between the gender predictors (number of male violators and number of female violators) and the number of consent searches ($F(2, 18) = 449.124, P < .001$). When the variable number of female violators was controlled, the number of male violators was found to contribute significantly to the number of consent searches ($t(18) = 9.716, P < .001$). Also, when the variable number of male violators was controlled, the number of female violators was found to contribute significantly to the number of consent searches ($t(18) = -6.688, P < .001$). Accordingly, hypothesis three was rejected.

Table 7

Standard Multiple Regression Results Regarding the Relationship Between the Number of Male and Female Traffic Violators and Number of Consent Searches

| Model | B | SE | Beta | t | P |
|----------|--------|--------|--------|--------|---------|
| Constant | 49.698 | 60.511 | | | |
| Male | .090 | .009 | 3.059 | 9.716 | .000*** |
| Female | -.127 | .019 | -2.106 | -6.688 | .000*** |

Note: $R = .990$; $R\text{ Square} = .980$; $\text{Adjusted } R\text{ Square} = .978$; $F = 449.124$; $df = 2, 18$; $P = .000***$

***Significant at the .001 level

HO₄: There is no statistically significant predictable relationship between the number of racial groups traffic violators and number of consent searches by officers of Texas Law Enforcement Agencies.

Revealed in Table 8 are the standard multiple regression results regarding the relationship between the number of racial groups traffic violators (African Americans, Asians, Caucasians, Hispanics, and other Americans) and number of consent searches.

The multiple regression model pertaining to hypothesis four yielded a multiple correlation (R) of .998. The five racial predictors together were found to explain 99.7 percent (adjusted = 99.6%) of the variance in number of consent searches.

A statistically significant linear relationship was found between the five racial variables and the number of consent searches ($F(5,15) = 995.615, P < .001$) at the .001 level. In addition, the variable number of Other Americans was found to be an independent predictor of the number of consent searches ($t(15) = 6.406, p < .05$). Consequently, hypothesis four was rejected.

Table 8
Standard Multiple Regression Results Regarding the Relationship Between the Number of Racial Groups Traffic Violators and Number of Consent Searches

| Model | B | SE | Beta | t | P |
|-------------------|--------|--------|-------|--------|---------|
| Constant | 14.183 | 26.180 | | | |
| African Americans | -.034 | .040 | -.604 | -.841 | .414 |
| Asians | -.048 | .033 | -.112 | -1.460 | .165 |
| Caucasian | .023 | .028 | .497 | .796 | .438 |
| Hispanics | .017 | .011 | .142 | 1.600 | .131 |
| Other | 1.679 | .262 | 1.089 | 6.406 | .000*** |

Note: $R = .998$; $R \text{ Square} = .997$; $\text{Adjusted } R \text{ Square} = .996$; $F = 995.615$; $df = 5, 15$; $P = .000$ ***

***Significant at the .001

HO₅: There is no statistically significant predictable relationship between the number of male and female traffic violators and number of traffic arrests at the conclusion of traffic stops by officers of Texas Law Enforcement Agencies.

Presented in Table 9 are the standard multiple regression results pertaining to the relationship between the number of male and female traffic violators and number of traffic arrests. The multiple regression model for hypothesis five yielding a multiple correlation (R) of .973. The two gender variables of the number of male violators and number of female violators combined were found to explain 94.7 percent (Adjusted = 94.1%) of the variance in number of traffic arrests.

A statistically significant linear relationship was found to exist between the two gender variables and the number of traffic arrests ($F(2, 18) = 160.620, P < .001$).

Additionally, the number of male violators ($t(18) = 6.399, P < .001$) and the number of female violators ($t(18) = -4.607, P < .001$) were found to be independently predictors of number of traffic arrests. Conversely, hypothesis five was rejected.

Table 9

Standard Multiple Regression Results Regarding the Relationship Between the Number of Male and Female Traffic Violators and Number of Traffic Arrests

| Model | B | SE | Beta | t | P |
|----------|---------|--------|--------|--------|---------|
| Constant | 187.273 | 94.019 | | | |
| Male | .092 | .014 | 3.311 | .399 | .000*** |
| Female | -.136 | .029 | -2.384 | -4.607 | .000*** |

Note: R = .973; R Square = .947; Adjusted R Square = .941; F = 160.620; df = 2, 18; P = .000***

***Significant at the .001 level

HO₆: There is no statistically significant predictable relationship between the number of racial group traffic violators and number of traffic arrests at the conclusion of traffic stops by officers of Texas Law Enforcement Agencies.

Illustrated in Table 10 are the standard multiple regression analyses regarding the relationship between the number of racial groups, traffic violators and number of traffic arrests. The regression model for hypothesis six yielded a multiple correlation coefficient (R) of .979. The five racial variables collectively accounted for 95.9 percent (Adjusted = 94.6%) of the variance in the number of traffic arrests.

A significant linear relationship was found to exist between the five racial predictors (African Americans, Asians, Caucasians, Hispanics, and other Americans) and the number of traffic arrests ($F(5,15) = 70.849, P < .001$). However, neither of the five racial variables was found to be an independent predictor of number of traffic arrests. Therefore, hypothesis six was rejected.

Table 10
Standard Multiple Regression Results Regarding the Relationship Between the
Number of Racial Groups Traffic Violators and Number of Traffic Arrests

| Model | B | SE | Beta | t | P |
|-------------------|---------|--------|--------|-------|------|
| Constant | 132.152 | 90.948 | | | |
| African Americans | .106 | .139 | 2.028 | .768 | .454 |
| Asians | -.051 | .113 | -.128 | -.452 | .658 |
| Caucasians | -.066 | .098 | -1.547 | -.674 | .511 |
| Hispanics | -.005 | .037 | -.043 | -.132 | .897 |
| Other | .946 | .911 | .649 | 1.039 | .315 |

Note: R=.979; R Square =.959; Adjusted R Square = .946; F= 70.849; df=5,15; P =.000***

***Significant at the .001 level

Summary of Hypotheses

Six null hypotheses were tested in this study. All six hypotheses were tested for the relationship and predictive power of number of male, number of female, number of African American, number of Asian, number of Caucasian, number of Hispanic, and number of other racial group violators on the number of tickets issued, number of consent searches, and number of arrests of traffic violators in the southern region of Texas, Harris County. Hypotheses one through six were found to be significant.

Relative to hypotheses one, three and five, the variables number of male and female violators were found to be statistically related to the number of tickets issued, number of consent searches, and number of arrests among these violators. The variable number of male violators were found to be an independent predictor of number of tickets issued, number of consent searches, and number of arrests. In addition, the variable number of female violators were found to be an independent predictor of number of consent searches and number of arrests.

Moreover, according to hypotheses two, four and six, the variables number of African American, number of Asian, number and Caucasian, number of Hispanic and other racial group violators were found to be significantly related to the number of tickets issued, number of consent searches, and number of arrests among these traffic violators. The variable number of Caucasian was an independent predictor of number of tickets issued. Also, the variable number of other racial group violators was an independent predictor of number of consent searches. See Table 11 for these results.

Table 11
Summary of All Null Hypotheses Tested

| Null Hypotheses | R | R ² | F | df | Conclusion |
|-----------------|------|----------------|------------|------|-------------|
| HO ₁ | .999 | .998 | 4659.82*** | 2,18 | Significant |
| HO ₂ | .999 | .999 | 2476.17*** | 5,15 | Significant |
| HO ₃ | .990 | .980 | 449.12*** | 2,18 | Significant |
| HO ₄ | .998 | .997 | 995.62*** | 5,15 | Significant |
| HO ₅ | .973 | .947 | 160.62*** | 2,18 | Significant |
| HO ₆ | .979 | .959 | 70.85*** | 5,15 | Significant |

***Significant at the .001 level

CHAPTER 5

SUMMARY, FINDINGS, DISCUSSION, CONCLUSION, IMPLICATIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to examine the impact of race and gender disparities in police traffic stops as they relate to the number of tickets issued, number of consent searches and number of arrests of traffic violators in the southern region of Texas, Harris County. Specifically, this study was concerned with the predictable relationship between the variables gender (number of male violators and number of female violators), ethnicity (number of African American, number of Asian, number of Caucasians, number of Hispanic and number of other ethnic groups) and the number of tickets issued, number of consent searches and number of arrests of traffic violators by officers of Texas Law Enforcement Agencies.

A correlational research design was employed in the present study. Twenty-one (21) Texas Law Enforcement Agencies participated in the present study. Archival data were collected from all the participating agencies concerning the independent and dependent variables.

Finally, the data were analyzed through the application of the Pearson Product Moment Correlation, Multiple Correlation, and the Standard Multiple Regression procedures. The following null hypotheses were formulated and tested in this study.

HO₁: There is no statistically significant predictable relationship between the number of male and female traffic violators and number of tickets issued.

HO₂: There is no statistically significant predictable relationship between the number of racial group traffic violators and number of tickets issued.

HO₃: There is no statistically significant predictable relationship between the number of male and female traffic violators and number of consent searches.

HO₄: There is no statistically significant predictable relationship between the number of racial groups traffic violators and number of consent searches.

HO₅: There is no statistically significant predictable relationship between the number of male and female traffic violators and number of arrests at the conclusion of traffic stops.

HO₆: There is no statistically significant predictable relationship between the number of racial group traffic violators and number of arrests at the conclusion of traffic stops.

Findings

The following findings were obtained from the results of the study:

1. A linear relationship was found between the number of male and female violators and the number of tickets issued by law.
2. The variable number of male violators was independently related to the number of tickets issued.
3. The variables number of African American, number of Asians, number of Caucasians, number of Hispanic and number of other racial group violators were statistically linear related to number of tickets issued.
4. The variable number of Caucasian violators was independently related to the number of tickets issued.

5. The variables number of male and number of female violators were significantly related to the number of consent searches.
6. Both variable's number of male and number of female violators did contribute significantly to the number of consent searches.
7. The variables number of African Americans, number of Asians, number of Hispanics, number of Caucasians and number of other racial group violators were statistically linear related to number of consent searches.
8. The variable other racial group violators were independently related to the number of consent searches.
9. The variables number of males and number of female violators were significantly related to the number of traffic arrests.
10. The variable number of male violators when the variable number of female violators was controlled and did contribute significantly to the number of traffic arrests.
11. The variable number of female violators was independently related to the number of traffic arrests.
12. Finally, the variable number of African Americans, number of Asians, number of Hispanics, number of Caucasians and other racial group violators were significantly linear related to the number of traffic arrests.

Discussion

Perhaps one of the most interesting findings of the present study was the significant influence of both gender variables (number of male violators and number of female violators) on the number of tickets issued, number of consent searches and

number of consent searches and number of arrests by officers of Texas Law Enforcement Agencies. To be sure, the gender variable was found to have a linear predictable relationship with the three above dependent variables.

Particularly, the gender variable number of males was found not only to be linearly related but also an independent predictor of number of tickets issued. These findings were consistent with those of Blalock, Devaro, Leventhal and Simon (2007), Gonzalez-Iglesions and Simon (2007), Lieu, Hamidus, and Soid (2017), Rowe (2009) and the Bureau of Justice Statistics (2015).

The aforementioned researchers found that male traffic violators were the ones more likely to receive a ticket than their female counterparts. A plausible explanation for these findings maybe that officers of law enforcement agencies perceived that males are more prone to committing traffic violations than female because of their aggressive nature. This stereotypical behavior stems from persuasive biases that some members of law enforcement agencies have against male violators, especially those from minority communities.

Moreover, the gender variables (number of male and number of female violators) were found to be statistically related to number of consent searches. Also, both gender variables were found to be independent predictors of the number of consent searches. These findings correspond to those of Pierson et al. (2020) and Gizzi and Clark (2016).

The above researchers found that the variable gender did have a predictable relationship with number of consent searches. A reasonable explanation for these findings may be that traffic violators regardless of their gender, are aware of the negative

consequences of not allowing members of law enforcement agencies to voluntarily search their vehicles.

Additionally, another notable finding pertained to the predictable relationship between the gender variable and number of arrests. The variables number of male and female violators was linear as well as independent predictors of number of traffic arrests on part of officers of Texas Law Enforcement Agencies. These findings did not parallel those of the Bureau of Justice Statistics (2018).

Research conducted by the Bureau of Justice Statistics reported that male violators were more likely to be arrested than their female peers. A subjective explanation for these findings may be irrespective of traffic violators' gender, the race of these violators could overshadow their gender and reinforce the discriminatory practices of some officers to arrest male and female at similar rate because of their minority status.

Furthermore, one of the most surprising findings of the current study was the significantly predictable relationship between racial variable (number of African Americans, number of Asians, number of Hispanics and other racial group violators) and the number of arrests given by officers associated with Texas Law Enforcement Agencies. The five racial variables were found to be significant linearly related to the number of tickets issued by officers of Texas Law Enforcement Agencies. These findings were favorable to those of Regoeczi and Kent (2014), Quintana (2017) and Seguíno and Brooks (2017). These researchers found similar findings regarding race and number of tickets issued.

Nevertheless, it is important to note that the variable number of Caucasian violators was found to be an independent predictor of number of tickets issued. These

findings were found not to be substantiated in works done by Pierson, et al (2020), Davis (2018), Liu and Sharma (2019) and Quintana (2017). An explanation for these findings may be because Caucasian violators, particularly those residing in Harris and related counties are more likely to have negative attitudes toward being stopped by officers for traffic violations. Because of this behavior, Caucasian violators might be receiving more tickets than warnings in these locations. Another explanation may be that Caucasian violators are the ones most likely to violate traffic norms. Because of the so-called White privilege, they believe that they should not receive a ticket for this behavior.

Additionally, another significant finding of the present study dealt with the predictable relationship between racial variable and number of consent searches. A significant linear relationship was found between the five racial variables and number of consent searches. These findings were supported in research conducted by Knowles, Persia, and Tobb (2001), Hernandez-Morillo and Knowles (2004), Higgins, Vito, and Gross (2012) and Totman and Steward (2006). All these researchers found that race was significant predictor of consent searches.

Further, the racial variable number of other racial group violators was found to be an independent predictor of number of consent searches. A reasonable explanation for these findings may be that minority traffic violators who were not African American or Hispanic do not view law enforcement officers in the same negative manner as these two groups. Because of this, they consent to voluntary searches more often than African American and Hispanic violators.

Finally, a statistically significant predictable relationship was found between the five racial variables and number of arrests. These findings were consistent with those of

Dunn (2016), Seguino and Brooks (20017) and Pierson et al. (2020). All the researchers found that there was a linear relationship between racial variables and number of arrests.

It is surprising to say the least that neither one of the five racial variables was found to be an independent predictor of number of arrests. A plausible explanation for these findings may be that most traffic violators who are stopped and receive more than a traffic citation, appear to have a high probability of being arrested. The implications of the study may impact or inform the creation or implementation of bias-based policing policies and the creation of bias-based police officer training programs that deal directly with Implicit Bias Awareness and its effect on police discretion.

Conclusions

The following conclusions were drawn from the results of this study: In general, it appeared that the variables number of male and number of female traffic violators do have some predictive power regarding the number of tickets issued to them by officers of Texas Law Enforcement Agencies. It appeared that the variables number of African Americans, number of Asians, number of Hispanics, and number of other racial groups traffic violators do have some predictive power with respect to the number of tickets issued to them by officers of Texas Law Enforcement Agencies. A regression model development to predict the number of consent searches among traffic violators should include the variable number of male and number of female violators. The variables number of African Americans, number of Asians, number of Caucasians, number of Hispanics, and number of other racial group violators should be included in a regression model to predict the number of consent searches by officers of Texas Law Enforcement Agencies. In general, it appeared that the variables number of male and number of

female violators, independently and combined were significant predictors of the number of traffic arrests by officers of Texas Law Enforcement Agencies. Finally, any attempt to predict the number of traffic arrests among violators can be explained by the number of their racial identities (African Americans, Asians, Caucasians, Hispanics, and other Americans).

Implications

The following implications were drawn from the results of the study: The significant impact of gender and racial variables on the number of tickets issued by officers during traffic stops suggest that law enforcement officials who are responsible for training these individuals should implement some form of Bias-Based policing policy. These policies should ensure that officers are fully aware of not allowing their personal biases to interfere with their behavior when issuing tickets. An awareness of these policies will help law enforcement officials in their attempt to educate their officers in dealing with all members of the public regardless of gender and race. Law Enforcement administrators and other concerned criminal justice officials should be cognizant of the impact that gender and racial variables have on the number of arrests made by officers during traffic stops. The number of arrests of minority violators, particularly African Americans and Hispanics suggest that there is a need to develop mandatory police officer training programs to promote positive thinking along with social skills when dealing with members of minority communities. Thus, in the long run, the number of arrests among minority groups will be in line with those of their Caucasian counterparts. Finally, the effect of the variables gender and race on the number of consent searches by law enforcement officers suggest that criminal justice officials should take a careful

examination of the importance of how these variables influence the interaction between the public and the police. An understanding of this relationship can help in improving the ways police officers are trained to handle a crisis.

Recommendations

To further extend the findings of this study, the researcher recommends that: A follow-up study should be conducted which will include more law enforcement agencies from various geographic regions. Such a study, if conducted, would provide additional data to better understand the relationship between gender and racial factors and violator behaviors. A study should also be designed to measure the independent and combined effects of the variables gender and race on the number of tickets issued, number of consent searches and number of arrests of traffic violators. Further studies can be designed to examine the predictability of psychological, demographic, and physiological variables on the behavior of officers during traffic stop violations. Finally future researchers should conduct studies to examine the attitudes of traffic violators toward police officer's behavior during traffic stop violations. As Spencer et al., (2016) explained, training is an important aspect of policing and will certainly be a component of any intervention that aims to reduce the effect of bias on policing decisions, but the content and delivery of such training need much more systematic investigation, (p. 58). When examining police discretion and the relationship between implicit bias and negative outcomes for African Americans at the conclusion of traffic stops, there has been limited research conducted as it relates particularly to the number of citations received, consent searches performed, and traffic stop related arrests. Future research should fill this gap in the literature.

REFERENCES

- Akers, R. L., & Sellers, C. S. (2004). *Criminological theories: Introduction, evaluation, and application (4th ed)*. Los Angeles: Roxbury Publishing.
- Alexander, M. (2012). *The New Jim Crow: Mass incarceration in the age of colorblindness*. New York: The New Press.
- Alpert, Geoffrey P., and Roger G. Dunham. 1997. Policing Urban America. Illinois: *Waveland Press*.
- Banaji, M. R. (2013). *Blind spot: Hidden biases of good people*. New York: Bantam Books.
- Banks, R. F. (2009). How does unconscious bias matter? Law, politics, and racial inequality. *Emory Law Journal*, 58, 1053.
- Banks, R. R., & Eberhardt, J. L. (2006). Discrimination and implicit bias in a racially unequal society. *California Law Review*, 94, 1169-1190.
- Benforado, A. (2015). *Unfair: The new science of criminal injustice*. New York: Broadway Books.
- Bernard, T. J., Snipes, J. B., & Gerould, A. L. (2010). *Vold's theoretical criminology*. New York: Oxford University Press.
- Black, H. C. (1969). *Black's law dictionary*. St. Paul, MN: West Publishing Co.
- Blalock, G., DeVaro, J., Leventhal, S., & Simon, D. H. (2007). Gender bias in power relationships: Evidence from police traffic stops. *Applied Economics*, 43(29)
DOI: 10.2139/ssrn.998464

- Blanks, J. (2016). Thin blue lines: How pretextual stops undermine police legitimacy. *Case Western Reserve Law Review*, 66(4), 931-946.
- Bonilla-Silva, E. (2016). *Racism without racists: Color-blind racism and the persistence of racial inequality in America (4th ed.)*. Lanham, Maryland: Rowman & Littlefield.
- Borgida, E. F. (2008). *Beyond common sense: Psychological science in the courtroom*. Malden, MA: Blackwell Publishing.
- Bronitt, S., & Stenning, P. (2011). Understanding discretion in modern policing. *Crime and Law Journal*, 35, 319-332.
- Chappell, A. T., & Piquero, A. R. (2004). applying social learning theory to police misconduct. *Deviant Behavior*, 25(2), 89–108.
<https://doi.org/10.1080/01639620490251642>
- Child, J. (1972). Organization structure, environment, and performance: The role of strategic choice. *Sociology*, 6(1), 1–22.
<https://doi.org/10.1177/003803857200600101>
- Childers, S. (2012). Discrimination during traffic stops: How an economic account justifying racial profiling falls short. *New York University Law Review (1950)*, 87(4), 1025-1059.
- Cressey, D. R. (1960). The theory of differential association: An introduction. *Social Problems*, 8(1), 2-6. <https://doi.org/10.2307/798624>
- Davis E. Contacts Between Police and the Public, 2015. US Department of Justice Office of Justice Programs Bureau of Justice Statistics Special Report. 2018;1-33.

Davis, K. C. (1969). *Discretionary Justice: A Preliminary Inquiry* [E-book]. LSU Press.

[https://www.amazon.com/Discretionary-Justice-Kenneth-Culp-](https://www.amazon.com/Discretionary-Justice-Kenneth-Culp-Davis/dp/0313225036)

[Davis/dp/0313225036](https://www.amazon.com/Discretionary-Justice-Kenneth-Culp-Davis/dp/0313225036).

Discretion. (n.d.) *A Law Dictionary, Adapted to the Constitution and Laws of the United*

States. By John Bouvier. (1856). Retrieved September 7, 2020, from [https://legal-](https://legal-dictionary.thefreedictionary.com/Discretion)

[dictionary.thefreedictionary.com/Discretion](https://legal-dictionary.thefreedictionary.com/Discretion)

Dunn, R. (2016). Racial profiling: A persistent civil rights challenge even in the

twenty-first century. *Case Western Reserve Law Review*, 66(4), 957-991.

Durose, M. R., Smith, E. L., & Langan, P. A. (2007). *Contacts between the police and the*

public, 2005. Washington, DC: Bureau of Justice Statistics.

Eberhardt, J. L., Goff, P. A., Purdie, V. J., & Davies, P. G. (2004). Seeing black: Race,

crime, and visual processing. *Journal of Personality and Social Psychology*,

87(6), 876–893. <https://doi.org/10.1037/0022-3514.87.6.876>

Faigman, D. L., Dasgupta, N., & Ridgeway, C. L. (2007). A matter of fit: The law of

discrimination and the science of implicit bias. *Hastings Law Journal*, 59, 1389-

1434.

Fallik, S. W., & Novak, K. J. (2012). The decision to search: Is race or ethnicity

important? *Journal of Contemporary Criminal Justice*, 28(2), 146–165.

<https://doi.org/10.1177/1043986211425734>

Farrell, A., Rumminger, J., & McDevitt, J. (2005). New challenges in confronting racial

profiling in the 21st century. *Institute on Race and Justice Publications*. Retrieved

from <http://www.racialprofilinganalysis.neu.edu/>

[spotlight/?article_id=949](http://www.racialprofilinganalysis.neu.edu/spotlight/?article_id=949)

- Feingold, J., & Lorang, K. (2010). Defusing implicit bias. *UCLA Law Review*, 59, 210-228.
- Fliss, M. D., Baumgartner, F., Delamater, P., Marshall, S., Poole, C., & Robinson, W. (2020). Re-prioritizing traffic stops to reduce motor vehicle crash outcomes and racial disparities. *Injury epidemiology*, 7(1), 3. <https://doi.org/10.1186/s40621-019-0227-6>.
- Forgas, J. W. (2004). *Social motivation: Conscious and unconscious processes*. New York: Cambridge University Press.
- Forman, S. J. (2015). The Ferguson effect: Opening the pandora's box of implicit racial bias in jury selection. *Northwestern University Law Review*, 109, 171-179.
- Fridell, L. (2017). Producing bias-free policing - A science based approach. *Springer*, 7-30.
- Gabbidon, S. L., & Greene, H. T. (2009). *Race and Crime* (2nd ed.). SAGE Publications.
- Gabbidon, S. L., & Greene, H. T. (2013). *Race and Crime* (3rd ed.). SAGE Publications.
- Garrett, T. A., & Wagner, G. A. (2009). Red ink in the rearview mirror: Local fiscal conditions and the issuance of traffic tickets. *Journal of Law & Economics*, 52(1), 7190. doi: 10.1086/589702
- Gizzi, M. C., & Curtis, R. C. (2016). *The fourth amendment in flux: The roberts court, crime control, and digital privacy*. University Press of Kansas. Retrieved November 27, 2020, from <http://www.jstor.org/stable/j.ctt1c2cqq6>
- Gladwell, M. (2005). *Blink: The power of thinking without thinking*. Little, Brown & Company: New York.

- González-Iglesias, B., Gómez-Fraguela, J. A., & Luengo-Martín, M. Á. (2012). Driving anger and traffic violations: Gender differences. *Transportation Research Part F-traffic Psychology and Behaviour*, *15*(4), 404-412.
- Greenwald, A. G. (2009). Understanding and using the implicit association test: III. meta-analysis of predictive validity. *Journal of Personality and Social Psychology*, *97*, 17-41.
- Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: Attitudes, self-esteem, and stereotypes. *Psychological Review*, *102*(1), 4.
- Greenwald, A. G., McGhee, D., Schwartz, J. M. R. (1998). Measuring Individual Differences in Implicit Cognition: The Implicit Association Test. *Journal of Personality and Social Psychology*, *74*(6), 1464-1480.
- Greenwald, A. G., & Krieger, L. H. (2006). Implicit bias: Scientific foundations. *California Law Review*, *94*, 945-967.
- Hahn, A. J. (2014). Awareness of implicit attitudes. *Journal of experimental psychology. General*, *143*, 1369–1392.
- Hernandez-Murillo, R., & Knowles, J. (2004). Racial profiling or racist policing? Bounds tests in aggregate data. *International Economic Review*, *45*(3), 959-989.
DOI: 10.1111/j.0020-6598.2004.00293.x
- Higgins, G. E., Vito, G. F., & Grossi, E. L. (2012). The impact of race on the police decision to search during a traffic stop: A focal concerns theory perspective. *Journal of Contemporary Criminal Justice*, *28*(2), 166–183.
<https://doi.org/10.1177/1043986211425725>

- Higgins, G. E., Vito, G. F., & Walsh, W. F. (2008). Searches: An understudied area of profiling. *Journal of Ethnicity in Criminal Justice*, 6(1), 23-40.
- Hummel, D. (2014). Traffic tickets public safety concerns or budget building tools. *Administration & Society*, 47(3), 298-319 . doi:10.1177/0095399714528178
- Joh, E. E. (2007). Discretionless policing: Technology and the fourth amendment. *California Law Review*, 95(1), 205.
- Jolls, C., & Sunstein, C. R. (2006). The law of implicit bias. *Yale Law School Legal Scholarship Repository*, 94, 969-996.
- Kahneman, D. (2019). *Thinking fast and slow* . New York: Farrar Straus Giroux.
- Kalinowski, J., Ross, M., & Ross, S. L. (2019c). Addressing seasonality in veil of darkness tests for discrimination: An instrumental variables approach. Working Papers 2019-028, Human Capital and Economic Opportunity Working Group.
- Kappeler, Victor E., Richard D. Sluder, and Geoffrey Alpert. 1998. Forces of Deviance: Understanding the Dark Side of Policing, 2nd ed. Prospect Heights, IL: *Waveland Press*.
- Knowles, J., Persico, N., & Todd, P. (2001). Racial bias in motor vehicle searches: Theory and evidence. *Journal of Political Economy*, 109(1), 203-229.
- Lakoff, G. (2002). *The metaphors we live by*. Chicago: The University of Chicago Press.
- Lee, C. (2013). Making race salient: Trayvon Martin and implicit bias in a not yet post-racial society. *North Carolina Law Review*, 91, 1555-1612.
- Levinson, J. (2007). Forgotten racial equality: Implicit bias, decisionmaking, and misremembering. *Duke Law Journal*, 57, 345-421.

- Levinson, J. D. (2010). Guilty by implicit racial bias: The guilty/not guilty implicit association test. *Ohio State Journal of Criminal Law*, 8, 187-208.
- Levinson, J. D., & Smith, R. J. (2012). The impact of implicit racial bias on the exercise of prosecutorial discretion. *Seattle University Law Review*, 35, 795-826.
- Levinson, J. D. (2013). *Implicit racial bias across the law*. New York : Cambridge University Press.
- Liew, S., Hamidun, R., & Soid, N.F. (2017). Differences of driving experience and gender on traffic offences among Malaysian motorists. *MATEC Web of Conferences*, 103, 08016. <https://doi.org/10.1051/mateconf/201710308016>
- Liu, C., & Sharma, A. (2019). Are you going to get a ticket or a warning for speeding? An autologistic regression analysis in Burlington, VT. *Transportation Research Interdisciplinary Perspectives*, 1, 100001.
- Makowsky, M. D., & Stratmann, T. (2011). More tickets, fewer accidents: How cash strapped towns make for safer roads. *Journal of Law & Economics*, 54(4), 863-888. doi:10.1086/659260
- Makowsky, M. D., & Stratmann, T. (2009). Political economy at any speed: What determines traffic citations? *American Economic Review*, 99(1), 509-527. doi:10.1257/aer.99.1.509
- Matsueda, R. L. (1988). The Current State of Differential Association Theory. *The Current State of Differential Association Theory*, 34(3), 277–306. <https://doi.org/10.1177/0011128788034003005>
- Matsueda, R. L. (2010). *Differential association theory and differential social organization*. New York: Sage Publishing.

- Mertler, C. A., & Vannatta, R. A. (2013). *Advanced and multivariate statistical methods : Practical application and interpretation* (5th ed.). Glendale, CA : Pyrczak Publishing.
- Mills, L. G. (1999). *A penchant for prejudice: Unraveling bias in judicial decision making*. Michigan: University of Michigan Press.
- National Highway Traffic Safety Administration [NHTSA]. (2012). Traffic safety facts: 2011 motor vehicle crashes: Overview. Washington, DC.
- National Highway Traffic Safety Administration [NHTSA]. (2011). General estimates system, 2011, <ftp://ftp.nhtsa.dot.gov/GES/GES11/>.
- Norwood, K. (2016). *Ferguson's fault lines: The race quake that rocked a nation*. Chicago: American Bar Association.
- Nosek, B.A., Smyth, F.L., Hansen, J.J., Devos, T., Lindner, N.M., Ranganath, K.A., Smith, C., Olson, K., & Chugh, D. (2007). Pervasiveness and correlates of implicit attitudes and stereotypes. *European Review of Social Psychology*, 18, 36 - 88.
- Oliver, M.B. (2003). African American Men as "Criminal and Dangerous": Implications of Media Portrayals of Crime on the "Criminalization" of African American Men. *Journal of African American Studies*, 7,2 , pp. 3-18 (16 pages). Springer.
- Parks, G. E. (2010). *Critical race realism: Intersections of psychology, race, and law*. New York: The New Press.
- Patzer, G. L. (2008). *Looks: Why they matter more than you ever imagined*. New York: Amacom Books.
- Pedersen, N. B. (2011). A Legal framework for uncovering implicit bias. *University of Cincinnati Law Review*, 79, 97-153.

- Persad, G. (2014). When, and how, should cognitive bias matter to law. *Law & Inequality: A Journal of Theory and Practice*, 32, 31-67.
- Plant, E. A., & Peruche, B. M. (2005). The Consequences of Race for Police Officers' Responses to Criminal Suspects. *Psychological Science*, 16(3), 180–183.
<https://doi.org/10.1111/j.0956-7976.2005.00800.x>
- Pickerill, M., Mosher, C., & Pratt, T. (2009). Search and seizure, racial profiling and traffic stops: A disparate impact framework. *Law and Policy*, 31(1), 1-30.
- Pierson, E., Simoiu, C., Overgoor, J., Corbett-Davies, S., Jenson, D., Shoemaker, A., ... & Goel, S. (2020). A large-scale analysis of racial disparities in police stops across the United States. *Nature Human Behaviour*, 4(7), 736-745.
<https://doi.org/10.1038/s41562-020-0858-1>
- Pronin, E. (2008). How we see ourselves and how we see others. *Science*, 320, 1177-1180.
- Quintanar, S. (2017). Man vs. machine: An investigation of speeding ticket disparities based on gender and race. *Journal of Applied Economics*, 20, 1 - 28.
- Regoeczi, W. C., & Kent, S. (2014). Race, poverty, and the traffic ticket cycle: Exploring the situational context of the application of police discretion. *Policing An International Journal of Police Strategies and Management*, 37(1), 190-205.
<https://doi.org/10.1108/PIJPSM-06-2013-0060>
- Remsberg, C. (1995). *Tactics for criminal patrol: Vehicle stops, drug discovery, & officer survival*. Calibre Press, Inc.

- Rhode, D. L. (2010). *The beauty bias: The injustice of appearance in life and law*. New York: Oxford University Press.
- Richardson, L. S. (2012). Cognitive bias, police character and the fourth amendment. *Arizona State Law Journal*, 44, 267.
- Rowe, B. (2009). *Gender bias in the enforcement of traffic laws: Evidence based on a new empirical test*. Mimeo, Department of Economics, University of Michigan.
- Rutledge, D. (2005). Investigative traffic stops: Stopping a suspicious person on the pretext of a traffic violation is perfectly legal... as long as you have probable cause. *The Law Enforcement Magazine*, September 2005.
- Sandra Bland Act [S.B. No. 1849]. (2021, October). *City Of Houston Legislative Report 2017*. Retrieved from:
<http://www.houstontx.gov/txlege/sb-1849-sandra-bland-act>
- [S.B. No. 1849]. (2021, October). Retrieved from :
<https://capitol.texas.gov/tlodocs/85R/billtext/html/SB01849F.htm>
- Seguino, S., & Brooks, N. (2017). *Driving while Black and Brown in Vermont*. University of Vermont and Cornell University.
- Seguino, S., & Brooks, N. (2018). *A deeper dive into racial disparities in policing in Vermont*. University of Vermont and Cornell University.
- Seguino, S., Brooks, N., & Mitofsky, K. (2012). *Racial disparities in policing? An assessment of 2009 10 traffic stop data in Chittenden County, Vermont*. University of Vermont and Cornell University.

- Spencer, K. B., Charbonneau, A. K., & Glaser, J. (2016). Implicit Bias and Policing. *Social and Personality Psychology Compass*, *10*(1), 50–63.
<https://doi.org/10.1111/spc3.12210>
- Sprinthall, R. C. (2007). *Basic statistical analysis, 8th edition*. Boston: Pearson Allyn & Bacon.
- Staats, C., Capatosto, K., Wright, R. A., & Jackson, V. W. (2016). *State of the science: Implicit bias review 2016*. Columbus: Ohio State University / Kirwan Institute.
- Stanton, N. A., & Salmon, P. M. (2009). Human error taxonomies applied to driving: A generic driver error taxonomy and its implications for intelligent transport systems. *Safety Science*, *47*(2), 227–237.
- Supreme Court of The United States. (1977) *U.S. Reports: Pennsylvania v. Mims*, 434 *U.S. 106*. [Periodical] Retrieved from the Library of Congress, <https://www.loc.gov/item/usrep434106/>.
- Sutherland, E. H. (1947). *Principles of criminology (4th ed.)*. Philadelphia: Lippincott.
- TCOLE, T. C. (2020, February 13). *Racial profiling reports*. Retrieved from Texas Commission on Law Enforcement: <https://www.tcole.texas.gov/content/racial-profiling-reports>
- Texas Code of Criminal Procedure. (2021, June). Art. 2.132 Law Enforcement Policy on Racial Profiling. Retrieved from: https://texas.public.law/statutes/tex._code_of_crim._proc._article_2.132

Texas Administrative Code §217.1. (2014, November 1). PUBLIC SAFETY AND
CORRECTIONS TEXAS COMMISSION ON LAW ENFORCEMENT.

[https://texreg.sos.state.tx.us/public/readtac\\$ext.TacPage?sl](https://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl)

Texas Commission on Law Enforcement. (2021, October). *Racial profiling: What is the comparative analysis? Comparative analysis of Motor Vehicle Stops*. Retrieved from: <https://www.tcole.texas.gov/content/comparative-analysis>

Texas Department of Department of Public Safety. (2021, October). *2020 Motor Vehicle Stop Data Report*. Retrieved from:

https://www.dps.texas.gov/sites/default/files/documents/director_staff/public_information/2020_traffic_stop_data_report.pdf

Texas Administrative Code Chapter -RULE §218.3- Legislatively Required Continuing Education for Licensees. (2020, February 1). Texas Administrative Code Chapter -RULE §218.3. [https://texreg.sos.state.tx.us/public/readtac\\$ext.TacPage](https://texreg.sos.state.tx.us/public/readtac$ext.TacPage)

Texas Penal Code. (2021, May). *PENAL § 49.02. Public Intoxication*. Retrieved from: <https://codes.findlaw.com/tx/penal-code/penal-sect-49-02.html>

Texas Penal Code. (2021, June). *Sec. 12.23 Class C Misdemeanor*. Retrieved from: https://texas.public.law/statutes/tex._penal_code_section_12.23

Texas Penal Code. (2021, June). *Sec. 1.02. Objectives of Code*. Retrieved from: https://texas.public.law/statutes/tex._penal_code_section_1.02

Texas Transportation Code. (21, October). *Chapter 545. Operation and movement of vehicles*.

- Retrieved from: <https://statutes.capitol.texas.gov/docs/TN/htm/TN.545.htm>
- Totman, M., & Steward, D. (2006). Searching for consent: An analysis of racial profiling Data in Texas. Retrieved from <http://www.criminaljusticecoalition.org>
- Tyler, J. (2014). Blind justice: The Supreme Court, implicit racial bias, and the racial disparity in the criminal justice system. *American Criminal Law Review*, 51, 689-715.
- Understanding Implicit Bias. (2015). The Ohio State University Kirwan Institute for the Study of Race and Ethnicity. Retrieved from: <http://kirwaninstitute.osu.edu/research/understanding-implicit-bias/>
- US Department of Justice Office of Justice Programs Bureau of Justice Statistics, & Davis, E. (2018, October). *U.S. Department of Justice Office of Justice Programs Bureau of Justice Statistics Contacts Between Police and the Public, 2015* (NCJ 251145). The Bureau of Justice Statistics of the U.S. Department of Justice. <https://www.bjs.gov/content/pub/pdf/cpp15.pdf>
- Wesley, W. (1970). *Violence and the Police: A Sociological Study of Law, Custom, and Morality*. Massachusetts: Cambridge.
- White, B. R. & Supreme Court of The United States. (1967) *U.S. Reports: Terry v. Ohio*, 392 *U.S. 1*. [Periodical] Retrieved from the Library of Congress, <https://www.loc.gov/item/usrep392001/>.
- Williams III, F. P., & McShane, M. D. (1988). *Crimimology theory*. Upper Saddle River: Prentice Hall.
- Young, B. (2011). *Police discretion in contemporary America*. Washington, DC: Georgetown University.

Young, K. L., Salmon, P.M., & Lenn'e, M. G. (2013). At the cross-roads:

An on-road examination of driving errors at intersections. *Accident Analysis and*

Prevention, 58, 226–234. <https://doi.org/10.1016/j.aap.2012.09.014>