

RACIAL DISPARITY IN TRAFFIC STOPS: AN ANALYSIS
OF RACIAL PROFILING DATA IN TEXAS

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The primary goal of this study was to analyze existing racial profiling data collected and reported by law enforcement agencies in Texas. The internet-based data used was obtained through TCOLE, as it is the state mandated repository in which all law enforcement agencies must submit their annual racial profiling reports to. In analyzing a collection requirement of these reports, this study sought to determine how frequently law enforcement officers know the race or ethnicity of drivers prior to traffic stops. Furthermore, the study sought to determine if there are differences in the rates of race or ethnicity known prior to stops across Texas geographical regions, county population sizes, agency types, as well as between counties with and without interstate thoroughfares. This analysis consisted of 3,250,984 traffic stops conducted by 1,186 law enforcement agencies in 2014. Findings revealed that law enforcement officers rarely know the race or ethnicity of drivers prior to traffic stops, as was consistently found across all measures. Findings and implications are discussed.

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TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS	iii
LIST OF TABLES	vi
CHAPTER 1 INTRODUCTION	1
Introduction to Racial Profiling and Traffic Enforcement.....	1
Legislative Intervention	2
Research Questions.....	4
Conclusion	5
CHAPTER 2 REVIEW OF THE LITERATURE	7
Introduction.....	7
Historical Overview of Racial Profiling in the Criminal Justice System	7
Initial Demands for Empirical Research on Racial Profiling	9
Current Perspective on Racial Profiling	13
Outline of Methodologies Related to Analyzing Traffic Stop Data	17
Census Data in Vehicle Stop Analyses.....	18
Not-at-Fault Crash Data in Vehicle Stop Analyses	21
Veil-of-Darkness Method in Vehicle Stop Analyses.....	22
Red Light Camera Data in Vehicle Stop Analyses.....	24
Post-Stop Outcome Analyses.....	25
Theoretical Explanations of Race-Based Decisions	30
Conclusion	32
CHAPTER 3 METHODOLOGY	34
Research Questions.....	34
Data Source.....	35
Measures	38
Plan of Analysis	39
Limitations	40

CHAPTER 4 RESULTS	42
Introduction.....	42
Descriptives of Total Agencies and Traffic Stops	42
Descriptives of Race Known by Geographical Region	43
Descriptives of Race Known by County Population Size	44
Descriptives of Race Known by Agency Type.....	46
Descriptives of Race Known by Interstate Thoroughfare Location	47
Summary	48
CHAPTER 5 DISCUSSION.....	49
Significance of Findings by Research Question	49
Why Do Officers Not Know the Race of Drivers Prior to Traffic Stops?	53
Limitations and Suggestions for Future Research	55
Conclusion	57
APPENDIX A BLANK ONLINE RACIAL PROFILING REPORTING FORM.....	59
APPENDIX B MAP OF TEXAS GEOGRAPHICAL REGIONS	61
REFERENCES	63

LIST OF TABLES

Table 1 Was Race Known Prior to Stop?43

Table 2 Descriptives of Race Known by Geographical Region44

Table 3 Descriptives of Race Known by County Population Size45

Table 4 Descriptives of Race Known by Agency Type.....47

Table 5 Descriptives of Race Known by Interstate Thoroughfare Location48

CHAPTER 1

INTRODUCTION

Introduction to Racial Profiling and Traffic Enforcement

Racial profiling has become one of the most frequently debated topics in the discussion of discretionary police practices. The media's recent spotlight on this controversy has heightened the public's interest and awareness of such policing methods. As people are increasingly acknowledging the existence of racial disparities in law enforcement's use of discretion, agencies are realizing how critical the public's confidence is to their legitimate authoritative function in society. In 2011, the Bureau of Justice Statistics (BJS) surveyed U.S. residents age 16 or older and found that approximately 63 million (26% of the population) of the respondents had one or more interactions with the police in the prior 12 months. Additionally, nearly half (49%) of these contacts were involuntary or police-initiated (BJS, 2013). Given that over a quarter of the population was able to recall experiencing a recent face-to-face encounter with the police, it is central to the legitimacy, efficiency, and integrity of departments to deliver even-handed justice. Willingness to obey the law, report criminal activity, as well as cooperation and assistance in criminal investigations are all indispensable roles fulfilled by citizens that are threatened when police are perceived as unfairly enforcing the law (Taylor & Lawton, 2012).

While the exact definition of racial profiling varies among states, Texas legislation has identified such practices as "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 CCP, Article 3.05). Racial profiling is thought to occur under an array of circumstances, such as when choosing among drivers to stop for minor traffic violations, pedestrians to stop in search of illegal contraband, shoppers to monitor more intently, as well as occasions of targeted and selective enforcement of

immigrations laws (Farrell, & McDevitt, 2010). Moreover, practices of racial profiling are not restricted to state and local police departments, as such tactics have also been utilized in areas of commercial loss prevention, private security, and airport security. For this reason, efforts to fully investigate this problem would be wise to categorize law enforcement agents as any individual with an occupational duty to maintain societal peace, whether in a public or private capacity.

An essential function of our government, more so than crime fighting, is to ensure the law serves and protects all people equally. In light of the risk associated with racial profiling, such as strained police-citizen relationships, it has become important for both researchers and lawmakers to identify prevailing discriminatory methods and develop strategies to eliminate such injustice. Despite identifying racial profiling as a legitimate issue and the development of training programs to prevent discrimination, officers may continue to rely on cultural stereotypes to establish suspicion, rather than on specific behaviors (NIJ, 2013). The practice itself has long been an endorsed operation of maintaining law and order. Therefore, fundamental change is only attainable if initiative is first taken to pinpoint and analyze the deeply rooted systematic problems of policing that motivate race-based decisions.

Legislative Intervention

Within the last fifteen years, not only has academia's interest in racial profiling as an inherent problem of policing effectiveness increased, but state lawmakers and police administrators are also taking notice. Specifically, there has been a legislative movement towards requiring law enforcement agencies to collect data during traffic stops. In 2014, the National Association for the Advancement of Colored People (NAACP) conducted a nationwide analysis of state racial profiling statutes to evaluate the effectiveness and enforceability of their requirements (Brooks, Brock, & Bolling-Williams, 2014). According to their findings, although

30 states have laws related to racial profiling, only 18 states have passed laws requiring mandatory data collection whenever a stop or search is conducted, 15 states require analysis and publication of their collected racial profiling data, and just 18 states have developed commissions to review and respond to claims of racial profiling as well as publish results of racial profiling data. Overall, there seems to be a common legislative movement towards enhancing the quality of racial profiling laws by not only prohibiting its practice, but also requiring the collection of racial profiling data and further demanding the data be analyzed to evaluate possible disparities.

Texas is among the states that require mandatory data collection, data analysis, and have designated the Texas Commission on Law Enforcement (TCOLE) to enforce the racial profiling data collection guidelines and subsequently publish the data reports. In 2002, one year after Texas passed legislation prohibiting racial profiling, all police agencies were required to implement their own racial profiling policy, develop a departmental complaint process, as well as document the race of every driver cited for a traffic violation. Furthermore, in 2003, the requirement to collect data on race was extended to any vehicle or pedestrian stopped by police officers, regardless of the decision to issue a citation (Liederbach, Trulson, Fritsch, Caeti, & Taylor, 2007).

Today, Texas law enforcement agencies employing peace officers are required to submit some type of racial profiling report on an annual basis. When a specific agency's routine responsibilities include traffic or motor vehicle stops and they also operate vehicles equipped with video and audio equipment, they are considered Partially Exempt; therefore, they are required to satisfy Tier 1 reporting guidelines, which include: "(a) the number of motor vehicle stops (categorized as citation only, arrest only, or both), (b) the number of types of race or ethnicity of the persons(s) who were stopped was, (c) the number of stops that the race or

ethnicity was known prior to the stop, (d) the number of stops in which a search was conducted, and (e) number of searches that consent was received prior to search” (Texas CCP, Article 2.132).

In addition to requiring data collection on traffic stops, Texas legislators also appointed the Law Enforcement Management Institute of Texas (LEMIT) with the task of designing a program to train law enforcement administrators and officers on best practices and compliance with policies related to racial profiling (LEMIT, 2001). The curriculum LEMIT created also included sections on history and civil rights, perspectives on cultural differences, emphasis on developing interpersonal communication skills, as well as instructions on analyzing and reporting the data collected. As part of the implementation timeline of the Texas law prohibiting racial profiling, all administrators and officers were required to complete the racial profiling training by March 1, 2003. While it is unquestionable that great efforts have been put into action to reform discriminatory practices in policing, it remains necessary to routinely analyze police behaviors as well as the effectiveness of the instruments and criteria used for data collection.

Research Questions

While research focusing on various techniques for interpreting racial profiling data has increased since its requirement, there remains a lack of consensus regarding how best to do so. In general, disagreement tends to emerge in the analysis phases; specifically, when selecting a population baseline (e.g., Census) in which to compare the data collected for the purpose of examining racial disparities in stops, searches, and arrests. The following research aims to simplify the analysis process and fill a gap in existing research by analyzing vehicle stop data without a baseline, focusing exclusively on part ‘C’ of Texas’ collection requirements to assess the prevalence of racially biased police behaviors. Specifically, this criterion asks officers to

document “the number of stops that the race or ethnicity was known prior to the stop.” In analyzing the Texas data collected during traffic stops, this study seeks to answer the following research questions:

- 1) How frequently do law enforcement officers know the race and ethnicity of drivers prior to a traffic stop?
- 2) Are there differences in rates of race known across geographical regions?
- 3) Are there differences in rates of race known across county population sizes?
- 4) Are there differences in rates of race known across agency types?
- 5) Are there differences in rates of race known between counties with and without interstate thoroughfares?

Conclusion

Addressing racial profiling concerns has become an inescapable task in the mission to improve perceptions of police legitimacy as well as sustain the documented decline in crime rates. There have been numerous research studies intended to empirically satisfy such concerns, but conflicts in analysis approaches has diminished the usefulness of the data collected and does little to benefit law enforcement or the community. The current study takes a uniquely simple approach that aims to get at the root of the problem, how frequently is race known prior to traffic stops? With this approach, analysis conflict can be largely avoided as it will not be necessary to construct a comparative benchmark. The proceeding chapter elaborates on the background of the racial profiling debate and the legal evolution of addressing practices of race-based decision making in law enforcement. Thereafter, a review of relevant research studies will provide an overview regarding what we currently know about the collection of racial profiling data and their associated strengths and weaknesses. It is important to note that the following sections are not necessarily designed to be exhaustive, as racial profiling is a broad topic; it is intended to be a

framework on the nature of the problem, the history, and the research specifically relevant to this study.

CHAPTER 2

REVIEW OF THE LITERATURE

Introduction

In reviewing the literature on racial profiling, this chapter will summarize both the legitimized and prohibited use of race-based decision making in law enforcement practices. Overall, the objective of the literature review is as follows: 1) provide explanation for America's systematic struggle to eliminate racial profiling techniques, 2) present a review of empirical studies that have addressed strategies for the collection and analysis of racial profiling data, and 3) contextualize how the present study will fill existing gaps in terms of analyzing racial profiling data.

Historical Overview of Racial Profiling in the Criminal Justice System

In order to appreciate the purpose of evaluating the existence of racial profiling in traffic stops, it is important to recognize the historical significance of racial conflict in American culture. Although not the sole representation, African Americans and their historic relationship with the U.S. government paints the clearest picture of the laws transparent ability to uphold the basic human rights of some while, simultaneously, neglecting the privileges of others based merely on race. Patrols originated in the Southern states during the pre-Civil War era and were designed to monitor and control the movements of slaves; in particular, since most slaves ran away during the night, slave patrols were organized to implement a preventative "night watch" (Fry, 1975). After the constitution was amended and slave patrols were disbanded, their function became the basis for racially prejudiced groups such as the Ku Klux Klan. In addition to the formation of racially based hate groups, it also became clear that mistreatment of African American citizens at the hands of government officials would likely be ignored and unpunished (Harris, 2006).

During this era of transition, issues of prejudice were only of concern for members of African American communities; even when mainstream society witnessed occurrences of racial discrimination, they typically turned a blind eye. The early acceptance of racial discrimination set the foundation for legitimizing racial profiling and perpetuating an “us” and “them” mentality among the majority and minority racial groups. Consequently, as organized law enforcement agencies continued in the role of ensuring a safe environment for citizens, the pursuit of crime deterrence permitted them to establish a physical “face” of crime (Rose, 2002).

Many early discussions regarding race-based decision making purposefully neglect mentioning that the terminology *racial profiling* originated as an entirely acceptable standard of offender “profiles” adopted by police organizations to guide police officers’ valid discretionary practices. It should be noted that racial profiling is not solely the product of prejudice; unlike racial prejudice, racial profiling is a relatively recent training tactic created and directed by those in positions of authority (Dahle, 2015). In the early 1980s, the U.S. Drug Enforcement Administration (DEA) developed a comprehensive list of characteristics to depict what they referred to as “drug courier profiles” in an effort to combat drug trafficking (Engel, Calnon, & Bernard, 2002). The DEA claimed that the use of these profiles to identify potential drug traffickers on airplanes was successful. However, as more DEA agents testified about their utilization of these profiles, inconsistencies emerged that suggested this approach was less systematically scientific and more so the product of personal observations (Harris, 2006).

As detailed in the article by David Harris, the application of profiling went from airports to streets and highways when the DEA emphasized concern that highways were increasingly being used to transport large supplies of narcotics (2006). Therefore, in the late 1980s, the million dollar “Operation Pipeline” was launched to combat the popular “war on drugs” by

training police officers in the use of profiles on American highways. Although the DEA has continually denied the use of racial or ethnic characteristics as part of its profiles, it is unquestionably clear that race was indeed a discretionary factor used conducting drug interdiction stops. Video tapes used for training in Operation Pipeline highlight many profile factors that indicate the likely presence of drug related crime; although the scripted presentation never mention race or ethnicity as indicators, in every single traffic stop demonstration the driver has a Spanish surname. This is an explicit illustration of how discriminatory decision making has developed as a systematic problem within policing; any attentive police officer can clearly recognize the implication posed—Hispanics carry drugs more often than other drivers (Harris, 2006).

Initial Demands for Empirical Research on Racial Profiling

Subjecting racial minorities to unequal, and often unjust, treatment by law enforcement officers is far from a new phenomenon. Jeff Bumgarner chronologically arranges events pivotal to the topic of racial profiling in the United States in his book on contemporary criminal justice issues (2015). The timeline shows that the U.S. Department of Justice first became interested in traffic stops as a source of racial profiling in 1998 following an incident on the New Jersey Turnpike. In this situation, four unarmed African American males were pulled over by state troopers. During the course of the traffic stop the officers fired eleven shots into the van, resulting in critical wounds for two of the four occupants; it was later determined that no drugs or contraband were found and no subsequent charges were filed against any of the four occupants.

This confrontation in New Jersey launched the nation's initial interest in profiling beyond the context of drug trafficking prevention and therefore the Turnpike was the primary target for

early racial profiling studies on traffic stop data. Following the court proceedings, litigation and federal intervention mandated provisions for departmental collection and monitoring of traffic-stop data. Furthermore, litigation also included the Turnpike in a list of specified locations in which the New Jersey State Police (NJSP) were required to release 1988 to 1991 traffic stop and arrest data to the defendants (Ramirez, Farrell, & McDevitt, 2000).

This data was then analyzed by Dr. John Lamberth, the statistical expert for the defendants, in one of the first empirical research studies introduced into the court record on this topic (Ramirez, Farrell, & McDevitt, 2000). Lamberth conducted an assessment of roadway demographics to determine whether African Americans were stopped and arrested by NJSP at a higher rate compared to the percentage of African Americans motorists documented as violating traffic laws on the selected New Jersey highways. The study's results found that, on the New Jersey Turnpike, African Americans account for only 13.5 percent of the driving population and 15 percent of the individuals observed speeding; however, 35 percent of the drivers stopped for traffic violations and 73.2 percent of arrested motorists were African American (Lamberth, 2010). Following Lamberts presentation of statistical evidence, the Superior Court of New Jersey decided the NJSP unlawfully relied upon race in their decision to stop and search motorists and therefore the evidence seized in 19 consolidated criminal proceedings was suppressed (Ramirez, Farrell, & McDevitt, 2000).

This study is noted as one of the leading and most comprehensive statistical analyses on racial profiling. Nonetheless, as a pioneer in designing racial profiling research, it has since been criticized for its methodologies. Specifically, the roadway observations of racial composition on the New Jersey Turnpike was conducted by combining photographs of motorists taken by a camera that also captured radar-gun evaluations of the drivers speed (CNN Law Center, 2002).

The photographs were later reviewed by researchers to determine the race of drivers' going 15mph over the speed limit. The method used to identify race is vulnerable to reliably threats, and may skew offense results. Moreover, as speeding was the only violation tracked and drivers who did not exceed the speed limit by the researcher's standard were not documented, many violations may have gone unaccounted for.

This dispute was highly publicized by the media throughout the country and greatly broadened inquiries and coverage of racial profiling claims. It has also been accredited as facilitating the introduction of the 1999 Traffic Stop Statistics Study Act in both the United States Senate and the House of Representatives. This Act proposed to carry out a nationwide study to analyze the reasons motorists were stopped; to accomplish this goal it initiated the idea of collecting identifying information of those stopped and the individual nature of those stops. Furthermore, this Act included analyzing and investigating departmental complaints alleging racially motivated traffic stops and also emphasized that federal funds would help state and local governments conduct the study. Although the bill did not pass, it symbolizes a shift in tolerance towards the use of racial profiling in traffic stops and seems to have inspired state and local legislative action (Bumgarner, 2015).

Following the tragedy America endured on September 11th 2001, attitudes towards race-based decision making took a conflicting turn and many citizens and policy makers began reexploring the use of racial profiling as an instrument necessary for national security (Corlett, 2011). This stalled the legislature's motivation on discovering whether race or ethnicity was being used as a basis for suspecting criminal activity. However, in 2003, the U.S. Department of Justice (DOJ) issued a policy Guidance forbidding the use of criminal justice profiling when it is exclusively or primarily based on race or ethnicity. In opposition to the strategy endorsed by the

DEA's Operation Pipeline, this Guidance formally rejected the view that certain races are more inclined to commit crimes. This stereotyped approach had previously been promoted among agencies to increase arrests for non-traffic offenses, such as drug trafficking, and was therefore commonly used to justify routine traffic enforcement activity; the Guidance emphatically prohibited this form of racial profiling, among others (DOJ, 2003).

To the satisfaction of many, the DOJ expressed an overall moral obligation to end this form of policing bias and blatantly warned of the harm that would ensue and the trust that would disintegrate if the criminal justice system continued its use of racial profiling (2003). Unfortunately, it too fell short of what was truly needed to overcome these practices as it did not apply to state or local police, did not provide a means to enforce the policy or a remedy for victims, and did not require the collection of traffic data.

Also in 2003, a landmark study was released by the Institute on Race and Poverty at the University of Minnesota School of Law. The analysis focused on the proportion of the jurisdiction's nonwhite population, the total number of traffic stops, and the number of census tracts in the jurisdiction to determine the magnitude of disparity between the driving population and actual stopped population. This study tracked sixty-five of Minnesota's law enforcement agencies and found that, despite stopping white motorists less frequently than African American, Latino, or Native American motorists, white drivers who were stopped actually possessed drug and other contraband more frequently than minorities. These results were found consistently across urban, suburban, and rural areas of Minnesota (Institute on Race & Poverty, 2003). The findings in this study have been noted as particularly intriguing given the previous justifications for evidence of disproportionality in traffic stop data, which were largely based on the

widespread perception that minorities were stopped more often for the simple reason that they tended to possess contraband at a higher rate than whites.

Current Perspective on Racial Profiling

In the last decade, research on racial profiling has mainly been interested in developing techniques for interpreting traffic stop data; these methods will be highlighted in the following section but it is important to first understand where our nation currently stands on issues related to racial profiling. In 2012, issues surrounding racial profiling in America regained national attention when Trayvon Martin, unarmed African American teenager, was fatally shot by George Zimmerman, a 28-year-old Hispanic male. Zimmerman was the neighborhood watch coordinator patrolling the community where Martin was living at the time and where the altercation took place (Bumgarner, 2015). This shooting and subsequent criminal proceeding initiated a nationwide debate as many believed Martin was unfairly targeted based on his race. Although Zimmerman was acquitted of all charges following evidence that Martin initiated the physical altercation, the outcry of racial discrimination from the black community received mass media coverage and has since launched a social movement and police legitimacy crisis. Despite police not being involved in this altercation, a series of protests and rallies have greatly impacted the public's perception of police and their authorized use of force.

The social movement against police brutality spurred by the shooting of Trayvon Martin has become nationally recognized as the Black Lives Matter movement, which received the most exposure in 2014 following three separate police-citizen altercations that resulted in the deaths of three African American males: Eric Garner, Michael Brown, and Tamir Rice (New York Times, 2014; Baker, Goodman, & Mueller, 2015). Unlike the incident involving Martin, these altercations involved police-citizen encounters. Over a span of eight months, from the initial

incident in July to the last in November, both peaceful and violent protests erupted nationwide focusing on issues of racial profiling, police-citizen violence, and overall racial inequality the criminal justice system. Although the specific circumstances of these incidents differ, the underlying source of outrage is essentially the same; public claims of excessive use of force by police officers against African American males and the subsequent perception of inequality when the officers were not indicted on criminal charges. The responses in New York City, Ferguson, and Cleveland, were pivotal in the Black Lives Matters movement, transforming it into a unified organization with a mission to spread awareness of police brutality against people of the black community in general (Luibrand, 2015).

In 2014, as a reaction to the reports alleging discriminatory interactions between police and minority citizens, protests formed rapidly across the country demanding structural change and evaluations of modern policing. In response to the public's renewed interest in racial profiling, the DOJ announced a new Guidance for the use of racial profiling practices, which applies to federal law enforcement agencies and state and local agencies when acting as part of a federal task force (DOJ, 2014). This Guidance expands on the initial Guidance released eleven years prior. Whereas the original Guidance formally forbid federal law enforcement officials to rely on race or ethnicity when conducting a routine or spontaneous traffic stop, unless acting on the listed characteristics of a suspected criminal's description, the 2014 Guidance advances the previous efforts to eliminate racial profiling by implementing procedures for training, data collection, and accountability.

First, in regards to training requirements, agencies must regularly train all agents on the legality of the Guidance as well as its proper application; there must also be an appointed leader within each agency to review, clear, and ensure consistency of training. Second, each law

enforcement agency is to develop a method for tracking complaints as they relate to the Guidance, and must initiate research projects based on the data to analyze the implementation of this Guidance. Lastly, in recognizing the potential threat to federal law enforcement agencies integrity and their relationship with citizens, all claims alleging a violation of the Guidance will be treated just as all other reports of misconduct and subsequently referred to the Department office designated to investigate such accusations. Additionally, all violations will be reported to the head of the Department overseeing the law enforcement agency in question (DOJ, 2014). The DOJ has once again emphasized their goal of eliminating discriminatory police practices; in addition to recommending the implementation of their new standards, they have allocated 4.75 million dollars towards fulfilling the projects purpose. Research will be funded to study areas in the criminal justice system where racial bias may exist, including traffic stops; ultimately, it is focused on reducing mistrust between minority communities and local law enforcement.

In addition to the DOJ's newly updated policy guidance on racial profiling, President Barack Obama established the Task Force on 21st Century Policing in December of 2014. This task force was founded on the key belief that trust between law enforcement and the citizens they protect and serve is essential for community stability. With obvious threats to that trust rapidly emerging, the task force's mission was to identify the best practices in policing, and then put forward recommendations regarding how policing practices can both effectively reduce crime while also building trust with their communities. Overall, the main focus was on procedural justice, use of force, diversity in law enforcement, body-worn cameras, social media's positive and negative effect on policing and public safety, as well as mental health effects from job related stress. Together with advice from government officials, law enforcement officers, academic experts, and others in the public, the task force came up with fifty-nine

recommendations; each was organized into six categories for implementation: 1) Building Trust and Legitimacy, 2) Policy and Oversight, 3) Technology and Social Media, 4) Community Policing and Crime Reduction, 5) Officer Training and Education, and 6) Officer Safety and Wellness (President's Task Force on 21st Century Policing, 2015).

Despite action taken in 2014 by the Department of Justice and President Obama to address the concerns of the black community through the development of strategies to motivate change in modern policing, another controversial police-citizen encounter occurred in 2015 that is of national significance to the current discussion. This incident involved Freddie Gray, a 25-year-old African American, who was arrested in Baltimore, Maryland on April 12th and died a week later following fatal injuries sustained while in a police transport van en route to central booking (Marton, & Harris, 2015). Similar to the 2014 incidents, protests and riots erupted in Baltimore that lasted several days and ultimately turned violent as some protestors caused major destruction to the city. On April 30th, the chief prosecutor in Baltimore ruled Gray's death a homicide and filed criminal charges against the six officers responsible for his arrest and subsequent the transportation. Currently, one officer is awaiting a retrial and the trials for the remaining five have yet to begin (Rector, & Fenton, 2015). Just like the previously mentioned police-citizen altercations, this case involves an unarmed black male killed by police officers and is presently the most recent focus of the Black Lives Matter movement. What began in 2012 after 17-year-old Trayvon Martin died following a physical confrontation with a security guard has now become a nationally recognized organization promoting awareness and systematic change regarding targeted police brutality and racial inequality in the criminal justice system.

As reflected in the literature previously described, criminal justice research has long studied the discretionary decision making authority granted to law enforcement officials as well

as concerns of disparate treatment within the justice system. Our criminal justice system seems to be evolving productively in terms of statutes and departmental policies since the initial public interest in racial profiling; however, there is a possibility that modern discriminatory police strategies have adapted to circumvent detection (Engel, Calnon, & Bernard, 2002). Today terms like *Driving While Black* have become common household phrases which suggest racial disparity in traffic enforcement is a widely recognized concern among society. For this reason, it is essential that racial profiling remain a topic of importance and for researchers to continue developing strategies to factually document its potential existence. As addressed, advancements in data collection efforts have generally been motivated by either state legislative mandates or as a result of proactive strategies implemented by police departments to alleviate community concerns. In doing so, there appears to be increased commitment to accountability by law enforcement agencies to convey their legitimacy to their communities.

Despite acknowledging its level of importance, there continues to be confusion regarding how the captured information should be analyzed to target racial disparities in traffic stop data. Consequently, analysis conclusions vary on a spectrum from findings of racial prejudice and discriminatory police practices to more race-neutral explanations (Engel, Calnon, & Bernard, 2002). A review of the methodologies and findings from various racial profiling research studies is provided to further put this issue into perspective and demonstrate how the approaches utilized in determining racial profiling in traffic stops have evolved.

Outline of Methodologies Related to Analyzing Traffic Stop Data

Current research has verified the existence of racial disparity in traffic stops, in that nonwhite individuals are indeed stopped more often than those who are white (Withrow, 2004). However, most researchers cautiously avoid concluding that the finding of racial disparity

automatically equates to racial profiling; as it is important to assess whether disparity is related to other factors, which this section intends to address. In order to provide insight to police administrators, guide policy-makers, and modify training programs to improve equitable law enforcement practices, it is essential that vehicle stop data is properly analyzed and interpreted (Tillyer, Engel, & Cherkauskas, 2010). For this reason, this section is focused on providing a thorough exploration of available research and the various approaches taken by experts to interpret findings of disproportionality in traffic stop data and subsequent evaluations for evidence of racial profiling.

Since the collection of traffic stop data is a relatively recent requirement among states and local law enforcement agencies, research studies on racial profiling continue to evolve their analysis approach. Recent research has focused on two separate components in their attempts to understand the variety of departmental data compilations (Tillyer, Engel, & Cherkauskas, 2010). The first category of common assessments analyzes the officer's initial rationale for stopping a vehicle; this analysis generally requires the use of a benchmark or baseline. A benchmark is considered the proportion of individuals, in terms of their race or ethnicity, which had an opportunity to be stopped by police. The second category is more concerned with analyzing post-stop outcomes and the treatment of individuals; these studies are interested in measuring whether race or ethnicity is related to the rates of poststop searches, arrests, and incidences of physical police-citizen altercations (Withrow, 2006).

Census Data in Vehicle Stop Analyses

The use of benchmarks emerged naturally as a tool necessary for interpreting the race-based traffic stop information collected by law enforcement agencies. Two separate data sources are required when exploring whether racial disparities are present in the initial decision to stop a

vehicle (Tillyer, Engel, & Cherkauskas, 2010). First, the actual frequency of vehicle stops in terms of race/ethnicity is needed, which can usually be found in a state-ran database or by the individual agency being analyzed. Second, a benchmark, often referred to as the base rate, is needed that indicates the population to compare stop rates/frequency to. The two data sources are then compared using predetermined criteria to evaluate whether minority drivers are stopped by police officers disproportionate to their expected proportion of the population. Tillyer, Engel, and Cherkauskas (2010) have done extensive research in the area of assessing benchmarks and in one particular study they identified adjusted and unadjusted census population data, and drivers' license data as practices regularly used in benchmarking.

Official census data of a given jurisdiction's racial and ethnic demographic are the most commonly referenced source in the process of establishing a base rate for a driving population's expected racial composition, for which is used to compare the corresponding police agency's collection of traffic stop information (Farrell, & McDevitt, 2010). Law enforcement agencies such as the Fort Worth Police Department and the Midland Police Department have implemented the U.S. Census Bureau's Fair Roads Standard as the benchmarking method in their racial profiling analyses (Del Carmen, 2011; Fritsch, & Trulson, 2015). When utilizing the Fair Roads Standard to analyze traffic stop data, the baseline is adjusted to only reflect the number of households in the jurisdiction by race/ethnicity who indicated, in the 2010 census, that they had access to a vehicle. This approach has become popular primarily due to its easy and cost effective attainability, in addition to its straightforward application. However, its use for measuring racial profiling is limited by its ability to only measure demographic characteristics. Empirical research has shown that a particular locations population, as reflected in census data,

does not always accurately portray the demographic of individuals observed driving in the area (Tillyer, Engel, & Cherkauskas, 2010).

Additional issues have emerged from the use of census data. First, not only is the use of census data incapable of distinguishing the different rates at which different individuals living in the area drive, but it fails to report information regarding the racial or ethnic composition of non-resident motorists (Dominitz, 2003). Second, the race distribution of the benchmark population may differ from the driving population if there is variation in the rate at which different races commit traffic offenses. Lastly, it is also important to note that differences in police exposure can affect residential and benchmark populations (McMahon, Garner, Davis, & Kraus, 2002). To implement proactive policing strategies aimed at deterring criminal activity, agencies strategically deploy increased patrol units in neighborhoods where they receive the most calls for service. Given that there are typically a disproportionate number of calls for service received from minority communities, there is consequently a greater law enforcement presence in such areas. As a reasonable conclusion, since minority drivers are under increased observation due to repeated calls for service, they would subsequently be stopped more frequently.

Although it too has been criticized for its limitations, adjusting census data to only include individuals in the population with driving authorization provides a better estimate of the at risk driving population for measurement and comparison purposes (Tillyer, Engel, & Cherkauskas, 2010). In doing so, some analysts have utilized drivers' license records from the local Department of Motor Vehicles (DMV) to identify the race and ethnicity of the drivers issued a license in the geographic area under study. While this approach accounts for racial variation in the rate at which individuals in the population hold a driver's license, it still cannot account for out-of-jurisdiction motorists, racial differences in travel patterns, quality of driving,

or driver exposure to patrol units. In the past few years, social science has worked to increase the accuracy of the benchmarking technique; in doing so, a few studies have developed methods in which they start by creating a benchmark from the actual driving population, without the reliance on secondary data.

Not-at-Fault Crash Data in Vehicle Stop Analyses

To overcome the limitations of census data in racial profiling research, the use of not-at-fault drivers involved in two-car collisions was one of the initial innovative approaches in determining the demographics of vehicular populations (Alpert, Smith, & Dunham, 2004). At-fault and not-at-fault crash data had been previously used to study the relative crash risk for motorists of particular demographics; the current scholars were motivated to use such for racial profiling analysis. Alpert, Smith, and Dunham (2004) relied on the underlying assumption that the at-fault driver does not select another vehicle to crash into based on race; therefore, not-at-fault drivers serve as a random sample of the corresponding driving population.

To assess racial profiling, this study focused on 11 predetermined intersections in Miami-Dade County; observers were trained beforehand to identify the skin color of the drivers and record as either black or non-black (this study avoided making assumptions about ethnicity due to its unreliability). Following the collection of 65,025 successful observations, not-at-fault traffic crash data from the same intersections were used as the benchmark for comparison purposes. According to the recorded observations, 26% (16,937) of drivers were identified as black and 74% (48,099) were non-black. A total of 403 not-at-fault two-car crash incidents were reviewed, 78% (316) of not-at-fault drivers were non-black and 22% (87) were black. Alpert et al. (2004) suggest several policy implications based on their findings; specifically, that if all not-at-fault traffic crash reports were to record the drivers race or ethnicity, such data would

represent a stronger and more detailed benchmark than currently feasible by traffic observations. As research advances in the area of racial profiling, census data proves to be less reliable than initially thought; given the need for an accurate estimate of the driving population's violation patterns, this method provides a benchmarking option for comparing violator data.

Veil-of-Darkness Method in Vehicle Stop Analyses

In further recognition of the census data's weak estimations, the "veil-of-darkness" hypothesis was proposed by Grogger and Ridgeway (2006) as an innovative and inexpensive method to assess the likelihood of racial bias in vehicle stop decisions. The "veil-of-darkness" method is also a great alternative designed to circumvent the several previously mentioned benchmarking issues. This approach is based on the assumption that, when patrolling at night, police are less capable of recognizing the race or ethnicity of a driver before they decide to initiate a traffic stop, thus, evidence of racial bias will be more apparent among daylight traffic stops. In light of this assumption, researchers suggest designing a benchmark from the race distribution of drivers stopped at night, and if the racial distribution of daytime traffic stops is disproportionate then police officers may be engaging in racial profiling practices. Therefore, if supplemental observation finds that travel patterns, driving quality, and exposure to the police are similar among night and day drivers, testing for race-based decision making can be achieved simply by comparing race distribution across day and night traffic stops. In order to rely on the assumption that travel patterns are similar across day and night drivers, the study utilized natural daylight variations as they occur over the year. Meaning, while it becomes dark outside by early evening in the winter months, it stays light much later in the summer. Although there are variations in daylight across the year, a driver's travel patterns will not dramatically alter with the seasons.

Grogger and Ridgeway (2006) tested their method using traffic stop data collected by the Oakland Police Department. The researchers restricted their analysis to traffic stops conducted between 5 and 9pm, referred to as “intertwilight” period, which allowed them to test for racial differences between day and night traffic stops while also controlling for racial variation in travel patterns by time of day. Of the 6,563 usable reported traffic stop observations, 49% of daylight drivers stopped were black, and among the stops conducted while dark, 65% of drivers were black. According to this approach, evidence of racial profiling was not found, and further analysis concluded that deviations from their stated assumptions would need to be extraordinarily significant to invalidate their results.

This approach is beneficial in that, unlike previous methods, it does not require the use of external estimates for establishing the at risk population; nonetheless, some necessary assumptions do create limitations. For example, valid estimates may be threatened if racial differences in at risk groups vary seasonally between daylight and darkness; at risk group is defined in this study as being persons who drive a vehicle, are exposed to police, and have committed a traffic offense that would prompt an officer to initiate a traffic stop if observed. This approach is also limited by conditions that reduce the association between visibility and darkness, such as street lighting, as well as police profiling of vehicle characteristics to speculate about the driver’s race (Grogger, & Ridgeway, 2006).

To mitigate the limitation concerning possible seasonal variations in the at risk driving population, they suggest a future analysis focus on traffic stops occurring near the semiannual nationwide change to and from Daylight Saving Time (DST). In taking advantage of the abrupt shift in natural lighting, an analyst can ensure all traffic stops are analyzed from the same time of day as well as the same season. Ridgeway (2009) did just this in a later racial profiling analysis

for the Cincinnati Police Department. In this approach, analysis centered on traffic stops occurring 30 days prior to and 30 days following the DST switch. This analysis also include an evaluation on traffic stops specifically resulting in moving violations during the intertilight period across the whole year; the study excluded stops based on equipment violations, as exterior conditions of a vehicle could conceivably correlate with race. Neither of the analyses supported conclusions of racial profiling practices by the CPD; ultimately, findings revealed that African Americans were less likely to be stopped for a traffic violation during the daytime. The veil-of-darkness method utilizing the abrupt switch in natural lighting caused by Daylight Savings Time was applied to analyze vehicle stops by the Syracuse police department in New York between 2006 and 2009 (Worden, McLean, & Wheeler, 2012). This study yielded results consistent with the previous studies; in that, African Americans were no more likely to be stopped during daylight hours than hours of darkness.

Red Light Camera Data in Vehicle Stop Analyses

A recent study has proposed the use of red light camera data as an additional solution to the reoccurring concern that a driving population differs from the local/residential population depicted in census information (Eger, Fortner, & Slade, 2015). Among the 18 intersections where red light cameras were monitored within a particular jurisdiction, 8,383 violations were captured and thus generated records on the specific intersection involved, automobile, as well as the gender, race and address registered to the vehicle owner. Following the use of a mapping feature provided by Census road files to locate violator addresses, researchers were able to limit the sample to only violators in the surrounding counties. Furthermore, the researchers evaluated the racial composition of the census block groups where the red light runners reside. The final analysis focused on 2,882 red light camera violation records within the county. In the county

where the red light camera data was studied, 75% of residents are White and 15% of residents are Black. The racial composition of the general population did not match the demographics captured by the cameras; about 62% of violators were White and 30% were Black. Furthermore, when only looking at violators who were residents of the county, 71% were White and 20% were Black (Eger, Fortner, & Slade, 2015).

Without tying the red light camera data to the county's traffic citation data, this study assumes that those who violate red light laws are similar to other traffic violators who receive citations. According to this assumption, racial disproportionality should not be an automatic indicator of racial profiling when traffic stop data is compared to residential demographics. This study takes a unique approach by utilizing objective means to document traffic law violators and offers a race-neutral justification for law enforcement findings of racial disparities in traffic stop data. It is important to note that this is the only study of its kind and would benefit from replication; results are also limited by the reliance of vehicle registration and lack of certainty regarding the actual driver at the time of the violation. Nonetheless, this approach is beneficial in filling gaps in previous research as well as in offering a non-racial explanation for law enforcement activity (Eger, Fortner, & Slade, 2015).

Post-Stop Outcome Analyses

Many researchers have found it beneficial to analyze the existence of disparities after the traffic stop has been initiated because, unlike vehicle stops where estimation must be used to establish a comparison population, the drivers stopped can be used as the comparison population for post-stop outcomes. Members of minority communities consistently report racial differences in search rates as the most frustrating reality above all other post-stop experiences (Farrell, & McDevitt, 2010). Given this concern and when faced with racial profiling claims, many agencies

have found it beneficial to analyze the effect race or ethnicity has on officer decisions to search a citizen. When permissible, if law enforcement officers suspect a crime has been committed they will often search for evidence of the crimes commission. The Fourth Amendment of the U.S. Constitution guarantees, “the right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures.” Therefore, to initiate a search, an officer must generally have a judge-issued search warrant based on probable cause that the evidence of a specified crime will be found in a particular area. However, since a vehicle is easily moveable and could drive away before an officer has time to obtain a warrant, when an automobile is the suspected location of evidence there are certain exceptions to the warrant requirement that exist (*Carroll v. United States*, 1925). For example, officers are permitted to conduct a warrantless search if there is probable cause to believe evidence of a crime is located in the vehicle, when the driver gives the officer consent to search, incident to a lawful arrest, as well as when taking inventory of the vehicles contents during the impound process (Engel, 2008). When evaluating claims of racial profiling, discretionary searches are the main focus for analysis because, unlike searches incident to an arrest or inventory searches, they are fully based on an officer’s decision and not mandated by departmental policies (Engel, 2008).

In one of the first studies to analyze post-stop outcomes, evidence indicated that African American drivers were searched disproportionately more often than white drivers (Zingraff, Mason, Smith, Tomaskovic-Devey, Warren, McMurray, & Fenlon, 2000). The study evaluated searches recorded by officers as either probable cause or consent searches; the study chose to exclude searches incidental to an arrest since such searches are assumed to be obligatory. In conducting a descriptive analysis of all drivers who were stopped, this study focused on post-stop data reported by North Carolina Highway Patrol; the findings reported that, black male

drivers were 68% more likely to be searched than white male drivers. In general, approaches using post-stop decisions to examine the occurrence of racial profiling have been designed in a relatively short time span and descriptive analyses, such as the one just described, are less common today because they fail to include other variables that could account for findings of racial disparity. Current studies, which will be elaborated on below, typically utilize either a multivariate statistical model or the outcome test to identify discriminatory police practices in vehicle stop outcomes.

In 2012, a study examined post-stop police officer decisions using a multivariate model to determine whether Black and Hispanic drivers were searched at a rate different than nonminorities; specifically, the researchers were interested in controlling for other explanatory factors (Fallik, & Novak). Data collected from a large Midwestern police agency found that Blacks were overrepresented among all searches. Although minorities were searched more often, when other circumstances under which the encounter took place were measured it became unlikely that the driver's minority status was involved in the officers' decision making. In particular, the authors noted stops involving males, younger drivers (19-29), and stops occurring at night as having the greatest explanatory influence on discretionary type searches. Other studies have identified individual demeanor of the driver, location of stop, situational characteristics unique to the encounter, crime rate and socioeconomic conditions of the community as explanations for disparities other than race (Farrell, & McDevitt, 2010).

Researchers have struggled to identify a unique correlation between racial disparities and traffic stop decisions; comprehensive analysis shows racial disparities frequently exist in other areas of police decision making (Higgins, Vito, Grossi, & Vito, 2012). For this reason, the latest attempt in understanding post-stop activity has moved away from focusing on a police officer's

initial decision to search and instead examines the success rate of searches, by using a method known as an outcome test. The outcome test conducts a statistical comparison of the rate at which searches result in the discovery of contraband across different racial and ethnic groups. For example, if 100 drivers from each race/ethnic category are stopped, what percentages from each category are subsequently searched, and what is the percentage of contraband found among each race/ethnic group? Support for this approach argues that these rates can provide distinction between individual police bias and external factors unrelated to personal police intentions (Engel, 2008). The data source needed to conduct the outcome test is usually accessible without difficulty, so long as the law enforcement agency collects information on the outcome of searches. It is also sometimes preferred over other methods because the results are relatively simple to interpret without the need for complex explanations (Engel, 2008).

Despite its advantages, this approach has been criticized as being based on unsupported assumptions regarding citizens and police behaviors. To begin, it assumes that all racial and ethnic groups possess contraband at equal rates, which has not been confirmed by empirical research (Tillyer, Engel, & Cherkauskas, 2010). Furthermore, it is considered especially unreliable when used to analyze search decisions, as measurement of the success rate is only capable of testing an indirect disparate impact. In general, this current technique succumbs to the same methodological issues as the previous model, errors in specification. Inaccurate results may occur if key variables are not collected and thus not measured. The use of official traffic stop data is limited by what is collected; it is often difficult to identify and measure all key factors related to police post-stop decisions as well as environmental conditions and the situational characteristics of the driver (Engel, 2008). For example, factors such as verbal and non-verbal behavioral indicators of deception, travel patterns, time of day, crime rate of community, and

drug odors, are all potential race-neutral signs suspiciousness that officers are trained to pick up on and may lead to the search of a driver or the vehicle.

It is also interesting to note, although the temporal order of searches and arrests is rarely documented by police officers, it may prove to be beneficial in strengthening the methodologies of racial profiling analyses. The temporal order of events is particularly valuable when assessing police decisions to search, as this activity occurs less frequently than issuing a citation and is considered less discretionary than conducting an arrest. For example, in a situation where the search precedes the decision to arrest, the driver is more likely to encounter circumstances that would support claims of racially biased policing than similar claims stemming from a search incident to an arrest (Farrell, & McDevitt, 2010).

Furthermore, this lack of documentation is greatly associated with the failure to mandate the collection of information concerning the initial justification for the traffic stop as well as supplementary data explaining the rationale for any subsequent searches or arrests. Consequently, under current collection requirements it is impossible for an analysis to distinguish between discretionary and nondiscretionary law enforcement procedures. Without distinction, situations may be analyzed where the decision to stop a vehicle was not made within the solitary discretion of the officer; rather, state or departmental policies demanded police action to stop and/or search a particular driver. Such action must be taken regardless of any race or ethnicity determinations by the police officer, and thus should not be included in evaluating the occurrence of racial profiling practices. This issue is especially relevant when a stop is based on prior knowledge of a driver's outstanding warrants, or under circumstances where a search is required as incident to an arrest (Liederbach, Trulson, Fritsch, Caeti, & Taylor, 2007).

Taken as a whole, several of the described methodologies used to measure racial profiling have been criticized for interpreting traffic stop data without the foundation and guidance of any theoretical basis. Rather than designing an approach to include a theoretical goal of explaining behaviors, researchers have limited their studies to simply counting and comparing (Engel, Calnon, & Bernard, 2002). Interpretations of empirical data will greatly benefit from including relevant perspectives that address why police officers might engage in race-based decision making. In this regard, there are two important theoretical frameworks that address this shortcoming by examining the distribution of traffic stop and search activity in the context of police discretionary processes (Tillyer, & Engel, 2013).

Theoretical Explanations of Race-Based Decisions

Over the past several years, and even more so today, we have seen the issue of racial profiling become a topic of national significance. For this reason, arguably now more than ever, it is essential to provide the public with an understanding of law enforcement decisions and rationalizations. The first theoretical account that might aid in this objective is illustrated by *consensus theories* of law enforcement activity, which was described by Renauer (2013) as a structural function in the nature of policing. Consensus theories assume the public is in broad agreement in terms of societal goals and aspirations; specifically, according to this theory, society acknowledges the need for police to allocate most of their resources toward concentrating on concerns of crime and disorder. To meet society's expectations, police are naturally attracted to areas experiencing higher levels of criminal activity, primarily in response to citizen complaints. As a result, regardless of race, ethnicity, or other physical attributes, the residents in these areas are more likely to observe or experience stop and search police tactics (Novak, & Chamlin, 2012). Therefore, traffic stops may be disproportionately aimed at minority groups not

necessarily as a result of police bias, but due to the fact that they tend to reside in high crime areas where agencies have increased patrol units.

Conflict theory provides the second theoretical explanation; Petrocelli, Piquero, and Smith (2003) offer an excellent explanation of this theory and its implications for racial profiling and police decision making. This theory suggests that since law enforcement is a bureaucratic agency, it is naturally inclined to adopt policies and practices that minimize strain and maximize rewards, just as other similar organizations. Since police agencies are dependent on funding from external political structures, their authoritative status is only maintained if they serve the interests of the privileged and powerful. In doing so, they are incentivized to control and suppress the sectors of society that threaten the preservation of the status quo and the existing social hierarchies. For this reason, powerless individuals have an increased likelihood of officially being defined as criminal, processed by the criminal justice system, and have minimal ability to challenge the decisions of the criminal justice and legislative systems. These assumptions have supported the perception that minority and low socioeconomic statuses are associated with police decision making. Moreover, this theory may argue that minority drivers are stopped disproportionately, not because they violate the traffic laws more often, but because it is the path of least resistance when deciding who to control.

In distinguishing consensus and conflict theories, the former assumes criminal activity is concentrated in certain geographic areas, while the latter tends to assume that criminal offending is in fact more evenly spread out across the hierarchy of social groups, but police ignore crime among the powerful groups and instead primarily focus on those with low status and minimal influence. Although research continues to study how this exists in traffic stop decisions, it is more evident when examining the strategies used to police drug use. Just as the approaches for

analyzing traffic stop data are still evolving in an effort to determine the best method, the application and development of theoretical explanations for disproportional traffic stop decisions continues to evolve for providing a stronger understanding of race-based decisions.

Conclusion

Previous traffic stop research has primarily focused on improving the analysis of racial profiling data by studying various benchmarks for the at risk driving population's racial and ethnic distribution, while collectively discouraging the use of residential data alone (Engel, Calnon, & Bernard, 2002; Meehan, & Ponder, 2002; Alpert, Smith, & Dunham, 2004; Grogger, & Ridgeway, 2006; Eger, Fortner, & Slade, 2015). Furthermore, associated research has also claimed that without the base rate of the at risk driving population, conclusions of race-based decisions by law enforcement are nearly meaningless. While estimates of the driving population are well-founded in traffic stop research, such assessments often perpetuate the assumption that officers know the race and ethnicity of drivers prior to a traffic stop. Unfortunately, the collection of this variable is rarely required in state racial profiling statutes, which has likely contributed to its lack of analysis in empirical research.

The current study seeks to contribute to literature regarding traffic stop data and the methods used to identify racial disparities. In Texas, since 2009, officers who issue a citation and/or make an arrest following a traffic stop have been required to answer the question "whether the peace officer knew the race or ethnicity of the individual detained before detaining that individual." Texas is one of the few states in the nation that requires the collection and reporting of this information and it is this existing data that will be analyzed to answer the following research questions:

- 1) How frequently do law enforcement officers know the race and ethnicity of drivers prior to a traffic stop?

- 2) Are there differences in rates of race known across geographical regions?
- 3) Are there differences in rates of race known across county population sizes?
- 4) Are there differences in rates of race known across agency types?
- 5) Are there differences in rates of race known between counties with and without interstate thoroughfares?

CHAPTER 3

METHODOLOGY

As discussed in Chapter 2, literature aimed at evaluating racial profiling in traffic stop decisions has primarily focused on identifying disparities between the racial/ethnic composition of a population and how such is reflected in an agency's vehicle stop practices. However, in taking an often overlooked approach, this study relies on the underlying assumption that if an officer is unaware of a driver's race and ethnicity prior to deciding a traffic stop is necessary, allegations of racial motivation for the stop would lack sufficient support. For this reason, the analysis of this criterion could supplement race-neutral justifications for findings of racial disparities in traffic stop data. It is important to note, this study does not speak to racial disparities in police actions following a traffic stop, such as issuing citations or conducting vehicle searches, it is only intended to analyze claims of racially motivated decisions to stop a vehicle.

Research Questions

The research question for this study explores statewide reporting characteristics to compare the rates at which the race/ethnicity of motorists is observed before they were stopped; otherwise stated, the research question asks:

- 1) How frequently do law enforcement officers know the race or ethnicity of drivers prior to a traffic stop?

The second, third, fourth, and fifth research questions further explore the frequency established in question one to identify differences that emerge across various categories. Specifically:

- 2) Are there differences in rates of race known across geographical regions?
- 3) Are there differences in rates of race known across county population sizes?

- 4) Are there differences in rates of race known across agency types?
- 5) Are there differences in rates of race known between counties with and without interstate thoroughfares?

The first section of this chapter provides detailed information regarding the data source used for this study as well as a brief discussion on its reporting procedures. The following sections discuss the measures used in the current study and the data analysis plan. The concluding section of this chapter is reserved for a general discussion on the current study's limitations.

Data Source

TCOLE Existing Records

The data used for the present analysis was previously collected by law enforcement agencies in Texas from January through December 2014. This was the most recent data accessible at the time of this study, as 2015 data was not available until after March 1st 2016. According to Texas' policy on racial profiling, a law enforcement agency is defined as "any agency of the state, or of a county, municipality, or other political subdivision of the state, that employs peace officers who make motor vehicle stops in the routine performance of the officers' official duties" (Texas CCP, Article 2.132). The Texas statute further requires all agencies to complete an annual report concerning their racial profiling data, which must then be submitted to the Texas Commission on Law Enforcement (TCOLE). Given TCOLE's formal authority granted by Texas statute to enforce compliance with policy standards, the racial profiling information submitted to TCOLE Department Reporting System (DRS) and made accessible to the public online, serves as the most comprehensive collection of information available to reference for a valid and reliable analysis on racial profiling data.

Law enforcement agencies are instructed to submit their racial profiling reports in accordance to their classification status: 1) Exempt, 2) Tier 1, or 3) Tier 2. If an agency does not conduct routine motor vehicle stops, they are classified as Exempt and are only required to submit a report containing their general contact information. For example, district attorney offices are commonly exempt from filing annual reports because, although they perform investigations, they do not routinely make vehicle stops. Likewise, the arson investigators employed by fire departments are typically exempt for the same reason. Since the purpose of the current study is to analyze racial profiling data collected during motor vehicle stops, agencies exempt from reporting such information are not included.

Law enforcement agencies without the exempt status, thus conduct traffic stops as a routine departmental responsibility, are required to submit a Tier 1 or Tier 2 annual racial profiling report. Unlike Tier 2, the Tier 1 agencies utilize vehicles equipped with video and audio devices to carry out motor vehicle stops; therefore, they are considered partially exempt and not required to submit a full racial profiling report. As discussed in the first chapter, when a motorist is issued a citation or an arrest is made, partially exempt agencies are expected to report the following information: “(a) the number of motor vehicle stops, (b) the number of types of race or ethnicity of the persons(s) who were stopped was, (c) the number of stops that the race or ethnicity was known prior to the stop, (d) the number of stops in which a search was conducted, and (e) number of searches that consent was received prior to search” (TCOLE, 2013). Furthermore, the report sorts the number of motor vehicle stops to reflect when the outcome was citation only, arrest only, or both. For example, local police departments, county sheriffs, and select county constables are typically the types of agencies classified as Tier 1. A blank racial

profiling report outlining each criterion and their corresponding response categories can be viewed in the Appendix A.

Full reporting, as mandatory for those with Tier 2 status, includes several variables beyond what is required for Tier 1 agencies, such as the number of stops by gender, types of contraband if found, and type of location where stop occurred. Moreover, their report must also include a statistical analysis of their motor vehicle stops compared to their population's ethnic and gender demographics. Tier 2 agencies are also asked to provide documentation of any racial profiling complaints and the associated resolutions. Full reporting agencies often consist of special jurisdiction agencies such as city marshal divisions, public school districts, and public college and university police forces. While these agencies employ peace officers with a responsibility to conduct traffic stops, they rarely include city police departments since their patrol cars are typically equipped with camera and audio devices. Police decision making has been the predominate concern among both academia and the public in regards to racial profiling claims; therefore, given the evident value in assessing their responses, Tier 2 agencies are essentially irrelevant to the current study and thus excluded.

Although there are three classifications of racial profiling reports, for the reasons mentioned above, this analysis only focuses on Texas law enforcement agencies classified as Tier 1/Partially Exempt. In 2014, a total of 1,305 law enforcement agencies submitted a Tier 1 racial profiling report online through the TCOLE DRS. In particular, this study focuses on the *yes* or *no* response categories regarding whether the race or ethnicity was known to the officer prior to the traffic stop, as reported for criterion C.

Measures

This study will begin by measuring how frequently law enforcement officers know the race or ethnicity of motorists prior to traffic stops. As previously mentioned, officers recorded *yes* or *no* regarding whether they knew the drivers race/ethnicity before the stop and agencies annually submit the department's response totals. To measure the frequency of the entire data set, the totals for each response category were entered into an excel spreadsheet and then used to calculate the percent known and percent unknown. Following this measurement, three additional measures are used to assess the variations across geographical regions, populations served, and agency type. To further describe the data, the median was calculated for each response category and is provided to show what is typical of the distribution. Given the presence of outliers in the data set, extreme high values, the distribution is skewed; therefore, median is provided to demonstrate the central tendency of the distributions.

Geographical Region. The present study will utilize the seven regions already established by TCOLE to assess differences in response rates across geographical regions of Texas. TCOLE split Texas according to the location of their regional field offices; the regions are labeled as: 1) Panhandle, 2) West Texas, 3) South Texas, 4) South East Texas, 5) North East Texas, 6) North Central Texas, and 7) Central Texas. A map of the regions can be viewed in the Appendix B.

County Population Size. Official statewide population figures reported by the 2010 U.S. Census will be used to assess differences in response rates by county population sizes. Counties without at least one of the Tier 1 agencies being analyzed in the current study were excluded. The remaining 242 counties were categorized in relation to their population size: 1) <25,000, 2) 25-49,000, 3) 50-99,999, 4) 100-249,999, 5) 250-499,000, 6) 500-999,999, or 7) >1,000,000. All

agency data was then grouped and assessed according to their corresponding county's population size.

Agency Type. As described in the previous section, there are various types of Tier 1 law enforcement agencies. Although city police departments, county sheriff offices, and county constable precincts are the most common among partially exempt agencies, additional agencies that provide more specific services also file Tier 1 racial profiling reports. For the purpose of assessing the differences in response rates by agency type, each agency will be organized according to its jurisdictional responsibility: 1) city, 2) county, or 3) special district.

Interstate Thoroughfare. Official Texas Highway Designation Files reported by the Texas Department of Transportation (TxDOT) were used to identify the 20 interstate highways across Texas and the 87 counties they navigate through. All agency data was then grouped and assessed according to whether their corresponding county is located on the route of an interstate thoroughfare.

Plan of Analysis

The first portion of Chapter 4 will focus on describing the general variations that emerge across the law enforcement agencies included in the study in regards race known or unknown prior to a traffic stop. Next, descriptive analysis of the geographical regions, county population sizes, agency types, and interstate thoroughfares are presented to determine differences in rates of race known. Prior to conducting the analysis, 119 law enforcement agencies were excluded from the initial pool of 1,305 agencies. Racial profiling reports were excluded for the following reasons: 1) the agency did not report at least one vehicle stop in 2014, 2) their report had conflicting totals across variable response categories, or 3) for circumstances of obvious abnormal reporting that threatened the validity of the current analysis. In regards to the latter, for

example, an agency's report was deemed abnormal and thus excluded when they reported 1,189 total vehicle stops and all resulted in both a citation and an arrest. In addition, the racial profiling report submitted by Texas Department of Public Safety (DPS) was excluded due to its statewide jurisdiction and inability to be classified according to the various measures used. The variables measured in this study are important for the purpose of developing a simplified approach to analyzing racial profiling data. Providing a descriptive analysis on the measurement of these variables without the use of a comparison benchmark may offer a means for mitigating racial profiling claims for law enforcement in circumstances where it is impossible to identify driver characteristics prior to a traffic stop.

Limitations

Some limitations exist in the present study and therefore the results should be interpreted with slight caution. First, although claims of racial bias would be questionable in a situation where the officer making the traffic stop reported no knowledge of the driver's race prior to the stop, such claims should not be discounted outright. Factors other than a physical observation of the driver may lead an officer to accurately speculate the race or ethnicity prior to the stop; such as officer experience in the location where the stop occurred as well as the type and bodily features/condition of the vehicle. When an officer stops a motorist and issues a citation or makes an arrest, they are required to answer "race or ethnicity known prior to stop?" with a strict yes or no. Given the limited response categories, race must either be absolutely known or unknown to the officer; the reporting form does not permit speculation so such is not capable of measurement.

Second, since racial profiling criteria do not inquire about departmental reporting expectations, reliability may be threatened when interpreting the calculated response

percentages. The culture of an agency influences how officers answer the racial profiling criteria. With over 1,000 agencies reporting annually, it is impractical to know how each agency instructs its officers to answer whether they “knew” the race/ethnicity of the driver. If the tone of an agency suggests racial profiling reports are a mere formality involving additional paperwork, officers may undervalue accountability and precision regarding proper response practices.

Lastly, the data used in the present study relies entirely on an officer’s subjective knowledge and is vulnerable to dishonest and inaccurate reporting procedures. Racial profiling data is reported and analyzed at the agency level, which eliminates the ability to evaluate the truthfulness among individual officers and could result in the underreporting of the criteria used in the present study.

Despite the limitations described, the present study will expand on previous literature to deliver an innovative and realistic approach in the breakdown of the collection requirements for traffic stop data. The overall purpose of this study is to examine the existing records of racial profiling data in Texas and provide a descriptive analysis of variations and consistencies as they emerge across law enforcement agencies and jurisdictions in terms of whether officers typically know the race/ethnicity of the drivers they are stopping. The following chapter elaborates on the findings of this study as well as how results were analyzed.

CHAPTER 4

RESULTS

Introduction

To address the current research questions highlighted in the previous chapters, the following chapter provides a detailed presentation of the data collected from the existing TCOLE reports on racial profiling for Tier 1 Texas law enforcement agencies. To begin, the data includes basic descriptive information on the total 1,186 agency reports analyzed for this thesis. The second portion of this chapter includes a descriptive analysis of the records in terms of geographical region, agency type, county population size, and interstate thoroughfares.

Descriptives of Total Agencies and Traffic Stops

- 1) How frequently do law enforcement officers know the race or ethnicity of drivers prior to a traffic stop?

To begin the analysis, the data in Table 1 presents the general descriptive information on the 1,186 law enforcement agencies analyzed in the current study; specifically, how frequently the race of drivers is known to officers prior to vehicle stops. In the total number of motor vehicle stops analyzed ($n = 3,250,984$), the majority of law enforcement officers reported not knowing the race of the driver prior to the stop with 97.1% of responses indicating race was unknown and 2.9% indicating known. The median vehicle stops per agency where the race was known prior to the stop was 3. Meaning, in 2014, one-half of the total law enforcement agencies reported race as known in fewer than 3 total traffic stops. It is also important to note that 38.5% of all agencies did not know the race of the driver prior to the stop in any of their total vehicle stops for the year.

Table 1

Was Race Known Prior to Stop?

Total Agencies	Yes (median)	No (median)	Total Vehicle Stops (median)
<i>n</i> = 1,186	94,633/ 2.9% (median = 3)	3,156,351/ 97.1% (median = 743)	3,250,984 (median = 760)

Descriptives of Race Known by Geographical Region

2) Are there differences in rates of race known across geographical regions?

Table 2 presents the response category information regarding whether race was known prior to the stop for all seven regions analyzed in the current study (see Appendix B for a map of the regions in Texas). Region 6 reported the most stops, accounting for 31.6% of the total vehicle stops, followed by Region 7 at 20.8%, Region 4 at 20.2%, Region 3 at 9.8%, Region 5 at 7.1%, Region 2 at 6.4%, and concluding with Region 1 at 4.0%. There was a large degree of consistency across the regions in terms of the rate race was known, with each region reporting race as unknown in more than 90% of their total vehicle stops. For example, Region 3 reported the highest rate of race unknown at 98.5% of total vehicle stops, compared to Region 5 at 92.6% of total vehicle stops where race was unknown. The median also reflects a high rate of stops where race was unknown; one-half of all agencies from each region reported knowing the race of the driver in fewer than 13 total vehicle stops. Furthermore, one-half of the total law enforcement agencies in Region 3 did not know the driver’s race prior to any of their total vehicle stops.

Table 2

Descriptives of Race Known by Geographical Region

Region (#/% of total agencies)	Yes (median)	No (median)	Total Vehicle Stops (median)
Region 1 (<i>n</i> = 143/12.1%)	3,790/ 2.9% (median = 1)	127,083/ 97.1% (median = 247)	130,873/4.0% (median = 255)
Region 2 (<i>n</i> = 105/8.9%)	3,728/ 1.8% (median = 2)	205,252/ 98.2% (median = 386)	208,980/6.4% (median = 390)
Region 3 (<i>n</i> = 129/10.9%)	4,919/ 1.5% (median = 0)	315,229/ 98.5% (median = 974)	320,148/9.8% (median = 974)
Region 4 (<i>n</i> = 194/16.4%)	12,336/ 1.9% (median = 5)	644,321/ 98.1% (median = 1168)	656,648/20.2% (median = 1264)
Region 5 (<i>n</i> = 192/16.2%)	17,110/ 7.4% (median = 6)	213,985/ 92.6% (median = 504)	231,095/7.1% (median = 532)
Region 6 (<i>n</i> = 228/19.2%)	32,176/ 3.1% (median = 13)	993,603/ 96.9% (median = 1078)	1,025,779/31.6% (median = 1142)
Region 7 (<i>n</i> = 195/16.4%)	20,574/ 3.0% (median = 4)	656,887/ 97.0% (median = 1214)	677,461/20.8% (median = 1259)

Descriptives of Race Known by County Population Size

3) Are there differences in rates of race known across county population sizes?

Presented in Table 3 are the rates of race known prior to a stop organized according to the population size of the county in which the agency conducted the stop. The profiles for each population category are defined below; specifically, the first column provides how many of the counties analyzed in this study fall into a given population bracket as well as how many of the law enforcement agencies are in the corresponding county. The findings show that race continues to typically be unknown and does not differ depending on county population size. As reported

below, race was unknown in more than 93% of traffic stops across all seven population categories. To further highlight the rate of instances where race was unknown, the largest percentage of traffic stops analyzed were conducted in the 5 counties with a population greater than 1,000,000 and, of the 1,242,826 total vehicle stops conducted in these counties, race was unknown prior to 97.9% (1,217,188) of stops. Moreover, one-half of the agencies located within this county population bracket reported knowing the race of the driver in fewer than 20 traffic stops.

Table 3

Descriptives of Race Known by County Population Size

Population Size (#/% of Counties and Agencies)	Yes (median)	No (median)	Total Vehicle Stops (median)
< 25,000 Counties (<i>n</i> = 142/58.7%) Agencies (<i>n</i> = 365/30.8%)	6,589/ 2.3% (median = 2)	282,670/ 97.7% (median = 370)	289,259/8.9% (median = 376)
25,000-49,999 Counties (<i>n</i> = 38/15.7%) Agencies (<i>n</i> = 172/1.5%)	8,268/ 4.1% (median = 2)	191,335/ 95.9% (median = 505)	199,603/6.1% (median = 533)
50,000-99,999 Counties (<i>n</i> = 23/9.5%) Agencies (<i>n</i> = 138/11.6%)	12,208/ 6.1% (median = 11)	187,986/ 93.9% (median = 700)	200,194/6.2% (median = 748)
100,000-249,999 Counties (<i>n</i> = 19/7.9%) Agencies (<i>n</i> = 153/12.9%)	14,330/ 3.7% (median = 7)	370,871/ 96.3% (median = 958)	385,201/11.8% (median = 967)
250,000-499,999 Counties (<i>n</i> = 10/4.1%) Agencies (<i>n</i> = 136/11.5%)	14,050/ 2.8% (median = 2)	479,160/ 97.2% (median = 970)	493,210/15.2% (median = 1016)

Table 3 *Continued*

Population Size (#/% of Counties and Agencies)	Yes (median)	No (median)	Total Vehicle Stops (median)
500,000-999,999 Counties (<i>n</i> = 5/2.1%) Agencies (<i>n</i> =80/6.7%)	13,550/ 3.1% (median = 17)	427,141/ 96.9% (median = 2398)	440,691/13.6% (median = 2403)
> 1,000,000 Counties (<i>n</i> = 5/2.1%) Agencies (<i>n</i> = 142/12.0%)	25,638/ 2.1% (median = 20)	1,217,188/ 97.9% (median = 3159)	1,242,826/38.2% (median = 3166)

Descriptives of Race Known by Agency Type

4) Are there differences in rates of race known across agency types?

Table 4 provides a breakdown of information related to whether the race was known prior to a stop according to agency type. The majority of vehicle stops analyzed were conducted at the City level with 81.1% of total stops, followed by County agencies responsible for 17.3% of stops, and Special District agencies accounting for the least at 1.6% of stops. Consistency remains and not differences emerge in terms of race unknown when analyzed across all agency types; in each category, the race was reported as unknown in more than 95% of total vehicle stops. Similar findings are shown by the median; race was completely unknown in one-half of all stops by County level agencies, it was known in 1 or fewer stops across one-half of the Special District agencies, and known in only 9 or fewer stops in one-half of the City agencies.

Table 4

Descriptives of Race Known by Agency Type

Agency Type (#/% of Total Agencies)	Yes (median)	No (median)	Total Vehicle Stops (median)
City (<i>n</i> = 725/61.1%)	85,369/ 3.2% (median = 9)	2,551,335/ 96.8% (median = 1235)	2,636,704/81.1% (median = 1290)
County (<i>n</i> = 390/32.9%)	7,223/ 1.3% (median = 0)	556,456/ 98.7% (median = 232)	563,679/17.3% (median = 240)
Special District (<i>n</i> = 71/6.0%)	2,041/ 4.0% (median = 1)	48,560/ 96.0% (median = 112)	50,601/1.6% (median = 116)

Descriptives of Race Known by Interstate Thoroughfare Location

- 5) Are there differences in rates of race known between counties with and without interstate thoroughfares?

Table 5 contains information regarding vehicle stops and their proximity to interstate thoroughfare boundaries. The first column describes the number of counties with or without an interstate and then the number of agencies within those counties. Although 44.2% of the agencies analyzed in this study are located in counties without an interstate thoroughfare, an overwhelming majority of the total vehicle stops, at 79.1%, were conducted in counties with an interstate. Just as the foregoing results above have shown, the data below finds that race is unknown to officers prior to the majority of vehicle stops. There was no difference across interstate location, as race was unknown in 97.3% of the vehicle stops conducted in counties with an interstate and equally unknown in 96.4% of the vehicle stops conducted in counties without. According to the median, in one-half of the agencies from each category race was only known in 4 or fewer stops.

Table 5

Descriptives of Race Known by Interstate Thoroughfare Location

Interstate (#/% of Counties and Agencies)	Yes (median)	No (median)	Total Vehicle Stops (median)
Yes Counties (<i>n</i> = 87/36%) Agencies (<i>n</i> = 662/55.8%)	70,316/ 2.7% (median = 4)	2,502,733/ 97.3% (median = 1,002)	2,573,049/79.1% (median = 1,062)
No Counties (<i>n</i> = 155/64%) Agencies (<i>n</i> = 524/44.2%)	24,317/ 3.6% (median =3)	653,618/ 96.4% (median =530)	677,935/20.9% (median =567)

Summary

This chapter began by examining existing statewide racial profiling reports to analyze how frequently law enforcement officers know the race/ethnicity of drivers prior to vehicle stops. In regards to this initial objective, the data analysis suggests that an overwhelming majority of officers do not typically know the race of drivers prior to traffic stops. Furthermore, such results were consistently found when evaluating for differences across geographical regions, agency types, county population sizes, as well as between counties with and without an interstate thoroughfare. Overall, there were no statistically significant differences found across any of the measures, as they all collectively illustrated a high rate of stops where the race was reported as unknown. The findings of this study and suggestions for future research are discussed in detail in the following chapter.

CHAPTER 5

DISCUSSION

Over the past decade, numerous social scientists have made elaborate efforts to detect racially biased practices among law enforcement agencies and have mainly focused on improving strategies of analysis for findings of racial disparity. The conclusions of previous research are largely limited by their failure to produce indisputably reliable benchmarks, as well as for their costly data collection methods that cannot realistically be applied equally across various municipalities. Unlike previous research, the current study does not involve establishing external estimates of the at-risk population; instead it focuses exclusively on information already available to all law enforcement agencies in Texas, their collection of state mandated traffic stop data. Within this context, the present research seeks to provide agencies with an inexpensive analysis strategy by examining a consistently unquestioned assumption made by previous racial profiling analyses; that is, that officers know the race/ethnicity of drivers prior to making traffic stops. The data was derived from existing racial profiling reports, which all Texas law enforcement agencies are required by state law to submit on an annual basis to TCOLE. The following information serves to highlight the points of discussion that emerged from the findings.

Significance of Findings by Research Question

- 1) How frequently do law enforcement officers know the race or ethnicity of drivers prior to a traffic stop?

This section is structured to discuss the significance of the findings as they pertain to each of the current research questions. To begin, the findings of the present study suggest that overall officers almost never know driver race prior to traffic stops (see Table 1 in chapter 4). Out of over 3.25 million traffic stops statewide in 2014, the race of the driver was known to the

officer prior to the stop only 2.9% of the time. Moreover, differences were not found regarding rates of race known across geographical regions, county population sizes, agency types, or between counties with and without interstate thoroughfares; high rates of race unknown prior to the stop was consistently reported across all. These findings are especially notable as *it cannot be determined that an officer was racially profiling a driver when they had no knowledge of the driver's race prior to the stop*. This particular criterion had not specifically been analyzed by previous research at the time the current study; for this reason, these findings primarily act as a precursor or reinforcement for previous studies focused on evaluating race-neutral explanatory factors for findings of disproportionality in traffic stop data.

2) Are there differences in rates of race known across geographical regions?

The fact that differences were not found across geographical regions in terms of officer knowledge of race prior to stops is valuable information when considering that, although the racial composition of drivers likely varies from region to region, police remained consistent in their reported observations of race (see Table 2 in chapter 4). Given the proximity to Mexico, Texas has often been at the center of debates regarding the treatment of Hispanics; including claims of racially motivated traffic stops by local police officers for checks on immigration status (Border Network for Human Rights, 2008). However, despite the 2010 U.S. Census ranking cities in Region 2 and Region 3 among the top five cities in the nation with the largest Hispanic populations, race was reported as unknown prior to nearly all of the traffic stops in these regions. Furthermore, not only were the findings of race unknown in Region 2 and Region 3 consistent with other regions, they actually had the two highest reporting rates of race unknown prior to stops at 98.2% and 98.5% respectively. This is important in that an officer cannot racially profile

a driver for immigration inquiry purposes if he in fact does not know the race of the driver prior to the stop.

3) Are there differences in rates of race known across county population sizes?

As previously mentioned, findings also demonstrated that there were no differences in terms of race known across county population sizes, as race was consistently reported as unknown prior to traffic stops regardless of county population size (see Table 3 in chapter 4). These findings are interesting given the suggestion by previous research that, since disadvantaged minorities tend to cluster in larger urban cities, there is an increased likelihood they will be targeted by police in such areas (Parker, Lane, & Alpert, 2010). The U.S. Census classifies populations of 50,000 or more as urbanized areas; nonetheless, differences did not emerge in terms of urbanized versus rural counties in Texas, both categories reported overwhelmingly high rates of race unknown prior to the stop. The current findings are more consistent with previous studies that found several combinations of race-neutral factors supporting patterns and reports of racial disparity in traffic stops; which include both situational and community characteristics (McMahon, Garner, Davis & Kraus, 2002; Farrell, & McDevitt, 2010). These factors will be discussed in a later section of this chapter.

4) Are there differences in rates of race known across agency types?

Many of the previous large scale studies evaluating racial profiling have almost exclusively focused on city level police departments, with a few major studies directed at state level police departments. The National Institute of Justice, whose research goals include developing policies to improve law enforcement performance, provides online information to the public specifically concerning racial profiling and traffic stops. This information cites various research approaches aimed at assessing racial profiling in traffic stops; of the ten studies focused

on this issue, seven used traffic stop reports from city level police departments. Despite there being a lack of research pertaining to both county level agencies and special district agencies, their reporting of race known prior to a traffic stop did not differ from city municipalities in the current study (see Table 4 in chapter 4). Race was reported as unknown in an overwhelming majority of stops across all agencies types. In light of the current media attention and recent investigations by the Department of Justice regarding racially motivated practices of city police departments, the present findings of consistency across different agency types is noteworthy.

- 5) Are there differences in rates of race known between counties with and without interstate thoroughfares?

Another major goal of the current study was to determine if differences existed in terms of race known between counties with and without interstate thoroughfares. The results showed that race was highly unknown in both counties where stops were conducted by agencies located in a county with a major interstate thoroughfare as well as those conducted in a county without (see Table 5 in chapter 4). The objective here is to identify the counties where agencies are conducting the majority of traffic stops, as more stops are likely conducted on interstate thoroughfares compared to other roadways. Moreover, traffic stops analyzed only in terms of general population size can yield misleading results to the extent that the numerical breakdown of drivers and stops also differs depending on proximity to an interstate thoroughfare.

The current findings are important when considered within the context of previous racial profiling research in which the value of analyzing the differences in driving patterns as well as differences in exposure to the police were emphasized (McMahon, Garner, Davis, & Kraus, 2002; Engel, 2008). To demonstrate the importance of analyzing stops according to interstate thoroughfare locations, in Kimble County the number of traffic stops conducted exceeded that of their population size. This would be considered unusual except for the fact that the largest

interstate thoroughfare in Texas runs through Kimble County, which therefore greatly increases the number of vehicles stopped by law enforcement agencies in this county. Such findings are supportive of the notion that those driving on roadways, especially interstate thoroughfares, could differ from the residents of the surrounding population. What's more, the 36% of the counties with an interstate thoroughfare were responsible for nearly 80% of the total vehicle stops. The fact that significantly more traffic stops occurred in areas with an interstate thoroughfare may suggest that there is an increase in police patrols along these roadways. It is important to note, stop data from Texas DPS was not included in the current study, though they do enforce state traffic laws along interstate thoroughfares. With increased patrol by the agencies along these roadways, combined with the differences in the driving and residential populations in these areas, there may be viability in the idea that differences in exposure to police could produce disparity in traffic stop data when compared to surrounding demographics.

Why Do Officers Not Know the Race of Drivers Prior to Traffic Stops?

As noted earlier in this chapter, previous studies have found several situational and community characteristics that offer race-neutral explanations for findings of racial disparity in traffic stop data. These include location of the stop, crime rate/calls for service in area, age of driver, as well as the individual demeanor of the driver (McMahon, Garner, Davis & Kraus, 2002; Farrell, & McDevitt, 2010). Just as previous research found race-neutral explanations, the difficulty involved in determining the race of a driver prior to a traffic stop support the high rate at which police reported the race of drivers as unknown prior to stops in the current study.

First, vehicle equipment that inhibits sight into vehicles, such as window tinting, can make it difficult for an officer to determine the race of a driver prior to a traffic stop. In Texas, any level of tint darkness can be used for a vehicle's back side windows and rear window;

therefore, as the darkness of window tinting increases, so does the visual difficulty for racial determinations. Second, an officer's direction of travel can also make it difficult to determine a driver's race prior to a traffic stop. For example, if the officer is approaching the vehicle from behind their ability to view the race of the driver would likely be hindered by the vehicle's headrests and, once again, window tinting. Third, the distance between a patrol vehicle and the vehicle being stopped adds to this existing difficulty. For instance, officers running radar from over 100 yards away would certainly be limited in their ability to view the race of passing motorists, as well as prior to any stops. To put this further into perspective, the Texas Department of Transportation (TxDOT) requires all freeways and most rural arterial lane widths be a minimum of 12ft; additionally, the corresponding shoulders must be wide enough for stopped vehicles to be completely clear of all travel lanes (TxDOT, 2014). Given the potential distance between an officer running radar from the shoulder of a roadway and a motorist approaching from several yards away in one of possibly multiple travel lanes, it would likely be difficult to make out more than a silhouette of a driver's physical characteristics. Fourth, potential obstructions can emerge in the line of sight between the officer and the driver being stopped, which would make it difficult to determine the driver's race prior to the stop. Lastly, time of day also presents challenges for determining the race of a driver prior to a stop, as visibility decreases the darker it is outside.

If one or more of the above factors are present in a particular traffic stop, the officer's ability to determine the race of the driver prior to the stop would be justifiably impaired. Not only do these visual difficulties involved in traffic stops support the findings of the current study, but previous research analyzing the veil-of-darkness hypothesis also suggest that stops conducted during the unquestionably impaired observational hours of darkness are no more race-neutral

than stops conducted during daylight hours (Grogger, & Ridgeway, 2006; Ridgeway, 2009; Worden, McLean, & Wheeler, 2012).

Although an officer would have already made the decision to stop the vehicle, meaning race can no longer be considered an influential factor of the stop, the events that ensue during the short time span before the suspect driver comes to a complete stop are notable for a whole picture explanation. During this time, the officer initiating the traffic stop would need to remain focused on numerous situational factors unrelated to the race of the driver. That is, the observed violation, ensuring the safety of the stops location, and providing dispatch with necessary information over the radio such as location, license plate number, number of occupants, description of vehicle, and/or any unusual or suspicious behavior. Simply put, an officer has numerous responsibilities to execute during the commission of a traffic stop, and when coupled with possible visual interferences, identifying the race of the driver prior to a traffic stop would be an unlikely priority.

Limitations and Suggestions for Future Research

While the following information will highlight limitations of the current study, such limitations are intended to also offer suggestions for future research. To begin, the data used in this study was limited by the subjectivity of the response category. In that, the data relies on the truthfulness of officer's response to whether they knew the race or ethnicity of the driver prior to the traffic stop. Future research should focus on replicating the conditions commonly experienced by law enforcement when conducting traffic stops to establish a baseline for the purpose of comparing officer response rates. For example, a blind experiment independent from any law enforcement agency could put third party observers in various situations where they must definitively know the race of a motorist prior to a stop. The situations would include the

realistic conditions officers face that increase the difficulty in determining the race of a driver prior to a traffic stop such as visually inhibiting vehicle equipment, direction of travel, distance between the observers vehicle and suspect vehicle, sightline barriers, and time of day. The data recorded by third party observers can then be used to generate a baseline, as their responses are not weighted by the same threat of potential consequences that may persuade officers to record untruthful responses to whether they knew the race of a driver prior to a stop, such as racial profiling complaints.

Furthermore, although the high degree of race unknown across all measures may lead to suspicions of inaccuracy in responses, this study does not establish the parameters of an accurate response rate. Despite findings of consistency that suggest affirmation in the high rates of race unknown, some degree of inaccuracy or underreporting is likely. Given this limitation, subsequent research should use longitudinal data to further confirm consistency in the statistical patterns; if the rates of race unknown remained stable and consistent year after year, then such would indicate reliability of the responses and thus accuracy of the findings.

The current study was also somewhat limited by the nearly 100 agencies with data entry errors, such as inconsistent totals across the response categories, which were consequently excluded from the current analysis. As a whole, Texas should improve on its reporting and auditing methods to eliminate potential data errors and insure the accuracy of the data collection. For example, if all officers had access to a program on their mobile in-car computers where they could input racial profiling data immediately following a traffic stop, then not only could the system instantly detect data entry errors, but annual racial profiling reports could be automatically generated in the same format across all agencies.

Lastly, the generalizability of this study is limited as only Texas law enforcement agencies were analyzed. The rate at which officers in Texas report race as known prior to a traffic stop may not be representative of agencies in other states. Nonetheless, until data collection mandates are standardized across the nation or additional states initiate requirements for the collection of this specific criterion during traffic stops, the current study cannot be replicated to evaluate how its findings compare to other states.

Conclusion

By focusing exclusively on the traffic stop criterion regarding officer knowledge of driver race prior to traffic stops, this thesis fills the gap in existing research that overlooks the concept that an officer must first know the race of a driver before they can engage in racial profiling practices. The current findings indicate that law enforcement officers rarely know the race of a driver prior to conducting a traffic stop. This was consistently found in high rates when evaluating for differences across geographical regions, county population sizes, law enforcement agency type, as well as between agencies located in counties with and without an interstate thoroughfare. What's more, in each analysis conducted the rate of race unknown prior to stops never fell below 90%. Statistically, the frequency of race unknown is significantly more widespread than occurrences of race known and the level of consistency across almost 1,200 law enforcement agencies and over 3.25 million traffic stops highly suggests the findings are both meaningful and accurate.

In general, research focused on assessing racial disparities in traffic stops remains disputed in identifying valid benchmarks (Tillyer, Engel, Cherkauskas, 2010). Nonetheless, several departments are under pressure to empirically answer whether their agency engages in racial profiling practices. Utilizing the approach of the current study, a law enforcement agency

can answer such inquiries with the data it is already required to collect; thereby eliminating the need to implement a costly benchmarking strategy that is not proven to offer definitive conclusions. Moreover, given the public nature of the data used in this approach, an agency can also evaluate how its rates of race known prior to traffic stops measures against similarly situated agencies. Although the current study is not without its limitations and additional research is needed to fully evaluate the degree to which race impacts police decision making, this study does take a proactive step by analyzing from an important perspective not yet addressed in existing research.

However, as strategies to assess racial profiling are a continuously evolving debate among policy makers, law enforcement agencies, and researchers, the results from any approach will be incapable of producing a definitive judgment on the pervasiveness of racial profiling in police initiated traffic stops. In that, policy is designed to prohibit individual officers from engaging in racial profiling, yet the law requires racial profiling data be compiled and submitted collectively from each agency; therefore, any analysis findings of racial disparity in traffic stops, citations, searches, or arrests cannot be used to determine if officers are engaging in racial profiling. Thus, since the factors that influence individual officer decision-making, whether race-neutral or otherwise, cannot be used to explain racial disparities under the current collection and reporting methods, the straightforward approach of this thesis may be least affected by the conflict between the policy goals and reporting requirements. Regardless of racial disparities in traffic stop data, racial profiling cannot be determined conclusively when officers do not have knowledge of the driver's race prior to the traffic stop.

APPENDIX A

BLANK ONLINE RACIAL PROFILING REPORTING FORM

Motor Vehicle Racial Profiling Information

Number of motor vehicle stops:

- 1. ___ citation only
- 2. ___ arrest only
- 3. ___ both
- 4. ___ Total (4, 11, 14 and 17 must be equal)

Race or Ethnicity:

- 5. ___ African
- 6. ___ Asian
- 7. ___ Caucasian
- 8. ___ Hispanic
- 9. ___ Middle Eastern
- 10. ___ Native American
- 11. ___ Total (lines 4, 11, 14 and 17 must be equal)

Race or Ethnicity known prior to stop?

- 12. ___ Yes
- 13. ___ No
- 14. ___ Total (lines 4, 11, 14 and 17 must be equal)

Search conducted?

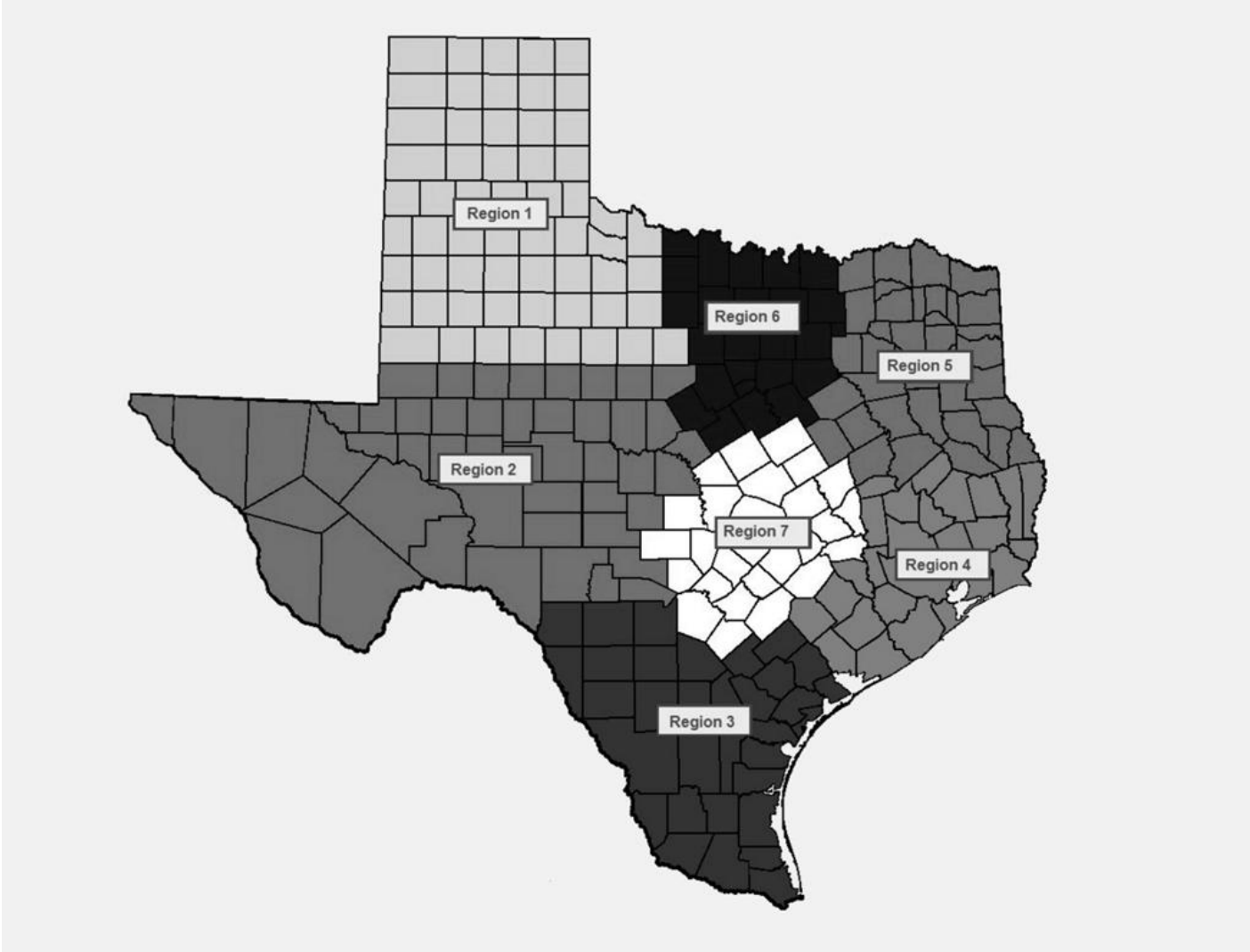
- 15. ___ Yes
- 16. ___ No
- 17. ___ Total (lines 4, 11, 14 and 17 must be equal)

Was search consented?

- 18. ___ Yes
- 19. ___ No
- 20. ___ Total (must equal line 15)

APPENDIX B

MAP OF TEXAS GEOGRAPHICAL REGIONS



Source: Texas Commission on Law Enforcement.

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