

Context of Police Use of Deadly Force: Statistical Case Study on Officer and Civilian Demographics in Texas

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ABSTRACT: The Fourth Amendment authorizes the police to use force or deadly force. This statistical case study examined police officers' demographics and their use of deadly force in Texas. This case study aimed to investigate the number of incidents in Texas between 2020-2023 and compile police-civilian deadly force encounters. The data was collected from the Texas Attorney General's Office. The researchers provided data on the demographics of the deceased and the officers' demographics, including age, race, sex, and years of service in the department. The purpose of the study is two-fold: (1) to determine if there is a link between officers' demographic factors and their use of deadly force and (2) to ascertain the statistical odds of civilians' demographics killed by police during a consensual, investigatory, or arrest encounter. The officer and civilian statistics were compiled in four tables utilizing the odds ratio statistics and the confidence interval percentage. The sampling method employed for this study was convenience sampling. The sample size of the officers' statistics was 1,129 data points, and 727 data points for the civilians involved. The researchers are 95% confident that using deadly force encounters in Texas supports the Odds Ratio between peace officers and civilian demographics as presented in this study. The study's summation recommends that, if needed, police departments in Texas review and objectively evaluate their practices, policies, and procedures regarding police-civilian shooting incidents and their use of deadly force.

KEYWORDS: deadly force, officer shooting demographics, excessive force, violence, police use of force, order maintenance policing, police violence, police killings, use of force policy, police shooting, police-civilian shooting

Introduction

Police use of deadly force has been a topic of importance to social justice academics even before the recent influx of national attention on this subject. The statistical data obtained from the Texas Attorney General's Office provided substantial confidence to help generate this case study. The police use of deadly force is the highest level of force used and receives the greatest attention from the media, legislators, and, in some instances, civil and criminal courts. Moreover, high-profile police shootings nationwide have raised questions about racial disparities in officers' use of deadly force, generating public concern.

This study aims to go beyond surface-level demographics such as race, gender, and age to determine the psychological factors that influence deadly force decision-making at the hand of police officers. Officers' use of deadly force on suspects depends upon the suspects' use or attempt to use deadly force. This research will add more depth to current quantitative studies on the link between officer demographics and suspect demographics by underlining the need for policy and training for police officers to

better equip them for their public duties. In addition, this research aspires to act as the foundation for training modules for police officers to objectively make decisions that will ensure their safety while bringing suspects to justice through the judicial system.

Literature Review

Race and Lethal Force

A 2021 meta-regressive study analyzed police use of deadly force deaths from 1980 until 2019. The study included: (1) both firearm and non-firearm-related deaths with suspects, (2) state and ethnicity demographics, and (3) cross-referencing of three statistical databases. The study found that the mortality rate due to police violence in non-Hispanic black people from 1980 to 2019 was projected to be 3-5 times higher compared to non-Hispanic white people (Fatal Police 2021). While the nature of this study is strictly predictive, it does expose a disproportionate amount of police use of deadly force against blacks, further propagating systemic racism in America. Also, the continuation of the use of deadly force at the hand of police officers is further highlighted by the 1% conviction rate in 2017 for officers who had committed such crimes. In addition, the study determined over the same period that the mortality rate of non-Hispanic white people was 1-8 times higher (Fatal Police 2021).

The study does have some limitations that include the further breakdown of the Hispanic race demographic. A Menifield, Shin, and Strother study determined that the proportion of Hispanics killed in relation to the population share was just over a 1:1 ratio (2018). This study contrasted the 2021 study in formulating a regression model to include variables such as population share if the victim was armed, violent crime rate, and median income by zip code. The findings of this study suggest that white officers do not kill black and Hispanic suspects at higher rates. However, the predominance of white officers is due to the overrepresentation in the police force. The findings of this in-depth study do diverge from previous literature, which indicates that black suspects were more likely to be armed than whites or Hispanics and less likely to have evidence posing an immediate public threat (DeGue, Fowler, and Calkins 2016).

More recent studies have shifted the focus of analysis to predictors of police use of deadly force during police-suspect interactions. The study determined that the most prevalent predictor of police use of deadly force is race/ethnicity. Furthermore, Mesic et al. (2018, as cited in Oramas, Terrill, and Foster 2022) found that a 10-point increase in the overall state racism index (i.e., segregation, economic disparity, employment disparity, incarceration gap, and educational attainment gap) increased the black-white disparity ratio of police shootings of unarmed civilians by 24%, with racial segregation alone increasing it by 67%. These findings dive deeper and shed light on the perpetuation of long-standing practices of systemic racism within the police force of racially segregated areas of America. Further research should explore the correlation between economic disenfranchisement, employment disparity, and educational attainment devoid of race to determine the possible economic effects on police use of deadly force.

Moreover, the study also found other predictors in police use of deadly force, which included: whether a suspect is armed or not, the number of shots fired by the officer, the lethality of the officer-involved shooting, police officers with a prior history of police misconduct, suspect history of mental illness, level of household gun ownership, and western states (Oramas et al. 2022). This study exhibits findings like a 2019 study that suggests that deadly encounters between the police and suspects increase when the suspect is armed in the encounter (Fridel, Sheppard, Zimmerman). Also, police lethal victimization is increased when the suspect is armed in the

encounter (Fridel, Sheppard, Zimmerman 2019). This study sheds light on the lack of research on police victimization in suspect encounters and whether this correlation influences the police use of deadly force.

Emotional/Psychological Responsiveness

A 2016 Finnish study sought to determine how a succinct training module would affect police officer use of deadly force decision-making. The study included 80 officers from the Federal Special Response Police Teams, with decision-making testing occurring pre-module and post-module. The officers all had previous police experience and were placed into two groups of scenarios: a drug house and a warehouse (Andersen and Gustafsberg 2016). Mann-Whitney U tests determined that officers in the training group scored statistically better than officers in the control group in both scenarios on a scale from 1 to 10. In addition, the confidence level was statistically significant between the control and the trained groups, with the trained group vocalizing that they felt more confident in their decision to shoot or not before entering the scenarios (Andersen and Gustafsberg 2016). This study exhibits the effectiveness of physiological training modules in police individual decision-making to shoot a suspect.

Furthermore, this study highlights the need for resources to be allocated to police training, focusing on prevention rather than the volatile post-interactive effects of police-suspect situational diffusion. Conversely, a British psychological study determined statistical significance between compromise between the suspect and the officer, maintaining officer safety, and knowing when to walk away between groups of officers employing these de-escalation methods and those not (Bennell et al. 2021). In addition, force mitigation and experience/education were statistically significant (Mangels, Suss, and Lande 2020). This study further emphasizes the role that experience and education play in the case-specific determination of when to use deadly force or call for backup. These findings were consistent with a Ta, Lande, and Suss study which determined that expert officers were more dominant during their experience and less emotionally aroused when compared to novice officers (2021). This displays expert officers' level of control in their interactions with suspects because they can pull from their previous situational experience. In addition, the expert officers could dominate their interaction with suspects because they were able to exude confidence from a plethora of experiential knowledge.

Police Stereotypes and Trust

Little research exists on the association between self-perception of officer stereotypes and public distrust. A (Trinkner, Kerrison, and Goff) study details the role that officers' perception of public-imposed stereotypes has on their decision to employ deadly force (2019). The study found that racial stereotypes were not as crucial a determining factor as one might think in the decision to use excessive force. On the other hand, self-legitimacy was determined to be the greatest predictor for officer justification of excessive force (Trinkner, Kerrison, and Goff 2019). This study shows that police officers sometimes usurp the authority of the force due to their self-belief in the importance of their role in society. This also shows that the need for deadly force is more subjective than one might think, and constant, consistent training can ensure less deviation from law and order.

Data and Methodology

Sampling/Characteristics of Participants

The sampling method employed for this study was convenience sampling. The sample size of the peace officer statistics was 1,129 data points and 727 data points for the suspects involved. The data was collected from the Texas Attorney General officer-involved statistics from 2020-2023 (Paxton). The officer-involved statistics included age, race/ethnicity, gender, and what the police-suspect encounter ended in (Paxton).

Presentation of Statistics

The four tables below display the odds ratio for civilian encounters with peace officers in Texas, resulting in injury or death based on officer race and civilian gender, civilian age, civilian race, and whether the civilian was armed or not. An odds ratio analysis was used for this data set to determine the outcome of a civilian encounter ending in injury or death based on civilian demographics and when they are exposed to a certain officer demographic (Ranganathan, Aggarwal, and Pramesh 2015). Table 1. displays the civilian gender odds ratio of a peace officer interaction resulting in injury or death for five race groups: Hispanic or Latino, Anglo or White, Black or African American, Asian or Pacific Islander, and Other. The confidence interval of 95% calculation is also displayed to confirm calculations. Table 2. displays the civilian age odds ratio calculations for four groups: 0-17, 18-29, 30-44, and 45-65. Table 3. displays the civilian race odds ratio calculations for the five race groups and 95% confidence interval calculations. Table 4. shows the odds of a civilian-peace officer interaction resulting in injury or death based on whether the civilian was armed or not along with a 95% confidence interval calculation.

Table 1: Civilian Gender Odds Ratio Statistics, a TAGO, 2020-2023

Civilian Gender Odds Ratio Statistics			
Variable	Officer Race	Odds Ratio of Civilian Interaction Resulting in Injury or Death	95% Confidence Interval
Civilian Gender: Male	Hispanic or Latino	0.85	(0.47, 1.54)
Civilian Gender: Male	Anglo or White	1.78	(0.97, 3.25)
Civilian Gender: Male	Black or African American	0.33	(0.15, 0.70)
Civilian Gender: Male	Asian or Pacific Islander	Undefined	N/A
Civilian Gender: Male	Other	Undefined	N/A
Civilian Gender: Female	Hispanic or Latino	1.18	(0.65, 2.15)
Civilian Gender: Female	Anglo or White	0.56	(0.31, 1.03)
Civilian Gender: Female	Black or African American	3.04	(1.42, 6.51)
Civilian Gender: Female	Asian or Pacific Islander	0	N/A
Civilian Gender: Female	Other	0	N/A

Table 2: Civilian Age Odds Ratio Statistics, a TAGO, 2020-2023

Civilian Age Odds Ratio Statistics			
Variable	Officer Race	Odds Ratio of Civilian Interaction Resulting in Injury or Death	95% Confidence Interval
Civilian Age: 0-17	Hispanic or Latino	2.19	(1.16, 4.10)
Civilian Age: 0-17	Anglo or White	0.56	(0.30, 1.06)
Civilian Age: 0-17	Black or African American	0.59	(0.14, 2.49)
Civilian Age: 0-17	Asian or Pacific Islander	0	N/A
Civilian Age: 0-17	Other	0	N/A
Civilian Age: 18-29	Hispanic or Latino	1.89	(1.49, 2.39)
Civilian Age: 18-29	Anglo or White	0.45	(0.36, 0.57)
Civilian Age: 18-29	Black or African American	1.78	(1.16, 2.73)
Civilian Age: 18-29	Asian or Pacific Islander	2.00	(0.74, 5.46)
Civilian Age: 18-29	Other	0.27	(0.03, 2.42)
Civilian Age: 30-44	Hispanic or Latino	0.82	(0.64, 1.04)
Civilian Age: 30-44	Anglo or White	0.89	(0.70, 1.12)
Civilian Age: 30-44	Black or African American	2.22	(1.34, 3.70)
Civilian Age: 30-44	Asian or Pacific Islander	Undefined	N/A
Civilian Age: 30-44	Other	2.25	(0.25, 20.22)
Civilian Age: 45-65	Hispanic or Latino	0.99	(0.76, 1.29)
Civilian Age: 45-65	Anglo or White	0.95	(0.74, 1.22)
Civilian Age: 45-65	Black or African American	1.41	(0.91, 2.20)
Civilian Age: 45-65	Asian or Pacific Islander	0.34	(0.08, 1.50)
Civilian Age: 45-65	Other	0.64	(0.07, 5.79)

Table 3: Civilian Race Odds Ratio Statistics, a TAGO, 2020-2023

Civilian Race Odds Ratio Statistics			
Variable	Officer Race	Odds Ratio of Civilian Interaction Resulting in Injury or Death	95% Confidence Interval
Civilian Race: Hispanic or Latino	Hispanic or Latino	2.74	(2.16, 3.49)
Civilian Race: Hispanic or Latino	Anglo or White	0.44	(0.35, 0.55)
Civilian Race: Hispanic or Latino	Black or African American	0.71	(0.46, 1.11)
Civilian Race: Hispanic or Latino	Asian or Pacific Islander	0.92	(0.35, 2.44)
Civilian Race: Hispanic or Latino	Other	0	N/A
Civilian Race: Anglo or White	Hispanic or Latino	0.50	(0.40, 0.64)

EATON & PHAN: Context of Police Use of Deadly Force

Civilian Race: Anglo or White	Anglo or White	1.92	(0.40, 0.64)
Civilian Race: Anglo or White	Black or African American	0.95	(0.62, 1.46)
Civilian Race: Anglo or White	Asian or Pacific Islander	0.96	(0.37, 2.54)
Civilian Race: Anglo or White	Other	0.91	(0.15, 5.49)
Civilian Race: Black or African American	Hispanic or Latino	0.67	(0.52, 0.87)
Civilian Race: Black or African American	Anglo or White	1.03	(0.81, 1.32)
Civilian Race: Black or African American	Black or African American	2.34	(1.53, 3.57)
Civilian Race: Black or African American	Asian or Pacific Islander	3.23	(1.22, 8.55)
Civilian Race: Black or African American	Other	0.55	(0.06, 4.97)
Civilian Race: Asian or Pacific Islander	Hispanic or Latino	0.41	(0.12, 1.47)
Civilian Race: Asian or Pacific Islander	Anglo or White	1.35	(0.48, 3.81)
Civilian Race: Asian or Pacific Islander	Black or African American	2.99	(0.83, 10.78)
Civilian Race: Asian or Pacific Islander	Asian or Pacific Islander	0	N/A
Civilian Race: Asian or Pacific Islander	Other	0	N/A
Civilian Race: Other	Hispanic or Latino	3.34	(0.30, 36.93)
Civilian Race: Other	Anglo or White	0.45	(0.04, 4.94)
Civilian Race: Other	Black or African American	0	N/A
Civilian Race: Other	Asian or Pacific Islander	0	N/A
Civilian Race: Other	Other	0	N/A

Table 4: Civilian Armed Odds Ratio Statistics, a TAGO, 2020-2023

Civilian Armed Odds Ratio Statistics			
Variable	Officer Race	Odds Ratio of Civilian Interaction Resulting in Injury or Death	95% Confidence Interval
Civilian Armed	Hispanic or Latino	1.23	(0.83, 1.82)
Civilian Armed	Anglo or White	1.24	(0.85, 1.80)
Civilian Armed	Black or African American	0.36	(0.21, 0.60)
Civilian Armed	Asian or Pacific Islander	0.85	(0.19, 3.76)
Civilian Armed	Other	Undefined	N/A

Note. Texas Attorney General’s Office (2020-2023; TAGO)

Results/Discussion

Table 1 provides odds ratios (OR) and 95% confidence intervals from odds ratio logistic calculations. In terms of gender statistics, there were 704 males and 23 females. The highest odds ratio calculated based on civilian gender was a female civilian who encountered a Black or African American officer with an odds ratio of 3.04. On the other hand, the lowest odds ratio calculated was a male civilian who encountered a Black or African American officer with an odds ratio of 0.33. The encounter between the male civilian and the Asian and Other officer was undefined because the unexposed group (female gender) had zero encounters with these two race groups. Furthermore, the odds ratio of 0 was calculated for the odds of a female civilian encountering Asian or Other race officers because there were no encounters recorded for this gender/race combination between 2020-2023 in the State of Texas. Other significant gender-race encounters were between male civilians and Anglo or White officers (OR: 1.78) and female civilians and Hispanic or Latino officers (OR: 1.18).

Table 2 provides OR and 95% confidence intervals from odd ratio logistic calculations. ORs greater than one represents the positive association, while ORs less than one represent the negative association. The most positive association occurred between civilians aged 30-44 and other race peace officers, with an OR of 2.25. Conversely, the lowest OR calculated was for civilians aged 18-29 and other race peace officers, with an OR of 0.27. ORs of 0 were calculated for the interaction between civilians aged 0-17 and Asian and Other race peace officers. The OR was undefined for civilians aged 30-44 because of the absence of incidences between the unexposed civilian groups and the peace officers. Other significant age-race encounters were between ages 0-17 civilians and Hispanic or Latino officers with an OR of 2.19. Also significant were the encounter between civilians aged 18-29 and officers of Hispanic or Latino (OR:1.89), Black or African American (OR: 1.78, and Asian or Pacific Islander race (OR:2.00). Additionally, significant groups were civilians aged 30-44 and Black or African American officers (OR: 2.22). The last significant group was the encounter between civilians aged 45-65 and peace officers of Black or African American descent (1.41).

Table 3 lists OR and 95% confidence intervals from odds ratio logistic calculations for both civilian gender and peace officer gender. The highest odds ratio calculated was 3.34 for other race civilians encountering Hispanic or Latino officers. The lowest OR calculation was calculated to be 0.41 for the encounter between the Asian or Pacific Islander civilian and the Hispanic or Latino peace officer. Six race-race combinations were calculated at 0 OR: Hispanic or Latino-Other, Asian or Pacific Islander-Asian or Pacific Islander, Asian or Pacific Islander-Other, Other-Black or African American, Other-Asian or Pacific Islander, Other-Other. The Hispanic or Latino civilian group was also calculated to have a significant relationship with the Hispanic or Latino peace officer group, with an OR of 2.74. The Anglo or White civilian group was calculated to have a significant relationship between the Anglo or White peace officer group with an OR of 1.92. The Black or African American civilian group was calculated to have a significant relationship between three officer race groups: Black or Anglo or White (OR: 1.03), African American (OR: 2.34), and Asian or Pacific Islander (OR: 3.23). Lastly, the Asian or Pacific Islander civilian demographic was determined to have a strong relationship between the Anglo or White (OR: 1.35) and Black or African American (OR: 2.99) peace officer race groups.

Table 4 lists OR and 95% confidence intervals from odds ratio logistic calculations for armed civilians and peace officer race demographics. A civilian armed in a peace officer encounter they have the highest odds (1.24) of the encounter resulting in injury or death when encountering an Anglo or White peace officer. While on the

other hand, they have the lowest odds (0.36) of the encounter resulting in injury or death when encountering a Black or African American peace officer. The encounter between an armed civilian and a Hispanic or Latino peace officer was also significant, with an OR of 1.23.

Conclusion and Future Scope

The researchers are 95% confident that using deadly force encounters in Texas supports the Odds Ratio between peace officers and civilian demographics as presented in this research. This research offers an analysis of the role of officer race in civilian interactions that result in death or injury to the officer or the civilian. The results show that race categorization is a signifier that adds another component to the environment in which peace officers in Texas must make split-second decisions. This analysis underlines the intersection between civilian gender, age, race, and armed statistics and the effect peace officer race has on the social construct of possible racism presented by the left-wing media (Shrikant and Sambaraju 2021). On the other hand, this research provides a thorough empirical-based analysis using the facts. This study's findings fill the research gap, focusing on officer gender and training level statistics, but not the intersection between officer race and key civilian demographics (Mangels, Suss, and Lande 2020).

In Table 1 the researcher exhibits the odds of a male or female civilian encounter with police resulting in injury or death. Male civilians were determined to have the highest odds of injury or death when encountering a white officer. These findings call for further research in the field of thought to determine what psychological impact civilian gender has on the officers' reactions. In addition, a greater sample size of civilians and peace officers should be used in the research to clarify odds ratio statistics. On the other hand, male civilians were determined to have lower odds of a police encounter ending in injury or death when encountering a Black or African American peace officer. These interesting findings show that Anglo or White officers may see male civilians as more of a threat than Black or African American officers. This may be due to the social climate of today in which Black or African American officers are more hesitant to engage in excessive force due to police brutality incidents against their race—table 3. It also presents interesting findings that show higher odds of injury or death for a civilian with officers from their racial background except for Black or African American and Asian or Pacific Islander. Future research should focus on psychology's role in-officers' minds and how they view race as a determining factor in using deadly force.

Table 4 shows that Anglo or White officers were determined to have to highest odds of injuring or killing an armed suspect, which may tell the signs of a hypersensitive reaction by Anglo or White peace officers or, on the other hand, better training. These statistics may offer a preliminary racial explanation as to civilian encounters resulting in injury or death; whether institutional or unconnected to racism, future research must explore the role race and gender have in police use of deadly force. Research on the effect of training on police use of deadly force in Texas with the component of officer demographics is a study that future researchers should explore. A Northwestern University study showed that training reduces complaints against police and negative sentiments toward them (Wood, Tyler, and Papachristos 2020). In addition, this research was also limited because the researcher did not explore the correlation or causation between officer experience and the police use of deadly force. Based on previous research, experience in the police force has allowed expert officers to employ de-escalation techniques, while novices do not do so (Mangels, Suss, and Lande

2020). The findings in Table 3 were supported by a Trinker, Kerrison, and Goff study on police officer self-legitimacy which determined that officers within their communities face the most racial stereotypes compared to other racial groups outside their communities (2019).

In Table 3, the odds for three racial groups were the highest within their racial community, suggesting negative racial perception or possible self-hatred within a specific racial community. Table 3 also shows the highest odds of civilian injury or death with all officer races amongst the Black or African American civilian group. These findings are consistent with a 2019 study that chronicled police use of deadly force from 1980-2019. The study found that Blacks were 3-5 times more likely to experience death at the hands of police when compared to White, Hispanic, and Indigenous peoples (Fatal Police 2021). Future research must explore the limitations of this study as to the psychological reason police officers choose to target Black or African American civilians. Interesting findings from a Menifield, Shin, and Strother study found that disproportionate use of police use of deadly force is a police officer problem and not a “White” police officer problem (2018). These findings suggest that improper police use of deadly force against Blacks or African Americans results from a fractured institution. These findings align with our findings from Table 3 because Blacks or African Americans did experience police use of deadly force at a higher rate than any other civilian race group.

This study presents an odd ratio analysis of police use of deadly force amongst civilians in Texas from 2020 to 2023. Still, the limitations of this study must be further discussed. Firstly, this study did not extrapolate data that reveals the rate at which specific civilian groups commit the crime. The findings of the disproportionate use of deadly force against Blacks or African Americans are one-sided in that this study did not use data that would reveal the rate at which Blacks or African Americans committed crimes compared to other civilian race groups. In addition, this study used a relatively small sample size for both the peace officer and civilian analysis. Furthermore, the results of the odds ratio calculations would be bolstered by a larger sample size. In summation, this research does advance the literature on-police use of deadly force by adding the officer demographic component to the research to challenge normative policies and biases in the policing of civilians in Texas.

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