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Analyzing Police Deadly Use of Force: A Statistical Case Study on Officer-Involved Shooting in California

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Abstract: This statistical case study described factors contributing to officers' controversies in using deadly force. The use of force is justified to preserve human life. Officers may use deadly force only that is objectively reasonable to effectively gain control of an incident while protecting the safety of the officer and others. This case study examines police officers' use of deadly force in California. It provides findings from an analysis and systematic review of the police use of deadly force statistics between 2018-2023. The study aims to investigate the number of incidents in California and compile police-civilian deadly force encounters. The data were collected from the California Attorney General's Office, the Los Angeles County District Attorney's Office, and the California Police Scorecard. The investigators attempt to identify the impact factors, how departments and officers can minimize the liability placed on them, and the risk to the officer's safety during a violent encounter. The study recommends that states not limit access to their existing deadly force databases and their implications for use-of-force research. Transparency would provide a better understanding of the number of times officers discharge their firearms and minimize the impact of other limitations that characterize current deadly force databases.

Keywords: police use of force, lethal force, officer shooting, deadly force, police shootings, demographics, excessive force, violence, order maintenance policing, police use of violence, police killings, use of force, police-civilian shooting, police-related shootings, emotional intelligence

Introduction

The use of deadly force by police officers remains one of the most debated and pressing topics in contemporary culture, particularly in the United States. California, with its diverse population and one of the most powerful police forces in the nation, becomes an important focus for examining the nature of officer-involved shootings. This study aims to provide a statistical analysis of officer-involved shootings in California and specifically address how race, lethal force, and emotional and psychological factors impact officers and civilians. Racism has always been central to discussions about policing, often in the context of uncovering institutional injustice and policing bias.

Analyzing the racial profile of officer-involved shootings may reveal trends that indicate an unequal distribution of lethal force across communities. Beyond race, officers' and civilians' emotional and psychological responses during these life-changing moments play a crucial role in determining outcomes. Stress, fear, and split-second decision-making often dictate whether situations escalate to the use of deadly force.

Psychological processes such as implicit bias, threat perception, and emotional regulation may contribute to these outcomes.

This case study integrates statistical patterns with emotional and psychological aspects to present a holistic view of officer-involved shootings in California. By providing data-driven insights, the study seeks to inform efforts that promote accountability, fairness, and safer relationships between law enforcement and the communities they serve.

Literature Review

Analyzing the Use of Deadly Force and Race

Police officers have a moral and legal obligation to enforce laws and protect communities. In some situations, officers must use deadly force by discharging their firearms. Officer-involved shootings (OIS) occur under a variety of circumstances and often involve what Fyfe (1989) refers to as "split-second syndrome," meaning that officers frequently make deadly force decisions within seconds and based on limited information. While police use of force is not a new phenomenon, OIS and officer accuracy remain critical topics in contemporary policing, contributing to two ongoing national conversations. The first centers on what some scholars describe as the "legitimacy crisis" in policing (Cook, 2015). With the near-universal presence of cell phone cameras, police officers' actions are under constant scrutiny. High-profile cases of questionable OIS, such as those involving Breonna Taylor and Jordan Edwards, along with numerous instances of misconduct, have raised serious concerns regarding the legitimacy of policing practices.

Although the use of deadly force is a crucial aspect of an officer's job, it can have devastating consequences, particularly when it is unwarranted. Once a bullet is fired, it cannot be taken back: "When police officers fire their guns, the immediate consequences of their decisions are realized at a rate of 750 feet per second and are beyond reversal by any level of official review" (Fyfe, 1988, p. 165). This reality underscores the necessity of extensive firearms training for officers, particularly recruits (Walker & Katz, 2013). Society expects officers to be both accurate and accountable for every round they fire. Therefore, studying the factors that influence shooting accuracy can enhance understanding and contribute to more effective policies and training programs to improve officer performance in deadly force situations.

Recent studies have shifted analytical focus toward the predictors of police use of deadly force during police-suspect interactions, with race and ethnicity emerging as the most significant predictors. Mesic et al. (2018, as cited in Oramas, Terrill, & 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 the disparity by 67%. These findings highlight how systemic racism in policing is perpetuated, particularly in racially segregated areas of the United States. Further research should examine the correlation between economic disenfranchisement, employment disparity, and educational attainment—independent of race—to determine the potential economic effects on police use of deadly force.

Contrary to the assumption that racial bias always leads to increased use of deadly force against Black civilians, some studies suggest otherwise. Research indicates that police officers are actually less likely to shoot unarmed or armed Black civilians than White civilians (Fryer, 2016; James et al., 2013; James et al., 2016; Wheeler et al., 2018; Worrall et al., 2018). For example, using OIS data from the Dallas Police

Department (2003–2016), Wheeler et al. (2018) found that Black civilians were 45% less likely to be shot than similarly situated White civilians. Additionally, studies have shown that officers take significantly more time (0.20–1.34 seconds) to shoot armed Black civilians than armed White civilians in video simulations of "shoot-don't-shoot" decision-making scenarios (James et al., 2013; James et al., 2016). Furthermore, Johnson et al. (2018) found that providing officers with civilian race information during a simulation experiment reduced racial biases in decisions to shoot.

Authorization of Deadly Force

Under the Constitution, police officers are legally permitted to use lethal force under two circumstances: when they have probable cause to believe a suspect poses an imminent threat of serious bodily harm and when a dangerous suspect of a crime involving the infliction of serious physical injury is attempting to flee. In *Tennessee v. Garner* (1985), the Supreme Court held that the Fourth Amendment prohibits the use of deadly force against a non-violent, unarmed fleeing felon. However, the Court noted that if the suspect is threatening the officer or if there is probable cause to believe the suspect committed a violent crime, the use of deadly force may be justifiable to effect an arrest or prevent the suspect from escaping.

A significant challenge in researching officer-involved shootings is the lack of high-quality data on these incidents (Alpert, 2016; Klinger, 2012a, 2012b). Depending on the nature and scope of this study, prior research utilized a variety of data sources, including web-based, crowd-sourced databases, national-level datasets, and official law enforcement records. This study identifies police use of lethal force using official records from law enforcement agencies, specifically the California Department of Justice (CDOJ) and the FBI's Supplementary Homicide Reports (SHR). The inclusion of national-level data helps mitigate sample bias and provides the large-scale sample sizes necessary for multilevel analysis, which is particularly important given that officer-involved deaths are relatively rare events.

The SHR is currently the only data source that provides key demographic information about both officers and civilians involved in fatal encounters. In contrast, the crowd-sourced Fatal Encounters database does not report officer characteristics and has high levels of missing data for civilian race in earlier years. However, research indicates that SHR data is highly correlated with survey data from large cities ($r > 0.95$), making it a reliable source for understanding patterns in officer-involved shootings (Loftin et al., 2003; Sherman & Cohn, 1986).

Emotional/Psychological Responsiveness

The ability of police officers to regulate their emotions and maintain psychological resilience plays a crucial role in their decision-making processes during high-stress situations, which may lead to deadly outcomes. According to Chauhan and Joshi (2013), constables with higher emotional intelligence (EI) demonstrate better psychological well-being, allowing them to manage stress effectively and resolve conflicts through emotional regulation. However, head constables show a weaker correlation between EI and job performance, suggesting that experience and job responsibilities influence how emotional intelligence is applied in policing. A lack of emotional control heightens stress responses, impairs decision-making abilities, and increases the likelihood of officers using excessive or lethal force.

Singer (2024) emphasizes that stress-resiliency training helps law enforcement officers maintain emotional control, whereas those without such training are more likely

to react impulsively and resort to coercive tactics. Stress-resiliency programs enhance officers' ability to navigate high-pressure situations while maintaining composure and making sound decisions. Incorporating EI and psychological resilience training into law enforcement education could equip agencies and officers with effective coping strategies, reducing impulsive behaviors and fostering stronger community relationships. By prioritizing officers' emotional and psychological well-being, law enforcement agencies can mitigate the risk of excessive force and promote fair, effective policing.

Police Perception and Trust

Research conducted by Najdowski, Bottoms, and Goff (2015) and Trinkner, Kerrison, and Goff (2019) reveals vital information about the impact of stereotype threat during police interactions and its contribution to the use of force, including deadly force. Najdowski et al. The research by Najdowski et al. (2015) shows that Black individuals, especially Black men, expect the police to mistreat them because of societal stereotypes that connect Blackness with criminal behavior. The stereotype threat results in heightened anxiety and behavioral shifts, which officers may misread as suspicious behavior, which can escalate interactions to deadly force. Similarly, Trinkner et al.

Research by Trinkner et al. (2019) shows that police officers who recognize the "racist cop" stereotype confront stereotype threat, which damages their self-legitimacy and drives them to use more coercive force. When officers perceive their authority being questioned, they may react with increased aggression, increasing the chance of employing excessive or deadly force. The research demonstrates that ingrained biases and fears present in police and citizen interactions lead to heightened risks of violence and fatal outcomes between both parties.

Data and Methodology

Sampling/Demographic

Researchers investigated fatal police encounter deaths among civilians by studying demographic variables, including race and age, along with information about whether individuals possessed weapons. Official law enforcement reports combined with civilian complaints provide a balanced data representation. The analysis provides essential information for policy discussions to decrease unnecessary deadly force and enhance law enforcement accountability.

Presentation of Statistics

This study’s statistical analysis forms the basis for examining patterns and disparities as well as trends in officer-involved shootings across California. Data visualizations integrated into this research provide an objective depiction of deadly force incidents, clearly demonstrating their extent and effects. This section demonstrates the connection between the presented statistics and the research goals while enabling discussions surrounding law enforcement methods and accountability reforms.

The collected data reveals patterns in deadly force usage frequency alongside racial demographics of affected persons and force deployment circumstances with temporal trends. The study analyzes statistics to identify factors leading to deadly force usage while exploring potential policy changes and training modifications to reduce unnecessary deaths.

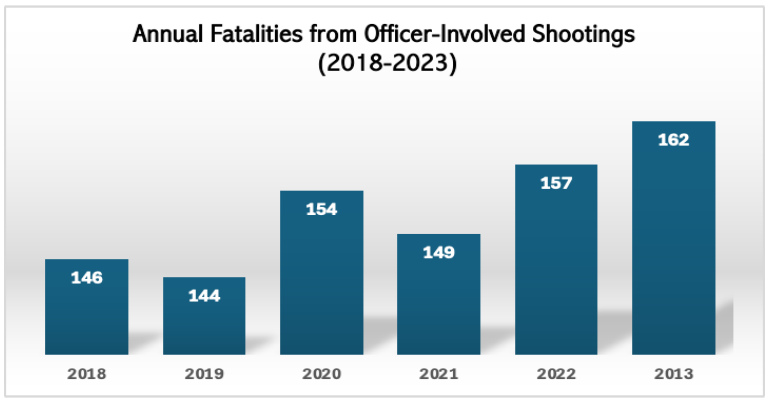

Figure 1. Annual Fatalities from Officer-Involved Shootings

Source: California Department of Justice, Use of Force Incident Reports (2018-2023

Notes: A bar graph will effectively illustrate the yearly trend of fatalities from officer-involved shootings, showing increases or decreases over time.

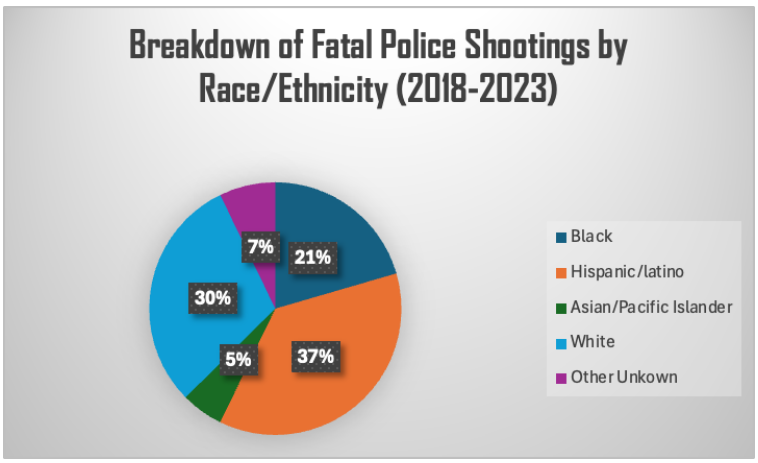

Figure 2. Fatal Police Shootings by Race/Ethnicity

Source: California Police Scorecard (2023)

Notes: A pie chart visually represents the racial/ethnic disparities in fatal police shootings, showing proportions of each group.

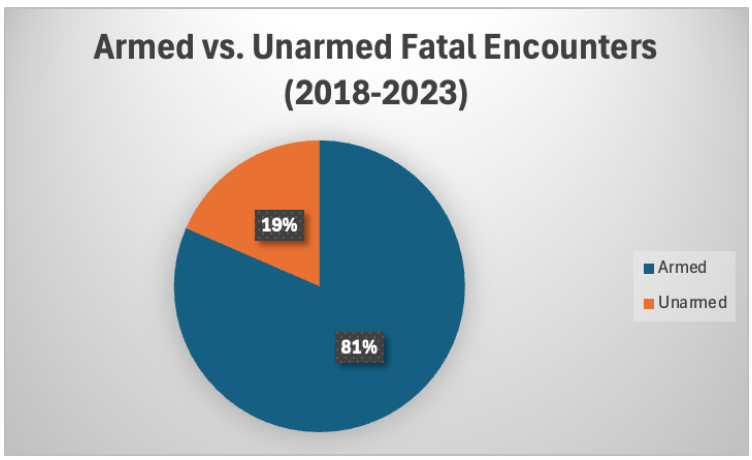

Figure 3. Armed vs. Unarmed Fatal Encounters

Source: California Department of Justice, Officer-Involved Shooting Reports (2023)

Notes: A pie chart can emphasize the proportion of armed vs. unarmed fatalities, while a bar graph allows for clearer numerical comparison.

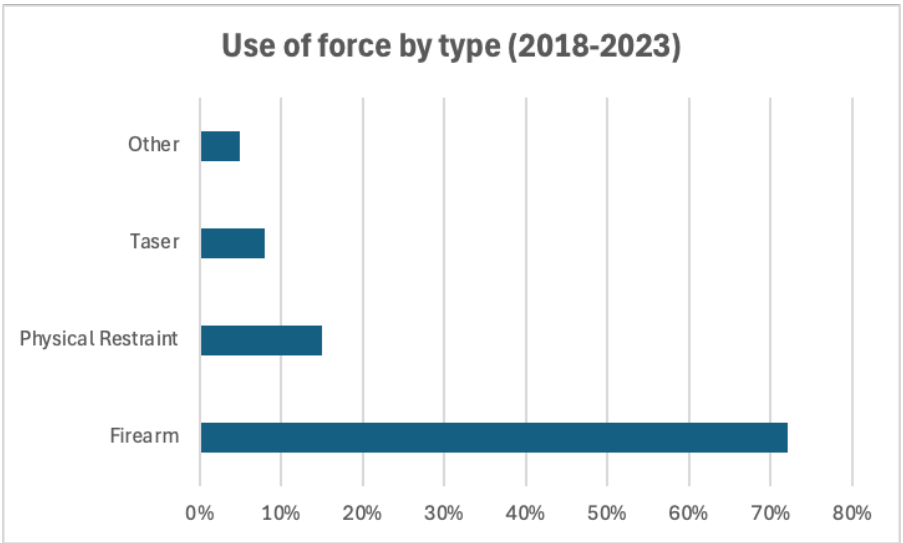

Figure 4. Use of Force Type

Source: California DOJ Use of Force Reports (2018-2023)

Notes: A bar graph will show the distribution of force types used, emphasizing the dominance of firearms over other methods.

Table 1. Fatal Officer-Involved Shootings (2018-2024)

Fatal Officer-Involved Shootings (2018-2024)	2018	2019	2020	2021	2022	2023	2024
Number of Fatalities (2018-2024)	49	26	39	22	46	43	50

Source: Los Angeles Couty District Attorney's Office (2025)

Notes: A sample table visually showing just the number of officer-involved shootings in Los Angeles County.

Figures in Table 1 show that between 2018 and 2024, there were 249 fatal officer-involved shootings in Los Angeles County. The total number averages 35 fatal officer-involved shootings per year.

Methodology/Results/Discussion

This case study utilizes a quantitative statistical case study approach to analyze shooting patterns, disparities, and root causes in officer-involved incidents in California from 2018 to 2023. This case study examines how demographic characteristics, psychological responsiveness, and institutional practice influence fatal interactions between police officers and civilians. The investigators utilized official and publicly available data sources, including the California Department of Justice's Use of Force Incident Reports, Officer-Involved Shooting Reports, and the California Police Scorecard. The collected datasets contain comprehensive details on civilians and officers involved in use-of-force incidents, including their race, age, gender, and whether civilians were armed while specifying the type of force applied. The case study maintains statistical analysis integrity and credibility by using government-verified reports, vital for research in an area plagued by public distrust and debate.

The research methodology uses descriptive statistics to create visual representations of fatal encounter data through bar graphs for annual fatality counts, pie charts showing racial and ethnic disparities, and diagrams illustrating whether victims

were armed or unarmed. The visual aids reveal trends and make the data more accessible to policymakers and community stakeholders. The investigators use inferential statistical tools, including odds ratio analysis, to evaluate how officer and civilian demographics impact the probability of lethal encounters. The research compares civilian mortality rates based on the racial background of officers they encounter and examines correlations between officer training and experience with the application of deadly force. The research results validate the hypothesis by showing that race and perceived threat, along with emotional intelligence, heavily affect officers' lethal force decisions.

The data set contains every recorded police-civilian interaction in California that led to deadly force being used between 2017-2022. This includes both fatal and non-fatal outcomes. The civilian data were broken down based on age groups, racial categories, gender distinctions, and armed status. The available officer-related data encompassed information about race, gender, and departmental training levels. A thorough analysis of social identity and perceived threat in stressful law enforcement situations becomes possible through these collected data points. The study analyzes deadly encounters by combining officer and civilian factors, which highlights the intricate nature of these incidents and disputes simple explanations that focus only on civilian actions or systemic racism.

This case study also examines emotional and psychological aspects through existing research on emotional intelligence and decision-making processes under stressful conditions. The studies by Chauhan & Joshi (2013) and Singer (2024) demonstrate that law enforcement officers with more significant emotional intelligence show improved management of stressful situations, which helps lessen the chances of fatal incidents. Psychological responsiveness serves as a contextual element for understanding statistical patterns in data interpretation. Even though direct psychological state data for officers was unavailable, the study gained interpretive depth by applying prior experimental and theoretical research findings to the statistical correlations that were found.

The case study recognizes multiple limitations despite working with substantial datasets. Not all agencies provide consistent reporting on use-of-force incidents, leading to incomplete data on crime rates across civilian demographics, which restricts analysis of racial disparities. The sample size is comprehensive within California but requires attention to regional policing methods and sociopolitical contexts to apply findings to other states. Nonetheless, this research establishes an evidence-based framework that supports public discussions and policy adjustments while enhancing training methods to minimize police violence and strengthen public trust.

Conclusion and Future Scope

A comprehensive statistical investigation into California's officer-involved shootings from 2018 to 2023 exposes a complicated and distressing depiction of today's law enforcement practices. Marginalized communities experience disproportionate use-of-force events, especially those involving firearms, as Black and Latino individuals show higher rates in both fatal and non-fatal police encounters. The fact that numerous civilians found themselves unarmed during these encounters prompts serious inquiries into law enforcement threat assessments and their use of deadly force. Public databases like the California Police Scorecard (2023) reveal deep-rooted problems within police systems and show the critical need for reform. The alignment of these findings with national data from the California DOJ and FBI confirms that this issue extends beyond California and constitutes a nationwide crisis requiring dedicated and continuous attention.

The study reveals that psychological and emotional preparedness is crucial in shaping outcomes of police-civilian interaction. Officers regularly function in environments that demand quick decision-making because they face high-stress and high-stakes situations. Managing one's emotions while understanding others and staying calm proves essential for emotional intelligence (EI) during critical situations. Police officers who demonstrate higher emotional intelligence achieve better outcomes when resolving conflicts and making decisions under stress while displaying less aggression during encounters, according to research by Chauhan & Joshi (2013) and Singer (2024). Current research demonstrates that officers who can regulate emotions interpret civilian behavior more effectively during tense situations (Szczygiel & Mikolajczak, 2022). Traditional police training has historically emphasized physical tactics and legal procedures while neglecting psychological skill-building, which limits officers' ability to de-escalate volatile situations without using force.

Law enforcement agencies need to shift towards a more comprehensive training model for officer development in the future. Initial academy training and continuing education must integrate emotional intelligence training, stress-resiliency programs, and implicit bias workshops as standard components. These programs have proven effective in decreasing misconduct, enhancing community relations, and reducing deadly force incidents (Police Chief Magazine, 2023; Police1, 2023). Recruitment strategies must change to enable better evaluation of emotional and psychological readiness, so recruits meet both physical and emotional requirements for contemporary policework.

Recommendations

The progress of police reform depends heavily on both the presence and excellence of accessible data. Research and accountability require thorough, open, and itemized data on force incidents that include information about the officers involved, civilians, and surrounding circumstances. The study gained from strong data sources provided by the California Department of Justice and the Police Scorecard, yet faces substantial challenges for national policy evaluation due to inconsistent reporting methods. The FBI's National Use-of-Force Data Collection project advances standardization and transparency yet needs broader implementation and strict enforcement (FBI, 2019).

Research in the future needs to examine how race, gender, age, and officer experience intersect within deadly force situations. The investigation should focus on the influence of officers' racial identity on their decisions while also studying the effects of community demographics on officer actions and the potential mediating function of departmental culture and leadership regarding force application. Researchers can utilize longitudinal studies to determine the lasting effects of interventions, including emotional intelligence training and changes to departmental policies, on behavioral outcomes. Studies should include qualitative research through officer and civilian interviews to understand statistical patterns through human experiences and viewpoints.

Technology combined with oversight tools presents a new frontier for research exploration. New surveillance tools, such as body-worn cameras combined with automated systems and AI analytics, enable better monitoring of police conduct and help detect early misconduct indications while revealing unnoticed behavioral patterns. Combining advanced tools with strong training programs and community outreach could shift policing towards proactive prevention rather than reactive responses.

Building community trust should be the core objective of all reform initiatives. Neighborhood-focused policing models that involve officers building ties with their communities beyond enforcement duties demonstrate crime reduction and stronger community relations (Tyler & Jackson, 2014). When departments include community

members in developing policies and oversight procedures while providing training, they prove their dedication to transparency and justice in public safety responsibilities.

The case study demonstrates robust evidence that police use of deadly force depends on structural conditions, including race and training, as well as individual psychological attributes, such as emotional intelligence. While the data confirm the existence of disparities, they also point to tangible solutions: The data suggests that effective solutions include advanced training programs and better data collection methods while increasing transparency and establishing more substantial connections with the community. Police departments can advance towards a policing model that protects all community members by developing officers' emotional intelligence, ethical understanding, and analytical abilities.

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