**Exploring the Relationship Between Police Stops and Crime in San Diego: A Microgeographic Analysis of Demographic Factors and Policing Strategies**

**Abstract –** This study investigates the relationship between police stops and crime in San Diego at a microgeographic level, taking into consideration regional variations and demographic factors. By analyzing crime patterns and outcomes within the city's diverse police beats, the research aims to provide valuable insights into the efficiency and consequences of police stops, ultimately informing evidence-based recommendations for refining and improving policing strategies. Building on existing literature and a recent news article highlighting disparities in police stops in San Diego, our study quantifies the relationship between the number of stops and the number of crimes, with a focus on variables such as race and gender. This localized analysis offers a unique perspective on the impact of police practices on different communities and supports the development of more equitable policing strategies. In summary, our study complements and extends the existing literature, providing valuable insights and evidence-based recommendations for San Diego and other similar urban areas. [Insert findings here.]

*Keywords*: *Police stops, crime rates, Microgeographic analysis, Racial disparities*

**Introduction**

In recent years, the effectiveness and implications of police stops have been at the center of public debate and academic inquiry. This study aims to contribute to the ongoing discourse by examining the relationship between police stops and crime in San Diego at a microgeographic level. By focusing on regional variations, demographic factors, and community impact, we seek to provide valuable insights into the efficiency and consequences of police stops within the city's diverse police beats. Through a comprehensive analysis of crime patterns and outcomes, our research aims to inform evidence-based recommendations for refining and improving policing strategies in San Diego and other similar urban areas, ultimately fostering more equitable and effective law enforcement practices.

In examining the relationship between police stops and crime, it is important to consider the existing literature on this subject. Miller et al. (2000) found that while stops and searches play some role in fighting crime and lead to about one-tenth of arrests nationally, they have only a small impact on the detection and prevention of recorded or reported crime[[1]](#endnote-2). Additionally, searches tend to have a negative impact on public confidence in the police, often due to perceived impoliteness and inadequate explanations for stopping individuals. The authors recommend focusing on the efficient and targeted use of searches based on intelligence and high levels of suspicion while emphasizing more serious crimes and prolific offenders.

MacDonald et al. (2016)[[2]](#endnote-3) investigated the effects of the New York Police Department's (NYPD) Operation Impact, which deployed extra police officers to high-crime areas. The authors found that impact zones were associated with significant reductions in reported crimes and increases in reported arrests. However, they also noted that the majority of investigative stops did not play an important role in crime reduction, suggesting that more focused investigative stops could be more effective.

Weisburd et al. (2015)[[3]](#endnote-4) explored the impact of stop, question, and frisks (SQFs) on crime in New York City at a microgeographic level. They found that SQFs produce a significant yet modest deterrent effect on crime but questioned whether other policing strategies might yield similar or stronger crime-control outcomes. They also noted that the level of SQFs needed to achieve meaningful crime reductions can be costly and potentially harmful to police legitimacy.

Petersen et al. (2023)[[4]](#endnote-5) conducted a systematic review and meta-analysis on the effects of police-initiated pedestrian stops on crime and individual-level outcomes. Their findings indicated that pedestrian stop interventions were associated with a statistically significant reduction in crime for treatment areas relative to control areas. However, they also found that such interventions led to a broad range of negative individual-level effects, such as increased odds of mental and physical health issues, more negative attitudes toward the police, and higher levels of self-reported crime and delinquency. The authors concluded that, although pedestrian stop interventions have favorable effects on place-based crime and displacement outcomes, the negative individual-level effects make it difficult to recommend their use over alternative policing interventions.

A recent news article by Moran, Winkley, and Schroeder (2022)[[5]](#endnote-6) provides additional context for our study, highlighting disparities in police stops within San Diego. Their analysis revealed that police in San Diego conduct more traffic and pedestrian stops per reported crime in areas where non-Whites make up the majority of the population. While police officials attribute the disparity in enforcement to factors other than racial bias, the analysis suggests that some communities experience a level of enforcement that cannot simply be explained by crime rates. However, the article does not quantify or measure the relationship between stops and crimes, nor does it directly answer the question, "Are stops happening where crime is happening?" Instead, the authors primarily rely on descriptive statistics.

Building upon the previous literature and the findings of Moran et al. (2022), our study aims to fill this gap by quantifying the relationship between the number of stops and the number of crimes within San Diego's police beats. This localized focus allows us to compare different areas with varying levels of crime and stops, providing insights that can be used to improve policing strategies. Furthermore, our research will assess the efficiency of police stops in San Diego and explore how well they align with crime levels across different police beats. Focusing on demographic factors, our study will investigate the role of variables such as race and gender in the relationship between police stops and crime in San Diego. By examining how these factors may influence the patterns and outcomes of stops, we aim to contribute to a deeper understanding of the impact of police practices on different communities and support the development of more equitable policing strategies. In summary, our study on the relationship between police stops and crime in San Diego will complement and extend the existing literature, offering valuable insights that contribute to a deeper understanding of this relationship and providing evidence-based recommendations for refining and improving policing strategies in San Diego and other similar cities.

**Data Set Used**

The data used in this project spans multiple years (2019-2021) and is derived from various sources. The primary datasets used in the analysis are the stop data files, which include information on stops conducted by SDPD for the years 2019, 2020, and 2021. These files provide comprehensive data on each stop, such as the location, demographics of the person stopped, the reason for the stop, and other relevant details. The stop data is collected under the Racial and Identity Profiling Act of 2015 (RIPA), which requires nearly all California law enforcement agencies to submit demographic data on all detentions and searches. This data is publicly available and can be downloaded from the City of San Diego's data portal: https://data.sandiego.gov/datasets/police-ripa-stops/. By combining these files, a complete picture of police stops over the three years can be obtained.

To gain insights into the spatial distribution of police stops, shapefiles for SDPD beats are used. These files contain the geographic boundaries of police beats, which are essential for visualizing and understanding the spatial patterns of stops and crimes in San Diego. Additionally, population data for each beat is incorporated into the analysis. This data is sourced from the U.S. Census Bureau's American Community Survey (ACS) for 2019, which provides demographic information, including the racial composition of residents within each beat. By including this data, potential racial biases in police stops can be identified and examined.

Finally, a dataset containing all crimes reported to the SDPD between 2019 and 2021 is utilized. This data was obtained under the California Public Records Act (PRA) by the San Diego Union-Tribune and is essential for understanding the relationship between police stops and crime incidents in San Diego. By merging this dataset with the stop data and beat demographics, a comprehensive analysis of the spatial and demographic aspects of police stops can be conducted.

**Exploring the Data**

[]

**Methodology and Findings**

Table

Description automatically generatedWe began our analysis by running two regression models. The first model examined the relationship between the number of stops and the number of crimes (stops ~ crimes), while the second model included an additional variable, percent\_non\_white, to account for the proportion of non-white individuals in the area as a proxy for race. The results showed that the coefficient for crimes remained relatively stable across both models, and the percent\_non\_white coefficient was not significant (figure xx). These findings suggest that the number of crimes is a consistent predictor of the number of stops, and the proportion of non-white individuals in an area does not significantly affect the number of stops when controlling for the number of crimes. It is important to consider that these results might not capture the full extent of potential relationships between racial and ethnic composition and policing patterns, as the percent\_non\_white variable may not adequately represent the diversity and complexity of racial and ethnic distribution in the area. With this in mind, we proceeded to further study the effects of segregation on the number of stops using the location quotient (LQ) of each racial group as a measure of their concentrations across the different beats. The location quotient (LQ) is a widely used geographic index that measures and maps relative distributions or concentrations of a specific characteristic in a subarea compared to the entire area. The concept was first introduced by Walter Isard (1960)[[6]](#endnote-7) in his book "Methods of Regional Analysis: An Introduction to Regional Science." It has been extensively applied in various fields, including regional economic studies and residential segregation analysis (Benassi et al., 2022)[[7]](#endnote-8). In general, a higher value of LQ for a given A picture containing text, screenshot, flower, vector graphics

Description automatically generatedracial group, means a higher concentration of that group (figure xx).

Figure 1 Basic Regression Results

Figure 2 Location Quotient of Racial Groups

Using the calculated LQs, we ran a third regression model but found no statistical significance (figure xx). This, however, doesn’t necessarily mean that discrimination isn’t present. It could mean that there are instances of discrimination in the tails of the distribution of concentrations of these ethnic groups that aren’t captured by our regression models. To examine this, we investigated the relationship between the LQ of various racial and ethnic groups and the average percent difference in the actual number of police stops compared to the predicted number of stops based on the number of crimes (using the first regression). We specifically focused on the beats within the 75th percentile of each LQ variable, which represents areas with a higher concentration of the respective racial or ethnic group.

Our findings revealed that all racial and ethnic groups, except for black, had negatively weighted averages for the percent difference in police stops. This means that in areas with higher concentrations of white, AIAN, Asian, NHOPI, Hispanic, and other groups, the observed number of police stops was lower than the predicted number based on the number of crimes. However, in areas with a higher concentration of black individuals, the observed number of police stops was higher than the predicted number (figure xx).

Chart, waterfall chart

Description automatically generated

Figure 3 Weighted Average Actual vs. Expected Stops Percent Difference for Beats within the 75th Percentile of LQ Variables

[]

**Conclusion and Future Work**

Chart

Description automatically generated[]

**References**

[]

Visualizations to add in:

Map

Description automatically generated

Map

Description automatically generated with medium confidenceCalendar

Description automatically generated with medium confidence

Chart

Description automatically generatedChart

Description automatically generated

Chart, treemap chart

Description automatically generated

Chart, line chart

Description automatically generated

1. Miller, J., Bland, N., & Quinton, P. (2000a). The impact of stops and searches on crime and the community. Home Office. [↑](#endnote-ref-2)
2. MacDonald, J., Fagan, J., &amp; Geller, A. (2016). The effects of local police surges on crime and arrests in New York City. PLOS ONE, 11(6). https://doi.org/10.1371/journal.pone.0157223 [↑](#endnote-ref-3)
3. Weisburd, D., Wooditch, A., Weisburd, S., &amp; Yang, S.-M. (2015). Do stop, question, and Frisk practices deter crime? Criminology &amp; Public Policy, 15(1), 31–56. https://doi.org/10.1111/1745-9133.12172 [↑](#endnote-ref-4)
4. Petersen, K., Weisburd, D., Fay, S., Eggins, E., &amp; Mazerolle, L. (2023). Police stops to reduce crime: A systematic review and meta‐analysis. Campbell Systematic Reviews, 19(1). https://doi.org/10.1002/cl2.1302 [↑](#endnote-ref-5)
5. Moran, G., Winkley, &nbsp;L., &amp; SCHROEDER, L. A. U. R. Y. N. (2022, January 16). Stopped by police in San Diego? A lot depends on where you live, Drive. San Diego Union Tribune. Retrieved April 29, 2023, from https://www.sandiegouniontribune.com/news/watchdog/story/2022-01-16/stopped-by-police-in-san-diego-a-lot-depends-on-where-you-live-drive [↑](#endnote-ref-6)
6. Isard, W. (1960). Methods of regional analysis: An introduction to regional science: An introduction to regional science. MIT Press. [↑](#endnote-ref-7)
7. Benassi, F., Crisci, M., & Rimoldi, S. (2022). Location quotient as a local index of residential segregation. Theoretical and applied aspects 1. Rivista Italiana di Economia, Demografia e Statistica, LXXVI, 23-34. [↑](#endnote-ref-8)