Spatial Patterns of Hate Crime against Asian Americans: Case Study of an Asian Populated City[1]

Sungil Han. Ph.D. (University of North Carolina at Charlotte)

Jaeyong Choi. Ph.D. (West Chester University)

Abstract

The recent spike in hate crime against Asian Americans called for effective crime prevention activities with insightful understanding about this type of hate crime. However, where and what may be correlated with the patterns of hate crime again Asian Americans remains largely under-documented. Analyzing data from one of Asian population cities, this study aims to provide clear pictures of hate crime against Asian Americans, especially focusing on geospatial patterns. The descriptive maps display the concentration of hate crime against Asian Americans where more Asian-related businesses exist and more Asian individuals reside. The results of regression analysis also revealed the positive association of Asian proportion in census block groups with hate crime against Asian Americans while negative relationships of Asian proportion and White proportion with other types of hate crime.

Keywords

Hate crime, Hate crime Asian Americans, Geospatial analysis

Due to its unique nature, hate crime is considered distinct from the traditional types of crime, which highlight the criminal behavior and consequences of actions. Hate crime is hostility-motivated aggression that involves violence targeting a certain group of individuals regarding one's religion, race/ethnicity, or gender identity (Chakraborti & Garland, 2012; Hall, 2013; Perry, 2001). Especially, the intended message stating *you are not welcome* in society likely heightens the conflict between individuals having different identities and erodes the community cohesion and social order (Chakraborti, 2018; Lyons, 2007; McDevitt et al., 2001; Weisburd & Levin, 1993). Recently, high-profile hate crime cases during the COVID-19 pandemic have captured the attention of researchers and practitioners, especially those targeting Asian Americans. During the COVID-19 pandemic, hate crime against Asian Americans[2] increased in many Asian populated cities, and high-profile victimization cases appeared in news media (Anti-Asian Hate Crime Report, 2021; Han et al., 2022). Some scholars have argued that as the onset of the COVID-19 pandemic is frequently linked to a specific ethnic group, "Asian" or "Chinese", such distorted emotion can appear in the form of hate, harassment, or crime against Asian Americans (Han et al., 2022; Sun, 2021).

While research has examined various motives or victims of hate crimes, little empirical attention, however, has been devoted to the Asian Americans (for notable exceptions, see also Zhang et al., 2021 and Lantz & Wenger, 2022). This useful evidence articulates the status of hate crime against Asian Americans, but where and what may be correlated with the patterns of hate crime remains largely under-documented. Especially, geospatial approaches exploring crime patterns of hate crime against Asian Americans have been considerably sparse.

---

[2] Asian Americans technically indicate American citizens with Asian heritage. However, in this study Asian Americans represent Asian individuals residing in the U.S.

Previous studies examining spatial patterns of hate crime shed light on general hate crime patterns (Benier, 2017; Jendryke & McClure, 2019; Wenger & Lantz, 2021) or focused on specific victim groups, including LGBT (Hatzenbuehler et al., 2015). For effective crime prevention activities, understanding the nature, characteristics, and patterns of crime incidents is imperative (Brantingham & Brantingham, 1995; Sherman & Weisburd, 1995). Further, due to the unique characteristics of hate crime centered on motivation, the spatial pattern of hate crime can differ from other types of crime (Benier, 2017; Gladfelter et al., 2017). Even, the patterns can be varied according to the types of bias/prejudice. For instance, Lyons (2007) found that anti-black hate crimes are more likely to happen in organized communities while anti-white hate crime are often observed in traditionally disadvantaged areas.

Accordingly, this study aims to provide pictures of hate crime against Asian Americans by analyzing geospatial patterns of hate crime. Specifically, this study is designed to fill the gap in the literature with twofold. First, the patterns of hate crime against Asian Americans are examined to assess whether some neighborhoods or areas are vulnerable to hate crime against Asian Americans. This crime pattern is compared with other types of hate crime. Second, this study is designed to statistically analyze whether certain factors of neighborhoods are correlated with hate crime against Asian Americans, such as racial composition, crime rates, and social/physical disadvantages. Examining existing correlations is expected to provide hints on why/where hate crime against Asian Americans likely happens. For the study, data from Seattle Police Department is featured and various statistical approaches are utilized.

Hate Crime again Asian Americans

      Hate crimes[3] based on the prejudice toward Asian Americans as an exemplar minority or perpetual immigrants have never been new in the U.S. since the early stage of Asian migration in the 1800s (Chen, 2017; Zhang et al., 2021). The fast-growing immigration of Asians into the U.S., along with the rising proportion of the Asian population in various facets of the economy, politics, and culture, makes the traditional majority group perceive threats to the stability of power and dominance (Gover et al., 2020). For instance, the number of Asian individuals in the U.S. was 980,000 in the first-time census in 1960, and the population rose to 11.9 million by 2000 and then almost doubled to 22.4 million by 2019, which accounts for about 7.8% of the nation's overall population (Budiman & Ruiz, 2021). Looking at the economic status of Asian population, the median household income level of the Asian population is higher than that of White, African American, and Hispanic origin households, especially it is more than doubled that of African American households (Proctor et al., 2016).

      Thus, the dominant group views this growing body of population as a symbol of invasion which is called "Yellow Peril" indicating the peril of the yellow race (Chen, 2000; Hsu, 2015; Kimura, 2021). The integrated threat theory posits that when the in-group (i.e., dominant group) members perceive threats to their values or culture from the out-group members (i.e., outsiders), negative and prejudice-oriented responses can take place as a means of defending their value and identity (Stephan & Stephan, 1993). In addition, even though many of the later generations of Asian Americans harmoniously assimilate into the society, Asian immigrants or their

---

[3] The definitions of hate crime vary across jurisdictions, but they commonly highlight the motivation of aggressive behavior against a certain group. For instance, the Department of Justice (DOJ) describes hate actions with two categories: hate crime and incidents while FBI defines hate crime is a criminal offense against a person or property motivated by bias. However, the recent memo of US Attorney General's Office declares the combat against both hate crimes and hate incidents. Therefore, according to the Department of Justice guideline and definitions of recent studies (e.g., Han et al., 2022), hate crime, in this study, includes any types of aggressive behavior or speech motivated by biases that reported to police.

descendants are considered the model minority who are obedient to the system of the host nation but are perpetual outside members (Ancheta, 2006; Kim, 1999). Asian Americans are described with educational inspiration, diligence, family solidarity, respect for rule and authority, and morality, but being triangulated between usually White and Black to protect the privileges of the dominant group (Kim, 1999). However, in accordance with national hardship such as economic downfall, wars, or pandemics, this modeled group can be isolated or othered again by the dominant group in the form of discriminatory legislation (Chinese Exclusion Act), policies (e.g., Japanese concentration camps), or hate harassment (Gover et al., 2020; Han et al., 2022). For instance, during the COVID-19 pandemic, high-profile hate crime cases against Asian-Americans put a group of individuals who are from a specific ethnic group in fear of victimization due to their ethnic identity. Studies argued that the onset of the pandemic is linked to the myth that the novel coronavirus is an "Asian" or Chinese" virus, resulting in a significant spike in hate crime against Asian Americans (Cho et al., 2021; Han et al., 2022; Ipsos, 2020). According to the Anti-Asian Hate Crime Report (2021), hate crime against Asian Americans significantly increased, about 145% in 2020 compared to 2019. Han and colleagues (2022) also analyzed the trends of hate crime against Asian Americans and found the temporal spike in hate crime after the onset of the COVID-19 pandemic and the spread of blaming labels on Asian Americans for coronavirus in March of 2020

The Spatial Nature of Hate Crime

Even though a bulk of studies have supported the notion of crime concentration in a geographical area and found consistent patterns for many types of crime (e.g., more crime in disadvantaged areas), some argued that the spatial pattern of hate crime may differ from that of other types of crime (Sullaway, 2004; Wenger & Lantz, 2021). Since hate crime needs a specific

target along with a prominent bias to take place, hate crime may exhibit different spatial clusters than general crime (Wenger & Lantz, 2021) or different relationships with ecological characteristics of macro-level units such as neighborhoods (Grattet, 2009; Lyons, 2007). For instance, Wenger and Lantz (2021) examined the geographical patterns of hate crime in Washington, D.C., from 2012 through 2018. The analyses examining the concentration and stability of hate crime revealed that hate crime is highly concentrated in limited areas and this concentration remains stable over time in the study area.

Two theoretical perspectives may explain this distinct pattern of hate crime. First, routine activities theory argues that the convergence of vulnerable targets, motivated offenders, and lack of guardianship can lead to a higher chance of crime incidents taking place (Cohen & Felson, 1979). A line of studies utilized the three elements of routine activities to account for the victimization of hate crime (Byers & Crider, 2002; McNeeley & Overstreet, 2018; Waldner & Berg, 2008). The unique routine of victims (i.e., frequenting gay public spaces for gay individuals) may put themselves at risk of victimization since perpetrators tend to seek their targets in areas where they recognize targets easily (Waldner & Berg, 2008). For instance, Grattet (2009) pays attention to the patterns of various types of hate crime and found that anti-gay hate crime tends to happen in a limited area with or proximate to gay and lesbian bars in the downtown areas in Sacramento in California. Similarly, Jendryke and McClure (2019) examined the geospatial association between hate crimes and hate groups in the U.S. They found that hate crimes and hate groups are spatially correlated. Still, this association is restricted to certain parts of the nation, especially in the South, while more hate crimes are observed in dense urban areas. Drawn from the theoretical notion and previous literature findings, we also may expect more

hate crime against Asian Americans in Asian populated communities compared with areas with fewer Asian Americans.

On the other hand, the second theoretical lens "defended communities perspective" argues that hate crime may occur in communities that are more homogeneous, less disadvantaged, and dominated by a majority group of society where high levels of the social network are expected (Gladfelter et al., 2017; Grattet, 2009; Green et al., 1998). According to this perspective, communities tend to defend valued community identities, and hated motivated crime can be a means of taking action against a perceived threat posed by outside elements to community identity (Suttles, 1972). For instance, Green and colleagues (1998) revealed that more hate crime targeting racial minorities were reported in traditionally white-dominated communities with the recent increase in migration of outsiders in New York. Similarly, Lyons (2007) examined the relationship between racial hate crime and the economic and social capital of communities in Chicago and found that anti-black hate crimes are more frequent in relatively organized with high social cohesion and economically affluent communities. He contended that "hate crimes are the outcome of collective action" that is an organized response to perceived external threats. This response should be related to the levels of social cohesion and norms of informal social control (Lyons, 2007, p. 824). The consistent findings are also observed in another study examining hate crime data from Pennsylvania. Gladfelter and colleagues (2017) found that anti-black hate crimes are more prevalent in racially homogeneous and advantaged communities when accounting for social disorganization variables. Taken together, a good number of studies have focused on the unique patterns of hate crime that are distinct from other types of crime. However, to our knowledge, no study shed light on the hate crime against Asian Americans.

Current Study

This study aims to assess the spatial patterns of hate crime against Asian Americans as well as its association with other ecological characteristics at the macro-level. Based on previous findings and theoretical arguments, this study specifically answers three research questions; 1) is there a concentration of hate crime within a city, 2) do spatial patterns of hate crime against Asian Americans differ from that of other types of hate crime? And 3) do neighborhood conditions have impact on the distribution of hate crime against Asian Americans? To answer these questions, data from one of the most Asian populated cities is featured and analyzed with geospatial statistical approaches.

Method

Data

For the study, data were drawn from a Seattle Police Department to analyze the patterns of Asian American hate crime. Seattle is the 15th largest city in the U.S with a little more than 730,000 population, 120,921 identified as Asian population, which accounts for approximately 16.5% of the total population of the city. Based upon the request, Seattle Police Department provided hate crime data with geospatial information. In particular, the data is comprised of general hate crime and hate crime against Asian Americans between January 2017 and June 2020. For the analysis, hate crime data is geocoded through Arc GIS software, and the number of hate crime per census block group is calculated. Census block group is the second smallest administrative geospatial boundary which includes information on the socio-demographic characteristics of residents. For the census data, the 2010 census data and 2018 American Community Survey Data are utilized.

Measurement

  Dependent variable. To measure the patterns of hate crime in Seattle, two types of hate crime are featured: hate crime against Asian Americans and other types of hate crime. SPD reports criminality of hate crime (i.e., Bias incident or hate crime), bias types, and description of offenses. Based on the bias type, hate crime incidents are categorized into hate crime against Asian Americans and other types of hate crime. As a result, if the bias or motivation of the hate crime is anti-Asian, the case belongs to hate crime against Asian Americans while other incidents are categorized as other types of hate crime.

  Independent variables. Three variables are treated as primary variables of interest to answer major research questions of the current study. First, the proportion of the Asian population in a census block group is utilized. The ratio of the number of residents who identify themselves as Asian against the total population of the census block group is calculated. Second, according to the community defended perspective, two variables that represent the domination of the majority population are utilized. First, similar to the ratio of the Asian population, the proportion of the White population is captured. In addition, the proportion of the Black population is included in the analysis. The triangulation model explains that the Asian population is treated as a model minority for the White majority while becoming threat to the Black population since Asian residents replace positions of Black in many parts of society (Xu & Lee, 2013). Therefore, proportions of White and Black populations in a census block group are included in the study.

  Additional variables were constructed to control the effects of critical neighborhood conditions. Based on the social disorganization theory (Sampson & Groves, 1989; Sampson

et al., 1997; Shaw & McKay, 1942), two variables are created to reflect the adverse condition of the neighborhood: disadvantage and residential stability. First, prior literature argued that it is appropriate to employ complex variables to capture the degree of disadvantage in communities because of the possible collinearity among the disadvantage-related indicators (Kubrin & Ishizawa, 2012; Sampson et al., 2005). This study also features low education, poverty, and single-parent households to reflect the level of disadvantage. The common factor score for three items was created with higher values indicating more disadvantage in the neighborhoods ($\alpha=.63$). Similarly, two items are used to capture the level of residential instability in census block groups. The proportion of households that moved into the current unit in the last five years and the ratio of rental occupied units are used to calculate the common factor value ($\alpha=.73$). Also, the number of total populations in the census block groups is utilized in the study. Lastly, crime counts for three years (2017~2019) for each census block group are calculated to account for the relationship between hate crime and general crime.

Analytic Plan

With the data, two analytic approaches are utilized. First, geospatial analysis is operated to examine the patterns of hate crime in the study areas to find the hate crime concentrated areas. In addition, by comparing patterns of general hate crime with hate crime targeting the Asian population, crime maps provide hints for where more hate crime occurs across the city. Second, due to the nature of the count variable (i.e., hate crime count), the negative binomial distribution is able to manage the limitation of conventional regression analysis, including the violation of the normality assumption (Osgood, 2000). Therefore, a set of negative binominal regression analyses are operated. In addition, the proportion of cases with values of zero in the dependent variable is predicted to considerably exceed the expected values in negative binomial or Poisson

distribution (Lambert, 1992). In this case, the excessive zeros in event-count may be inflated by an additional mechanism not by a count model (Desmarais & Harden, 2013). The zero-inflated negative binomial model is expected to manage this issue by using mixture models that incorporate both binary component and count model. The binary component assesses the probability of values of zero on outcome measures being structural. Meanwhile, the count model explains the influence of individual values on the dependent variable.

The Vuong (1989) test is commonly utilized to determine whether assessing the zero-inflation component is appropriate by testing the null hypothesis that the two models fit the data equally well. For the study, the Vuong test was significant, meaning that the use of a zero-inflated negative binomial model (ZINB) is recommended. However, some argued that negative binomial regression models (NBR) are adequate enough for handling excessive zeros in outcome measures (Allison, 2012; Xie et al., 2013) or revealed that ZINB and NBR produced essentially consistent results (Fisher et al., 2017). Therefore, this study operated both ZINB and NBR to provide more precise estimates.

Results

Table 1 displays descriptive statistics for all variables in the analyses. On average, a small number of hate crime against Asian Americans occurred in Seattle. A total of 86 hate crime happened during the study period, and each census block group reported on average less than one hate crime targeting Asian Americans. Looking at the other types of hate crime, there were 1,331 hate crimes in Seattle between 2017-2020, and almost three hate crime were reported to Seattle Police Department from each census block group. In terms of race/ethnicity, around 69% of the

census population is White, while 5.2% is Black and 14.6% are Asian. With respect to the crime rates of census block groups, approximately 443 crimes happened between 2017-2019.

TABLE 1 AROUND HERE

Figure 1 visually presents the distribution of hate crime against Asian Americans and other types of hate crime in Seattle. In the figures, the star mark indicates more hate crime incidents. For instance, hate crime against Asian Americans occurred at the center areas of the city. Especially, six hate crime against Asian Americans were reported in the environs of "Seattle China Town International District." Another census block group where four hate crime against Asian Americans happened is closer to the "Seattle Center" which is one of tourism areas. Other types of hate crime were also mainly located at the center of the city but showed a larger boundary of the concentration. In addition, hate crime and general crime present similar patterns of distribution.

FIGURE 1 AROUND HERE

Figure 2 illustrates the spatial correlation between census block groups regarding hate crime against Asian Americans and other types of hate crime in Seattle. The local indicators of spatial association (LISA; Anselin, 1995) displays the spatial distribution of the hate crime over census block groups, showing areas of high (or low) crime surrounded by other high (or low) units. These techniques are designed to illustrate the significant concentration of hate crime across the city. Consistent with the patterns observed in Figure 1, significant concentrations indicating census block groups with a higher number of hate crime being surrounded by another census block group with a higher number are observed at the center of the city (high-high hate crime concentrations), specifically nearby Seattle Chinatown International District. Other types of hate crime also presented similar patterns of concentration, but they account for larger areas.

FIGURE 2 AROUND HERE

Table 2 presents the results of zero-inflated binomial regressions. For each variable, the incident rate ratio (IRR), which indicates the probability of having a higher count of events is presented. Model 1 shows that the probability of having a higher count of hate crime against Asian Americans for census block groups increases when crime (IRR=1.001), population (IRR=1.001), and Asian proportion (IRR=1.07) increase. Consistent with the argument of routine activities, more hate crime against Asian Americans are observed in communities with a higher proportion of the Asian population. Interestingly, crime holds a significant association with hate crime against Asian Americans. Census block groups with higher crime rates are likely to struggle with hate crime against Asian Americans. Model 2 shows that other types of hate crime are influenced by crime, White proportion, Asian proportion and residential instability. Specifically, White proportion have significant effects, but its effects are negative (IRR=0.99). Inconsistent with defended communities perspective, the more White proportion does not increase other types of hate crime. Interestingly, the Asian proportion also holds negative associations with the dependent variable (IRR=0.99). More Asian Americans in census block groups will likely lead to less hate crime. In addition, the significant association of residential instability provides support for the social disorganization theory (IRR=1.79). More hate crime in a census block group is expected with higher residential mobility. Again, crime counts play a critical role in predicting hate crime not only for those against Asian Americans but also for other types of hate crime (IRR=1.001).

Next, Table 3 investigates the effects of the same set of independent variables for hate crime against Asian Americans and other types of hate crime with negative binomial regression models. All the variables except the population variable held significant impacts on both

dependent variables and remained significant in the same directions. Crime and Asian proportion presented positive effects for hate crime against Asian Americans. Also, crime and residential instability showed positive associations while the White proportion and Asian proportion hold negative relationships for other types of hate crime.

Discussion

Bias-motivated criminal behaviors harm not only vulnerable victims but also society overall by facilitating more conflict between members of society. Recent high-profile hate crime against Asian Americans also put many members of a race/ethnic group in fear of being victimization due to their race/ethnic identity. Accordingly, this study aims to investigate geospatial patterns of hate crime against Asian Americans and possible explanatory factors for the distribution of hate crime at the census block group level in Seattle. Three notable findings emerged from descriptive and statistical modeling approaches.

First, the concentration of hate crime against Asian Americans is observed at the center of the city nearby "International District China Town". As routine activities theory argues, many hate crime against Asian Americans occurred Asian populated areas of the city where offenders believe more vulnerable victims can account. This finding is consistent with previous literature about other types of hate crime. For instance, Grattet (2009) found the concentrated patterns of anti-gay bias crime in areas known as "gay neighborhood" that contains more symbols of gayness, such as gay bars. In addition, this pattern was distinct from other types of hate crime. According to the findings of the current study, it can be implied that different patterns of hate crime according to bias types can attribute to the different routines or patterns of victims and

offenders rather than different theoretical mechanisms. In other words, we might expect more hate crime against Asian Americans where more Asian populations reside.

Second, we found the apparent correlation between crime, other types of hate crime, and hate crime against Asian Americans. The descriptive maps of hate crime also visually display the crime concentration which is called "hot spot". The crime hot spots are located at the center of the city, and these concentration patterns look considerably consistent with that of hate crime against Asian Americans and other types of hate crime. The results of regression analyses also supported the overlap of those crimes. Crime variable is the only consistent factor for both hate against Asian Americans and other types of hate crime. As census block groups hold higher crime rates, more hate crimes are also expected. Two possible notions can be applied to explain this correlation between general crime and hate crime. First, from the social disorganization argument, the weakened levels of social control allow more crimes to happen in a neighborhood, and this is also the case for the hate crime as well. However, the effects of social disorganization-related variables showed marginal effects only for other types of hate crime in the study.

The second possible explanation focuses on the characteristics of perpetrators. A line of studies examining hate crime has paid attention to the characteristics of hate crime perpetrators and revealed many of the perpetrators held previous criminal history. For instance, Dunbar (1999) examined the records of hate crime perpetrators who were convicted in the criminal justice system and found that 87% of offenders had a prior criminal record while 60% showed a history of substance abuse. In a study about the criminal careers of hate crime perpetrators in the U.K, Jolliffe and Farrington (2020) found about 97% of hate crime offenders had previous offenses history. As Messner and colleagues (2004) argued that hate crime offenders are not "specialists", hate crime are regularly committed by consistent offenders who commit other

types of crime as well. This characteristic of hate crime offenders can contribute to the overlap of hate crime and general crime.

Lastly, as opposed to the emphasis of previous literature about the defended communities, the findings revealed null effects of White proportion on hate crime against Asian Americans while the negative effects on other types of hate crime. In the model for other types of hate crime, Asian proportion and White proportion variables show significant negative associations. This can imply that probably the defended neighborhood perspective may work for a specific bias type, such as hate crime against Black committed by White individuals.

In spite of the findings emanating from our geospatial investigation of hate crime against Asian Americans, we are also mindful of the limitations of our work. First, our data were limited to a single U.S. city. Even though the well-known limitation of using multiple sources of hate crime data due to the distinct definitions across jurisdictions, it would be beneficial to expand additional work in other U.S. cities. Second, more neighborhood contexts should be considered to understand how hate crime fits within a neighborhood residents' perception or defensive strategies. The null effects of domination of the White population on hate crime may stem from a lack of consideration for levels of social cohesion. For instance, Lyons (2007) analyzed data from Chicago and found that collective efficacy is positively related to a higher volume of hate crime against Black in communities in Chicago. Thus, the consideration of neighborhood's cultural and ecological contexts would provide a better understanding of why hate crime emerges.

Lastly, this study, like other hate crime literature, solely relies on the official crime data with cases reported to a police department. Therefore, there may be a bias coming from hidden figures (not reported cases) or a lack of understanding about the crime incidents, such as the

relationship between offenders and victims. Future research, therefore, needs to include individual information along with important neighborhood contexts in order to produce more insightful pictures of hate crime.

Hate crime against Asian Americans has never been new, and recent hate crime cases raised significant concerns about the victimization of hate crime among Asian Americans. To build an effective policies and law enforcement strategies, various explanations and information are needed from different analytic approaches. Thus, the community of scholars and government officials should continue to examine the hate crime with different biases and provide adequate service to people in need.

Reference

Allison, P., & Greene, W. (2012). Do we really need zero-inflated models. Statistical Horizons.

Ancheta, A. N. (2006). Race, rights, and the Asian American experience. Rutgers University Press.

Anti-Asian Hate Crime Report. (2021). Report to the nation: anti-Asian prejudice & hate crime. Center for the Study of Hate and Extremism, California State University-San Bernardino.

Benier, K. (2017). The neighborhood context of hate crime: A comparison of violent and property offenses using rare events modeling. *Violence and victims, 32*(4), 584-608.

Brantingham, P., & Brantingham, P. (1995). Criminality of place. *European Journal on Criminal Policy and Research, 3*(3), 5-26.

Budiman, A. & Ruiz, N.G. (2021) Key facts about Asian Americans, a diverse and growing population. Washington DC: Pew Research Center Available from: https://www.pewresearch.org/fact-tank/2021/04/29/key-facts-about-asian-americans/ [Accessed 30 June 2021]

Byers, B. D., & Crider, B. W. (2002). Hate crimes against the Amish: A qualitative analysis of bias motivation using routine activities theory. *Deviant Behavior, 23*(2), 115-148.

Chakraborti, N. (2018). Responding to hate crime: Escalating problems, continued failings. *Criminology & Criminal Justice*, *18*(4), 387-404.

Chakraborti, N., & Garland, J. (2012). Reconceptualizing hate crime victimization through the lens of vulnerability and 'difference'. *Theoretical criminology*, *16*(4), 499-514.

Chen, J. J. (2017). First ever tracker of hate crimes against Asian-Americans launched. Retrieved from http://www.npr.org/sections/codeswitch/2017/02/17/515824196/first-ever-tracker-of-hate-crimes-against-asianamericans-launched

Chen, T. Y. L. (2000). Hate violence as border patrol: An Asian American theory of hate violence. *Asian LJ, 7*(1), 69.

Cho, H., Li, W., Cannon, J., Lopez, R., & Song, C. (2021). Testing three explanations for stigmatization of people of Asian descent during COVID-19: maladaptive coping, biased media use, or racial prejudice?. *Ethnicity & Health, 26*(1), 94-109.

Cohen, L. E., & Felson, M. (1979). On estimating the social costs of national economic policy: A critical examination of the Brenner study. *Social Indicators Research*, 251-259.

Desmarais, B. A., & Harden, J. J. (2013). Testing for zero inflation in count models: Bias correction for the Vuong test. *The Stata Journal, 13*(4), 810-835.

Dunbar, E. (1999). Defending the indefensible: A critique and analysis of psycholegal defense arguments of hate crime perpetrators. *Journal of Contemporary Criminal Justice*, *15*(1), 64-77.

Fisher, W. H., Hartwell, S. W., & Deng, X. (2017). Managing inflation: On the use and potential misuse of zero-inflated count regression models. *Crime & Delinquency, 63*(1), 77-87.

Gladfelter, A. S., Lantz, B., & Ruback, R. B. (2017). The complexity of hate crime and bias activity: Variation across contexts and types of bias. *Justice quarterly*, *34*(1), 55-83.

Gover, A. R., Harper, S. B., & Langton, L. (2020). Anti-Asian hate crime during the COVID-19 pandemic: Exploring the reproduction of inequality. *American Journal of Criminal Justice*, *45*(4), 647-667.

Grattet, R. (2009). The urban ecology of bias crime: A study of disorganized and defended neighborhoods. *Social Problems, 56*(1), 132-150.

Green, D. P., Glaser, J., & Rich, A. (1998). From lynching to gay bashing: the elusive connection between economic conditions and hate crime. *Journal of Personality and Social Psychology*, *75*(1), 82.

Hall N (2005) Hate Crime. Cullompton: Willan.

Han, S., Riddell, J. R., & Piquero, A. R. (2022). Anti-Asian American hate crimes spike during the early stages of the COVID-19 pandemic. *Journal of Interpersonal Violence*, 08862605221107056.

Hatzenbuehler, M. L., Duncan, D., & Johnson, R. (2015). Neighborhood-level LGBT hate crimes and bullying among sexual minority youths: A geospatial analysis. *Violence and Victims*, *30*(4), 663-675.

Hsu, M. (2015). From Yellow Peril to Model Minority. *Not Even Past: Features*.

Ipsos. (2020). New center for public integrity/Ipsos poll finds most Americans say the Coronavirus pandemic is a natural disaster. https://www.ipsos.com/en-us/newspolls/center-for-public-integrity-poll-2020

Jendryke, M., & McClure, S. C. (2019). Mapping crime–Hate crimes and hate groups in the USA: A spatial analysis with gridded data. *Applied Geography*, *111*, 102072.

Jolliffe, D., & Farrington, D. P. (2020). The criminal careers of those imprisoned for hate crime in the UK. *European Journal of Criminology*, *17*(6), 936-955.

Kim, C. J. (1999). The racial triangulation of Asian Americans. *Politics & society, 27*(1), 105-138.

Kimura, K. (2021). "Yellow Perils," Revived: Exploring racialized Asian/American affect and materiality through hate discourse over the COVID-19 Pandemic. *Journal of Hate Studies*, *17*(1).

Kubrin, C. E., & Ishizawa, H. (2012). Why some immigrant neighborhoods are safer than others: Divergent findings from Los Angeles and Chicago. *The Annals of the American Academy of Political and Social Science*, *641*(1), 148-173.

Lambert, D. (1992). Zero-inflated Poisson regression, with an application to defects in manufacturing. *Technometrics*, *34*(1), 1-14.

Lantz, B., & Wenger, M. R. (2022). Anti-Asian xenophobia, hate crime victimization, and fear of victimization during the COVID-19 pandemic. *Journal of Interpersonal violence*, 08862605221086651.

Lyons, C. J. (2007). Community (dis) organization and racially motivated crime. *American Journal of sociology*, *113*(3), 815-863.

McDevitt, J., Levin, J., Nolan, J., & Bennett, S. (2017). Hate crime offenders. In *Hate Crime* (pp. 124-145). Willan.

McNeeley, S., & Overstreet, S. (2018). Lifestyle-routine activities, neighborhood context, and ethnic hate crime victimization. *Violence and Victims, 33*(5), 932-948.

Messner, S. F., McHugh, S., & Felson, R. B. (2004). Distinctive characteristics of assaults motivated by bias. *Criminology*, *42*(3), 585-618.

Osgood, D. W. (2000). Poisson-based regression analysis of aggregate crime rates. *Journal of Quantitative Criminology*, *16*(1), 21-43.

Perry, B. (2001). In the name of hate: Understanding hate crimes. New York: Routledge

Proctor, B. D., Semega, J. L., & Kollar, M. A. (2016). Income and poverty in the United States: 2015. *US census bureau, current population reports*, *14*.

Sampson, R. J., & Groves, W. B. (1989). Community structure and crime: Testing social-disorganization theory. *American Journal of Sociology*, *94*(4), 774-802.

Sampson, R. J., Raudenbush, S. W., & Earls, F. (1997). Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science*, *277*(5328), 918-924.

Sampson, R. J., Morenoff, J. D., & Raudenbush, S. (2005). Social anatomy of racial and ethnic disparities in violence. *American Journal of Public Health*, *95*(2), 224-232.

Shaw, C. R., & McKay, H. D. (1942). Juvenile delinquency and urban areas.

Sherman, L. W., & Weisburd, D. (1995). General deterrent effects of police patrol in crime "hot spots": A randomized, controlled trial. *Justice Quarterly*, *12*(4), 625-648.

Stephan, W. S., & Stephan, C. W. (1993). An integrated threat theory of prejudice. In *Reducing prejudice and discrimination* (pp. 33-56). Psychology Press.

Sullaway, M. (2004). Psychological perspectives on hate crime laws. *Psychology, Public Policy, and Law*, *10*(3), 250.

Sun. W. (2021, May 11). The pain and fear of anti-Asian hate crimes hits close to home. CNBC. Retrieved from https://www.cnbc.com/2021/05/11/op-ed-the-pain-and-fear-of-anti-asian-hate-crimes-hits-close-to-home.html.

Suttles, Gerald. 1972. The Social Construction of Communities. Chicago, IL: University of Chicago Press

Vuong, Q. H. (1989). Likelihood ratio tests for model selection and non-nested hypotheses. *Econometrica: Journal of the Econometric Society*, 307-333.

Waldner, L. K., & Berg, J. (2008). Explaining antigay violence using target congruence: An application of revised routine activities theory. *Violence and victims*, *23*(3), 267-287.

Weisburd, S. B., & Levin, B. (1993). On the basis of sex: Recognizing gender-based bias crimes. *Stan. L. & Pol'y Rev.*, *5*, 21.

Wenger, M. R., & Lantz, B. (2021). Hate crime and place: The spatial and temporal concentration of bias-motivated crime in Washington, DC. *Journal of Interpersonal Violence*, 0886260520987817.

Xie, H., Tao, J., McHugo, G. J., & Drake, R. E. (2013). Comparing statistical methods for analyzing skewed longitudinal count data with many zeros: An example of smoking cessation. *Journal of Substance Abuse Treatment*, *45*(1), 99-108.

Xu, J., & Lee, J. C. (2013). The marginalized "model" minority: An empirical examination of the racial triangulation of Asian Americans. *Social forces, 91*(4), 1363-1397.

Zhang, Y., Zhang, L., & Benton, F. (2021). Hate crimes against Asian Americans. *American Journal of Criminal Justice*, 1-21.

Table 1. Descriptive Statistics (N=454)

Variable	Mean	Std	Min	Max
Hate Crime against Asian	0.2	0.6	0	6
Other Types of Hate Crime	2.9	6.6	0	105
White Proportion	68.8	21.1	5	100
Black Proportion	5.2	2.4	0	17
Asian Proportion	14.6	13.6	0	81
Low Education	5.7	7.8	0	41
Poverty	11.7	12.1	0	70
Single Parent Home	21.0	15.8	0	100
Rental Residence	48.4	25.5	0	100
Moved in Last 5 Years	23.4	12.9	0	79
Crime	443.2	717.8	0	10,946
Population	1,485.9	501.5	443	6,108

Table 2. Zero-Inflated Negative Binomial Regression Analysis for Hate Crime

	Hate Crime against Asian		Other Types of Hate Crime	
	IRR (SE)	z-value	IRR (SE)	z-value
White Proportion	1.03 (.02)	1.45	0.99 (.01)	-2.44*
Black Proportion	1.28 (.18)	1.81	1.02 (.04)	0.38
Asian Proportion	1.07 (.02)	3.94***	0.99 (.01)	-2.24*
Disadvantage	1.63 (.49)	1.6	0.99 (.10)	-0.12
Residential Instability	1.47 (.42)	1.35	1.79 (.13)	7.77***
Crime	1.001 (.001)	3.14**	1.001 (.001)	7.73***
Population	1.001 (.001)	2.43*	1.001 (.001)	-0.06
Constant	0.001 (.001)	-4.71***	1.47 (.84)	0.68
Inflation model†				
Crime	0.001 (.001)	-3.2**	-0.01 (.001)	-3.38**
Population	0.001 (.001)	1.8	0.01 (.001)	-0.86
White Proportion	0.10 (.06)	1.77	0.08 (.08)	1.02
Black Proportion	0.85 (.34)	2.47*	-0.82 (.88)	-0.93
Asian Proportion	0.15 (.06)	2.38*	-0.01 (.05)	-0.27
Disadvantage	1.66 (.91)	1.83	0.05 (.79)	0.06
Residential Instability	0.31 (.62)	0.51	1.28 (.47)	2.71*
Constant	-19.26 (7.52)	-2.56*	2.92 (7.24)	0.4
alpha	.102 (.19)		.353 (.06)	
Chi2	31.34***		290.02***	

Note: † Inflation model utilizes a logit link to predict odds of having a value of zero

Table 3. Negative Binomial Regression Analysis for Hate Crime

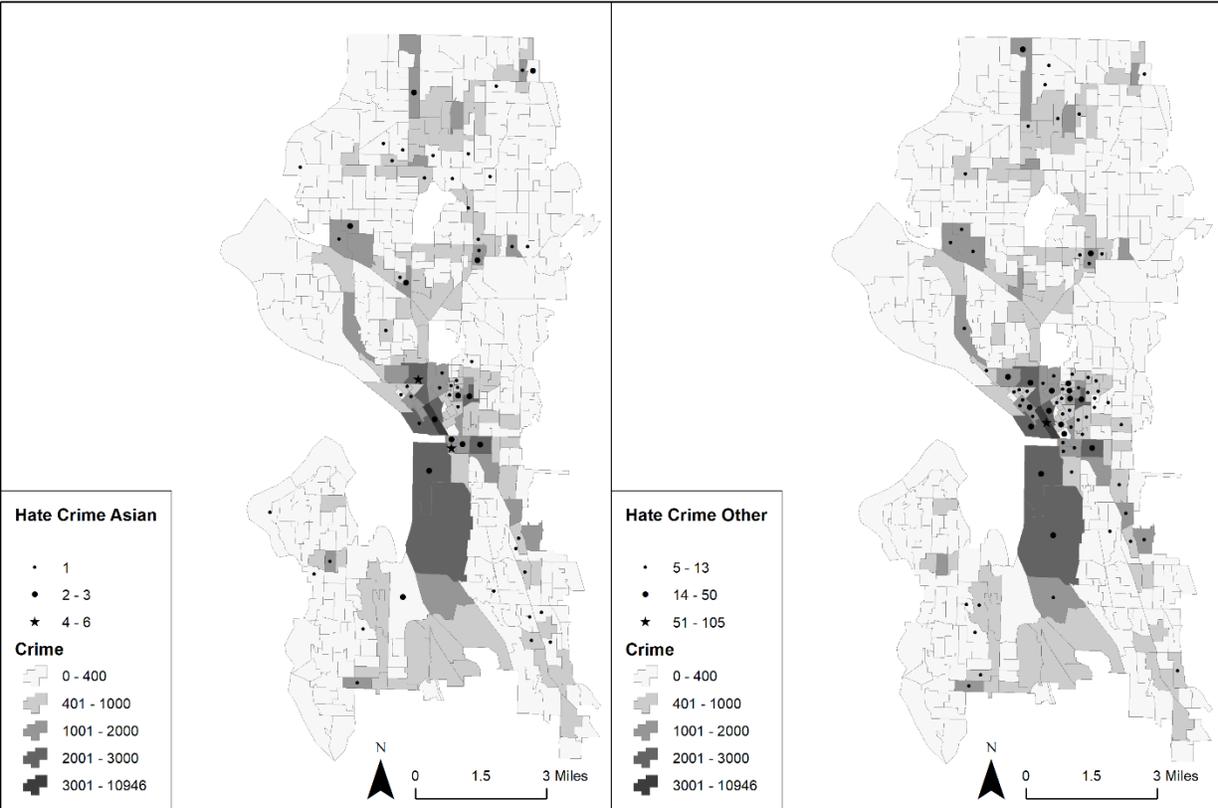|	Hate Crime against Asian		Other Types of Hate Crime	
	IRR (SE)	z-value	IRR (SE)	z-value
White Proportion	1.004 (.017)	0.25	0.984 (.006)	-2.79**
Black Proportion	0.998 (.131)	-0.02	0.998 (.045)	-0.04
Asian Proportion	1.031 (.016)	2*	0.987 (.006)	-2.29*
Disadvantage	1.066 (.274)	0.25	0.973 (.091)	-0.3
Residential Instability	1.443 (.292)	1.81	1.643 (.120)	6.81***
Constant	0.016 (.025)	-2.55*	1.770 (1.01)	1
Crime	1.001 (.001)	3.52***	1.001 (.001)	8.53***
Population	1.001 (.001)	0.16	1.001 (.001)	0.25
alpha	1.43 (.51)		.528 (.06)	
Chi2	65.75***		303.89***	

Figure 1. Hate Crime in Seattle

Figure 2. Concentration of Hate Crime

Hate Crime against Asian | Other Types of Hate Crime