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Understanding the Nature of Anti-Asian Hate Crime Distribution across New York City before and during the COVID-19 Pandemic

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ABSTRACT

There has been a long history of racism and xenophobia against Asian Americans, and, in particular, against Chinese immigrants in the United States. Since the advent of COVID-19 pandemic, there has been a surge in racially motivated hate crime across the United States, which was influenced by preconceived notions about Asian Americans. Building on this result, the present study attempted to examine the nature of anti-Asian hate crime distribution across New York City before the start of COVID-19 pandemic in 2019 and during COVID-19 pandemic in 2020. For this purpose, anti-Asian hate crime data collected for the year 2019 and 2020 from the NYPD's open portal was mapped using ArcMap Geographic Information System (GIS) software to spatially represent the distribution of anti-Asian hate crime incident patterns across New York City counties. The hypotheses developed were consistent with the results of the study. It confirmed an increase (650%) in the reported number of anti-Asian hate crime in 2020 from 2019 because of the COVID-19 pandemic. It also confirmed that anti-Asian hate crime is most concentrated in and around Manhattan's Chinatown in New York City, wherein Chinatown acts as a crime attractor for the present study. The increase in hate crimes against Asian Americans during the COVID-19 pandemic highlights how Asians are still viewed as "foreign" which is interwoven with the ideas of xenophobia and racism against Asian Americans.

Keywords: *COVID-19, Anti-Asian, Hate crime, New York City, Asian Americans, Xenophobia, Racism.*

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I. INTRODUCTION

New York City (NYC), also known as New York, is the most populous city in the United States. The population of New York City in 2020 is estimated to be around 8.3 million. It is composed of five boroughs, each of which is a county of the State of New York; Bronx (Bronx county), Brooklyn (Kings County), Manhattan (New York county), Queens (Queens county), and Staten Island (Richmond county) which was combined into a single city in 1898. According to Lubin (2017), "the city and its metropolitan area constitute the premier gateway for legal immigration to the United States. As many as 800 languages are spoken in New York, making it the most linguistically diverse city in the world."

According to the Census Bureau data (2017), NYC has the largest foreign-born population than any other city in the world. Asian-Americans make up 11.8% of New York City's population. Out of 976,807 Asian Americans, 445,145 were of Chinese descent, representing 5.4% of the city's population. New York City also has the greatest number of Asian Americans than any other city in the United States. Since the advent of COVID-19 pandemic in the United States, there has been a sharp increase in the number of reported anti-Asian hate crime. At the onset of the COVID-19 pandemic, the novel coronavirus became linguistically linked to specific terms, particularly those targeting the Asian American community.

References to being "Asian" or "Chinese" were frequently used as substitutes for the virus itself, reinforcing stigmatization and xenophobic rhetoric. This association contributed to heightened fear among Asian Americans, increasing their concerns about personal safety and the risk of victimization. Data from the Stop AAPI Hate Center indicates that a significant number of Asian Americans reported experiences of victimization during the pandemic. Notably, 69% of these incidents involved verbal harassment, with individuals subjected to derogatory remarks such as being referred to as the "Chinese Coronavirus" (Han, Riddell & Piquero, 2022). In one instance, a 35 year old Korean American was killed by a man who stalked her and followed her into her Chinatown apartment. Many people speculated that it was a hate crime but it wasn't ruled as a hate crime by the police. To increase protection, cameras have been installed in and around Manhattan's Chinatown (Denselow & Yang, 2023). In another incident near Manhattan's Chinatown, a Chinese man was stabbed in the back by a stranger while walking home. During the pandemic, such attacks became distressingly common within the Asian American community. However, law enforcement did not classify the stabbing as a hate crime, leading to widespread outrage among Asian Americans in New York City. In response, community members organized a protest outside

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the Manhattan District Attorney's office, demanding that the incident be prosecuted as a hate crime, citing longstanding concerns over the authorities' failure to adequately address anti-Asian hate crimes (Hong & Bromwich, 2021).

Based on these findings, two hypotheses were developed. One hypothesis is that anti-Asian hate crime is more concentrated in the year 2020 than in 2019 in New York City. Another hypothesis is that anti-Asian hate crime is most concentrated in and around Manhattan's Chinatown in New York City wherein, Chinatown might act as a crime attractor for the present study.

The assumption of the present study is based on routine activity theory (Cohen & Felson, 1979) and crime pattern theory (Brantingham & Brantingham, 1982). Routine activity theory (Cohen & Felson, 1979) is one of the most known theories in the field of criminology. According to Miró (2014) the theory focuses on "the study of crime as an event, highlighting its relation to space and time and emphasizing its ecological nature and the implications thereof". According to Brantingham & Brantingham (2021) crime pattern theory explains the "variation in the distribution of criminal events in space and time given a range of different propensities". The theory helps explain 'why' and 'where' crime might happen based on how people live their lives and the way the places around the city are linked to each other which is dependent on many factors like the kind of places people frequent, workplace, neighborhood, socio-economic factors, etc. Based on these factors, one can identify crime generators and crime attractors. This, in turn, helps us to explain the reasons for crime repentance (Brantingham & Brantigham, 2021).

Crime has an inherent geographic quality and is not randomly distributed. Therefore, to understand the nature of distribution of anti-Asian hate crime across New York City counties before and during the COVID-19 pandemic; crime mapping was used to visualize and analyse the anti-Asian hate crime incident patterns with the help of the GIS software. A Geographic Information System (GIS) is a computer software that involves the use of maps to project data which can be evaluated and assessed for the benefit of public safety in relation to inferring specific information about events, disasters, vulnerable populations, etc. It facilitates the integration of information from multiple sources, allowing for a comprehensive spatial analysis of the data. By leveraging GIS, crime data can be systematically mapped, interpreted, and acted upon, enhancing the effectiveness of crime prevention strategies. (Caplan & Moreto, 2012).

Given its ability to provide spatial insights, GIS has been widely employed in public safety

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initiatives and law enforcement efforts. The study also seeks to examine the broader impact of hate crimes on Asian communities, analyzing both the immediate and long-term consequences. This includes the psychological effects, such as increased fear, anxiety, and emotional distress among victims and community members.

Additionally, the study explores the social and economic repercussions, including reduced sense of belonging, reluctance to engage in public spaces, and other hardships faced by the Asian American community in the New York City.

A. Review of Literature

1. Background Theory

The ecological theory tends to explain the cause of crime as resulting from the physical environment in which people live and interact socially which creates an opportunity for criminal and non-criminal behavior (Livesey, n.d.). Routine activity theory emphasizes how everyday travel and activities can bring a motivated offender into contact with a victim without the victim having a capable guardian (Cohen & Felson, 1979) which was clearly the case for most of the victims of anti-Asian hate crime when they were victimized. This theory has been extensively applied in the study of various types of crime, including sexual offenses (Tewksbury & Mustaine, 2001), robbery (Tseloni, Wittebrood, Farrell, & Pease, 2004), and, more recently, cybercrime.

Its broad applicability highlights its relevance in understanding criminal behavior across different contexts and evolving crime trends. According to Miró (2014) routine activity theory posits that a criminal event consists of three important elements that intersect across space and time in a person's daily life activities. This includes "(a) a potential offender with the capacity to commit a crime; (b) a suitable target or victim; and finally (c) the absence of guardians capable of protecting targets and victims. The likely offender may be anyone with a motive to commit a crime and with the capacity to do so" (Felson & Cohen, 1980). From the perspective of routine activity theory, offenders assess the suitability of a target based on perceived vulnerability and risk factors. This evaluation is guided by four key criteria, collectively referred to by the acronym VIVA: value, inertia, visibility, and access. These factors influence an offender's decision-making process, determining whether a potential target is considered viable for an attack (Miró, 2014). Value refers to the real or perceived worth of the target. Inertia pertains to the physical aspects which might act as an obstacle to the offender. Visibility refers to the proximity or exposure of the targets to the offenders.

Lastly, access denotes the placement of certain objects in a place or the place itself which

might increase the likelihood of a crime taking place if the conditions are suitable in the eyes of the offender. The work of Cohen and Felson introduces the concept of a criminal who capitalizes on available opportunities, which is central to the rational choice perspective. According to this view, offenders make calculated decisions based on the situational opportunities present at a given moment, assessing whether to proceed with an offense. The foundation of this opportunity-based framework can be traced back to Hindelang's lifestyle theory (1976), which posits that certain lifestyles increase an individual's likelihood of victimization. Hindelang argued that specific routines and behaviors create environments that are more conducive to offending, thereby providing offenders with greater opportunities to commit crimes (Miró, 2014).

Crime pattern theory plays a crucial role in advancing the understanding of the relationship between crime and place by integrating principles from both rational choice theory and routine activity theory. This framework provides insight into the spatial and situational factors that influence criminal behavior, offering a comprehensive explanation of why crime occurs in specific locations (Eck & Weisburd, 2015). It explains why people commit crime in certain areas like people's place of living, working or a public place (Brantingham and Brantingham, 1982). It explores the relationship between criminal activity, potential targets, and offender mobility, all of which are influenced by routine activities. Offenders are more likely to engage in criminal behavior in locations they frequently visit and are familiar with, as this familiarity provides a strategic advantage in selecting future crime sites. Consequently, a comprehensive analysis of the spatial and temporal distribution of crime requires an understanding of offenders' daily routines and movement patterns (Miró, 2014).

"Crime generators are particular areas to which large numbers of people are attracted for reasons unrelated to any particular level of criminal motivation they might have or to any particular crime they might end up committing. Typical examples might include shopping precincts; entertainment districts; office concentrations; or sports stadium. Crime generators produce crime by creating particular times and places that provide appropriate concentrations of people and other targets in settings that are conducive to particular types of criminal acts. Mixed into the people gathered at generator locations are some potential offenders with sufficient general levels of criminal motivation that although they did not come to the area with the explicit intent of doing a crime, they notice and exploit criminal opportunities" (Brantingham and Brantingham, 1995, p7). "Whereas, crime attractors are particular places, areas, neighbourhoods, districts which create well-known criminal opportunities to which strongly motivated, intending criminal offenders are attracted because of the known

opportunities for particular types of crime. Examples might include bar districts; prostitution areas; drug markets; large shopping malls, particularly those near major public transit exchanges; large, insecure parking lots in business or commercial areas. Crimes in such locations are often committed by outsiders to the area. Strongly motivated offenders will travel relatively long distances in search of a target. The attraction is created by an ecological label, often supplemented by the intending offender's personal past history, establishing that location as a known place to go for that kind of crime. As studies have shown, such crime attracting areas can also generate other types of crime that are auxiliary or serendipitous by-products of the intending offender having been attracted to the area by the prospect of committing the primary crime" (Brantingham and Brantingham, 1995, p8).

Since offenders usually commit crime in areas or places they frequent, they get to know about the criminal opportunities in those places as opposed to other places which they don't frequent. They only become aware of subset of opportunities available in a given place (Eck & Weisburd, 2015). For instance, Manhattan's Chinatown saw an increase in the number of hate crimes following the pandemic. Based on the crime pattern theory, offenders frequented Manhattan's Chinatown and became aware of the opportunities available to them to commit crime, particularly hate crime, for the purposes of our study. Locations that attract the attention of offenders due to the presence of criminal opportunities face an elevated risk of being targeted for criminal activity (Brantingham and Brantingham. 1993). The concept of place is central to crime pattern theory, as environmental and situational factors influence criminal behavior.

The study's hypothesis that anti-Asian hate crimes are disproportionately clustered in and around Manhattan's Chinatown which makes it a 'crime attractor' aligns with the idea that this neighborhood presents an environment where offenders perceive a high likelihood of encountering individuals from the targeted group—Asian Americans—making them suitable targets in the eyes of those with prejudicial motives. Chinatown's dense pedestrian traffic, vibrant commercial activity, and cultural visibility contribute to its role as a predictable and accessible location. These characteristics increase the area's exposure and make it more likely to be recognized by offenders as a space where opportunities for hate crimes are concentrated. The high visibility of Asian individuals in public and commercial spaces may further heighten this perception. At the same time, there may be perceived or actual limitations in guardianship—whether in the form of under-policing, language barriers in accessing services, or community members' reluctance to report incidents due to distrust or fear—which can reduce the deterrence effect and increase the vulnerability of potential victims.

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By grounding the observed spatial patterns in these theoretical dimensions and, where available, incorporating supporting data- such as pedestrian counts, business density, or historical crime reports—the classification of Chinatown as a crime attractor moves from a descriptive label to an analytically supported conclusion. This alignment with environmental criminology not only clarifies the mechanisms that may explain spatial concentrations of hate crime but also enhances the study's theoretical rigor and practical relevance for urban policy and community safety strategies. Crime pattern theory, developed by Brantingham and Brantingham, emphasizes that crimes do not occur randomly but are patterned around the routine activities and awareness spaces of offenders (Brantingham and Brantingham. 1993). These spaces—formed through offenders' daily movements between home, work, and leisure—guide where they seek out criminal opportunities. A crime attractor is a place that becomes known for providing such opportunities, thereby pulling offenders into the area even if it is outside their regular activity space (Brantingham and Brantingham. 1993).

According to routine activity theory, the absence of capable guardians or effective place managers increases the likelihood of crime, as such conditions create opportunities for offenders. Additionally, certain locations may attract offenders due to the presence of suitable targets, making them more vulnerable to criminal activity (Eck & Weisburd, 2015). In the context of anti-Asian hate crimes, Chinatown functions as a crime attractor, drawing motivated offenders who perceive these locations as opportunities for targeted victimization.

Based on the literature review, this study examines two hypotheses: (1) that anti-Asian hate crime was more concentrated in 2020 than in 2019 in New York City, and (2) that anti-Asian hate crime was most concentrated in and around Manhattan's Chinatown, potentially indicating that Chinatown functions as a crime attractor.

2. Background on COVID-19 in the United States

Coronavirus, known as COVID-19 is an infectious disease that spreads primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes. It is was first emerged in Wuhan, China in December of 2019. It began to spread rapidly to the rest of the world. The first case of COVID-19 in the United States was reported in January 2020. The COVID-19 pandemic caused hostility towards Asian Americans, specifically, towards Chinese immigrants because the COVID-19 was spread out to the rest of the world from China as the first case of COVID-19 came from Wuhan, China and because of that people of Asian descent were considered solely responsible for the spread of COVID-19 to the rest of the world. A survey conducted by the Pew Research Center among English-speaking Asian

adults in the United States found that one-third of Asian Americans reported knowing another Asian individual who had been threatened or attacked since the onset of the COVID-19 pandemic.

Additionally, the findings revealed that four in ten U.S.-born Asian Americans were aware of an Asian person who had experienced such incidents during this period (Ruiz, Im, & Tian, 2023). COVID-19 has also been tried to be labelled as "Chinese Flu" or "Kung Flu". This label was also instigated by Donald Trump's (former President of the United States) tweet in March 2020, calling it the "Chinese Virus" inciting racism towards Chinese and Asian Americans.

3. History of Anti-Asian Hate Crime in the United States

The **Hate Crime Statistic Act (28 U.S.C. § 534)** defines a hate crime as **"crimes that manifest evidence of prejudice based on race, gender and gender identity, religion, disability, sexual orientation, or ethnicity."** The history of anti-Asian hate crime starts from the 'Page Act of 1875' which prohibited entry of Chinese women in the United States and after a few years, of Chinese men as well because they were considered "undesirable" (Abrams, 2005). Because of this law, they started getting targeted, especially Chinese women as they were seen as prostitutes. According to Chotiner (2021) "s**ome *did* come in as prostitutes, but it fed this whole idea of the sexualized Asian woman. They were seen as bearers of disease, as were all Asian immigrants."**

According to Gover et. al (2020) Asian Americans have gone through violent attacks motivated by hate crime during the creation of Chinatowns in the late 1800s (Chen, 2000). They were also subject to being stereotyped because of the racist ideology of the yellow peril in the late 19th century (Mudambi, 2019), and faced racial slurs and physical attacks motivated by xenophobia since the time they came to the United States up until the present-day scenario.

4. Anti-Asian Hate Crime During COVID-19

There has been a sharp increase in the number of anti-Asian hate crimes across the United States. Since the beginning of COVID-19 pandemic in 2020, there have been numerous cases of anti-Asian hate crimes. New York City has seen the largest increase (149%) in the number of reported anti-Asian hate crime (Stop AAPI Hate National Report, 2021; Anti-Asian Prejudice March 2020, Center for the Study of Hate & Extremism).

According to a study by Vachuska (2020) on the initial effects of the coronavirus pandemic on racial prejudice in the United States found strong correlations between interest in coronavirus and bigotry towards Asian and Hispanic Americans through search rates for racial slurs during

the first half the year 2020. She also found that in the beginning of February, 2020, the levels of interest in coronavirus were low but grew rapidly in March which was the time when there was an increase in the number of COVID-19 cases in the United States.

According to South China Morning Post (2021) a 35-year-old man, Juvian Rodriguez was arrested in New York City after making anti-Asian remark to an undercover policeman. Tessler, Choi and Kao (2020) posit that it is relatively easy for people to treat Chinese or Asian American as carriers of disease and foreign because they have been viewed as "perpetually foreign" historically.

Many individuals in the United States, over 30 percent have blamed Asians for the COVID-19 pandemic and "see the virus as foreign and condemn phenotypically Asian bodies as the spreaders of the virus" (Tessler, Choi & Kao, 2020).

5. Impact of Anti-Asian Hate Crime on Asian Americans

"Disease does not differentiate among people based on skin color or national origin, yet many Asian Americans have suffered from discrimination and hatred during the COVID-19 pandemic. It does not matter if the person is from China, of Chinese origin, or simply looks Asian – the perpetrators of this violence see all of these bodies as foreign and threatening." (Tessler, Choi & Kao, 2020). The anxiety among American Asians has increased during uncertain times wherein they are fearful of even running everyday errands as they fear for their safety and life (Tavernise & Oppel Jr., 2020). Asian Americans are known for under reporting hate crime (Allport, 1993) as they lack an understanding of how the legal system works and the process of reporting hate crimes (Tessler, Choi & Kao, 2020).

There has been a 149% increase in hate crime against Asian Americans in 2020 than the previous year with over 4,000 hate incidents reported since the pandemic began (Stop AAPI Hate National Report, 2021; Anti-Asian Prejudice March 2020, Center for the Study of Hate & Extremism).

A study by Barnes and Ephross (1994) examined how victims of hate violence react emotionally and behaviorally to hate violence. The research revealed that over half of the participants had been subjected to repeated incidents rather than just one. The most commonly reported emotional reactions were anger, fear, and sadness. Around one-third of the victims responded by taking actions such as relocating or acquiring a firearm. Overall, the reactions of hate crime victims were comparable to those seen in individuals affected by other forms of personal crime.

In a study by Lee and Waters (2021) on Asians and Asian Americans' experiences of racial

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discrimination during the COVID-19 pandemic: Impacts on health outcomes and the buffering role of social support found that "nearly 30% of the participants reported an increase in discrimination since the pandemic began, and over 40% reported an increase in anxiety, depressive symptoms, and sleep difficulties." Their results indicated that "Asians have experienced elevated racial discrimination during the COVID-19 pandemic, including hate crimes, microaggressions, and vicarious discrimination, and these experiences are associated with poorer self-reported mental and physical health".

According to a study conducted by Lantz et al. (2023) investigating the impact of COVID-19 on xenophobic attitudes toward Asians by analyzing individuals' perceived risk of the virus, exposure to COVID-19-related information, and support for former President Donald Trump, whose political rhetoric reinforced anti-Asian prejudices. The study found that greater fear of the disease and support for Trump were linked to increased xenophobia, whereas higher exposure to COVID-19 information was associated with reduced prejudicial attitudes (Lim, Lee, & Kim, 2023).

A study exploring the intersection of culture and the COVID-19 pandemic highlighted the rise in xenophobic incidents worldwide, pointing to the 'fear' of the unfamiliar as a key factor fueling xenophobia. These incidents—ranging from hateful language and verbal abuse to physical attacks—underscore the urgent need for effective, informed communication strategies in pandemic response efforts (Noel, 2020). Such strategies are essential to address existing inequalities and reduce the marginalization of vulnerable groups (Lee, Rogers, & Braunack-Mayer, 2008).

B. Methodology

In the present study, a quantitative analysis was used to understand the nature of the distribution of anti-Asian hate crime before and during the COVID-19 pandemic in the New York City. For this purpose, GIS (Geographic Information System) was used as a tool for geo-visualization (i.e., creating of maps) of locations where anti-Asian hate crime occurred across the New York City counties. The dependent variable for this study is the distribution of anti-Asian hate crime across New York City.

C. Research Questions

Given the current literature on increasing hate crimes against Asian Americans because of the pandemic, our primary aim is to understand the distribution of anti-Asian hate crime before COVID-19 and during COVID-19 i.e., in the year 2019 and 2020. In general, we developed two hypotheses. One of them assumes that anti-Asian hate crime is more concentrated in the

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year 2020 than in 2019 in New York City. Another one assumes that anti-Asian hate crime is most concentrated in and around Manhattan's Chinatown in New York City, wherein Chinatown might act as a crime attractor.

D. Data Collection

The data for the present study was collected from the New York Police Department (NYPD) open data portal. Two data sets (excel files) were collected for the year 2019 and 2020, respectively. The data consisted of the reported number of anti-Asian hate crime in the New York City counties.

For the purpose of using GIS to present the data spatially in order to examine the nature of the distribution of anti-Asian hate crime, New York City counties shapefile was taken from the Berkeley library geodata which was used as a base map for the distribution of anti-Asian hate crime. The police precinct shapefile was taken from the ArcGIS Hub open data portal. And the shapefile for the NYPD sectors was taken from the NYC (New York City) open data portal. An additional excel file was created to show the number of incidents of anti-Asian hate crime in New York City. Another excel file containing the population of Asian Americans in the five counties of New York City was taken from the United States census bureau open data portal. And data for population of White Americans for Kings and Queens county was taken from the US census bureau portal too.

Tools/Instruments Used

The tool used for the present study is from ESRI-ArcMap GIS. Stoe (2003) define GIS (as cited in Caplan & Moreto, 2012, p.4), "as a geographic information system (GIS) which is a computer software application for managing, editing, analyzing and displaying data which are spatially referenced to the Earth. Spatial data can be represented as individual layers, displayed as separate entities, or be combined with other layers to be displayed together."

Subsequently, various functions of ArcMap were utilized to present the data spatially. The use of symbology in various forms, join and relates (tabular join), geoprocessing tools like dissolve and merge helped in presenting the data spatially in a comprehensive manner.

II. DATA ANALYSIS

For the analysis of the data, two datasets (excel files) containing the number of anti-Asian hate crime in New York City was collected from the NYPD open data portal. Then, New York City counties shapefile was added as a base layer in ArcMap GIS. With the help of the 'Label feature', counties were labeled on the map and a final map was produced with all the

cartographic elements (Figure 1). After adding the base layer, NYPD sectors shapefile and NYC police precincts shapefile was added onto the base layer. The excel file containing the number of anti-Asian hate crime was added to GIS as a csv file. Before adding the excel file, the data in the excel file was cleaned by removing the extraneous information, rearranging the data according to the year in a hierarchy, adding "_" for all the column headings, adding short forms of the borough names instead of the full form in the "patrol_bor" column.

Furthermore, NYPD sectors shapefile and NYC police precincts shapefile were dissolved together to avoid the problem of the data from the excel file to get replicated in the new attribute table after performing a tabular join because the NYPD sectors shapefile contained data at the sector level which led to the data from the excel file to get replicated at the sector level instead of at the precinct level which was what we wanted in order to perform a tabular join. Therefore, after dissolving the two shapefiles, the excel file was joined to create a new dissolved shapefile through a tabular join with 'precinct' being the common denominator for the join. The new dissolved shapefile was used to show the distribution of anti-Asian hate crime in the year 2019 and 2020 across the New York city counties with the use of symbology (categories → unique values). Finally, a new excel file containing the number of anti-Asian hate crime incidents was added to GIS and a tabular join was performed with the NYC police precinct shapefile to show the aniti-Asian hate crime incidents. A map with all the cartographic elements were created showing the number of anti-Asian hate crime incidents across New York City counties before the COVID-19 pandemic in 2019 and during the COVID-19 pandemic in 2020.

In order to understand the concentration of hate crime against Asian Americans, a map was created showing the population of Asian Americans across the New York City counties (Figure 3). In the excel file, the unnecessary information was deleted and data was arranged accordingly. The excel file in csv format was added to GIS and a tabular join was performed with the New York City Counties shapefile with the "name" being the common denominator for the join. Another map was created showing the White American population of the Kings and Queens county through a tabular join of the excel file containing the data for the White American population with the base map of the New York City counties. Later, all the maps were exported as jpeg files.

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Figure 1

Map of Counties of New York City

Results

The results of our study confirm our initial hypothesis that anti-Asian hate crime is more concentrated in the year 2020 than in 2019 across New York City. There was a 650% increase in hate crime against Asian Americans from 2019 to 2020. Racism and xenophobia against Chinese immigrants, and, in general, against Asian Americans existed prior to the start of the COVID-19 pandemic in January 2020 in the United States, but the advent of COVID-19 exacerbated the issue.

As evident from Figure 2, we can see that before COVID-19 pandemic in 2019, there were

only four reported hate crimes against Asian Americans in New York City, which were limited only to the Kings county. Whereas, during COVID-19 pandemic in 2020, the number of reported hate crimes against Asian Americans jumped to 30 with the greatest number of incidents being concentrated around the New York county (Manhattan borough).

This is in line with our studies from the literature review. There has been a 149% increase in hate crime against Asian Americans in 2020, in the United States than the previous year, with over 4,000 hate incidents reported since the pandemic began (Stop AAPI Hate National Report, 2021; Anti-Asian Prejudice March 2020, Center for the Study of Hate & Extremism).

The results also confirm our second hypothesis, which is that anti-Asian hate crime is most concentrated in and around Manhattan's Chinatown in New York City, wherein Chinatown might act as a crime attractor. There are nine Chinatown neighborhoods in New York City with Manhattan's Chinatown being one of the oldest Chinese ethnic enclaves (Nazario, 2016) and remains the most popular one attracting Chinese diaspora, and it is also the headquarters of several publications based both in the U.S. and China that are geared to overseas Chinese. There are 30 hate crime incidents against Asian Americans and out of which 20 came from the New York county alone (Figure 2). Manhattan's Chinatown is in New York county (Manhattan borough).

Queens county followed by the Kings county has the largest population of Asian Americans, and in particular, Chinese population out of all the municipalities in the United States (Figure 3). All the reported hate crime incidents in 2019 came from Kings county alone (Figure 2), which can be attributed to the fact that since a greater number of Asian-Americans and Chinese people live in Queens and Kings county, it made it easier for the motivated offender to find victims of Asian descent in the two counties. The boroughs of Queens (Queens County) and Brooklyn (Kings county) encompass the largest Chinese populations out of all the municipalities in the United States.

White Americans commit most of the crime against Asian Americans as clear from the NYPD data. Also, the ratio of the population of White Americans to Asian Americans for the Kings county is 3:1, whereas, for Queens county, it is 1:1 which shows that Queens county has the largest population of Asian Americans as compared to Kings county but since a majority of the hate crimes against Asian Americans is by White Americans; therefore, Kings county has more White Americans for every one Asian American (see Figure 5) and it could be one of the reason hate crime against Asian Americans for 2019 came only from the Kings county.

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Figure 2

Map of New York City Counties Showing the Distribution of Anti-Asian Hate Crime Incidents Before (2019) and During COVID-19 (2020)

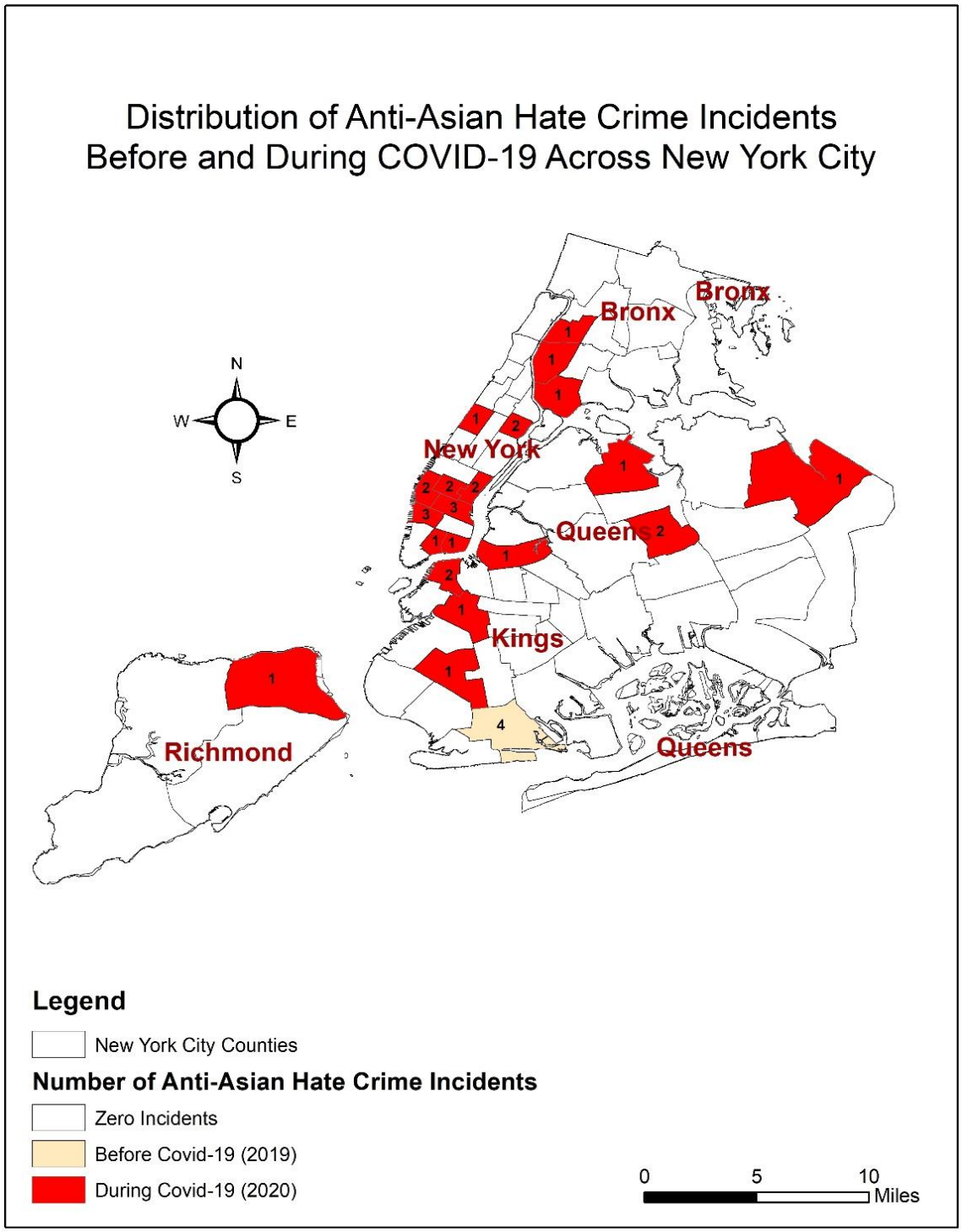


Figure 3

Map Showing the Population of Asian-Americans Across New York City Counties (2019)

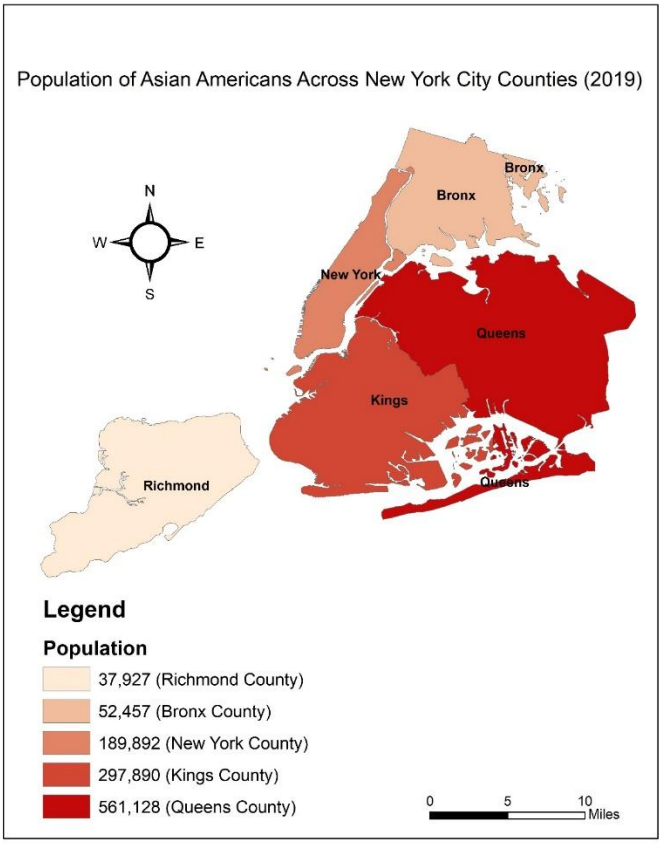
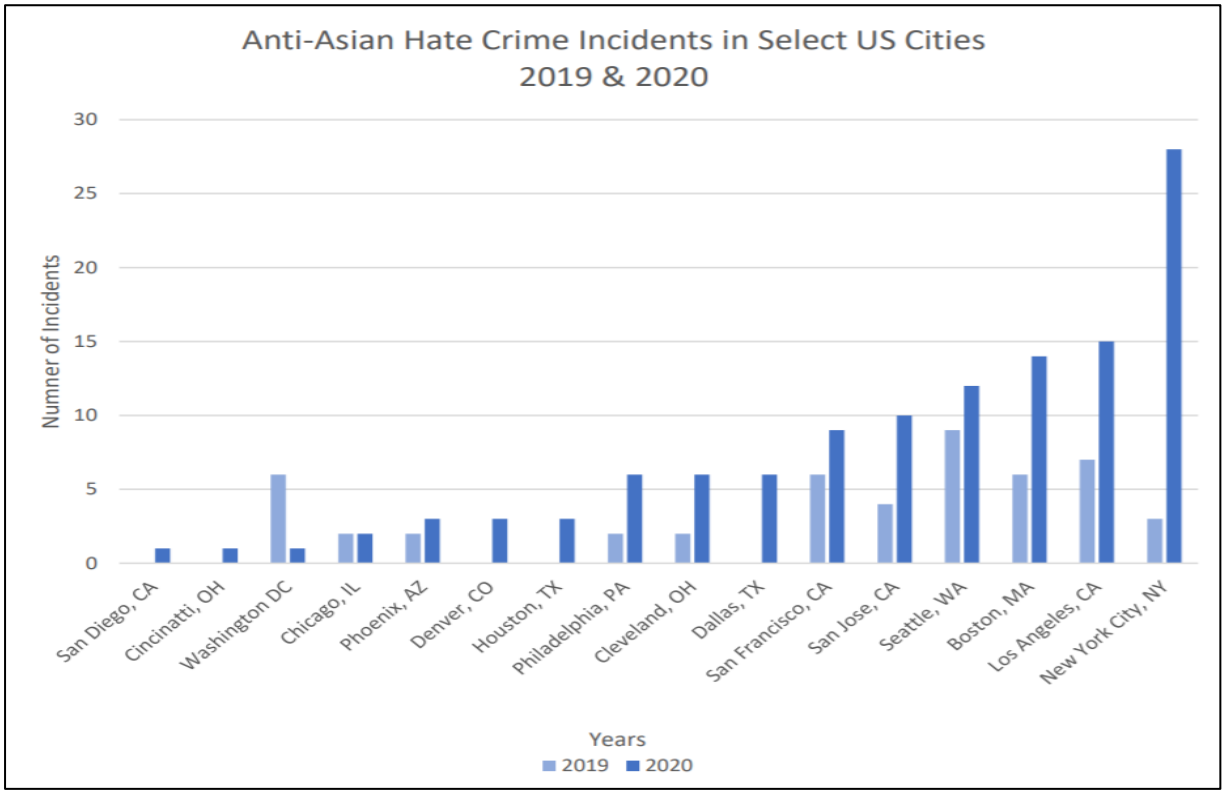


Figure 4



Note. This histogram was produced by the University of California, San Bernardino (CSUSB) drawn from data by policing agencies explaining the Anti-Asian hate crime incidents in 16 of United States cities. From "Fact Sheet: Anti-Asian Prejudice March 2021 Center for the Study of Hate and Extremism", by Centre for the Study of Hate & Extremism, CSUSB, 2021, p.2. Copyright 2021 by Center for the Study of Hate and Extremism, CSUSB.

Figure 5

Map of the Population of White Americans in New York City Counties (2019)

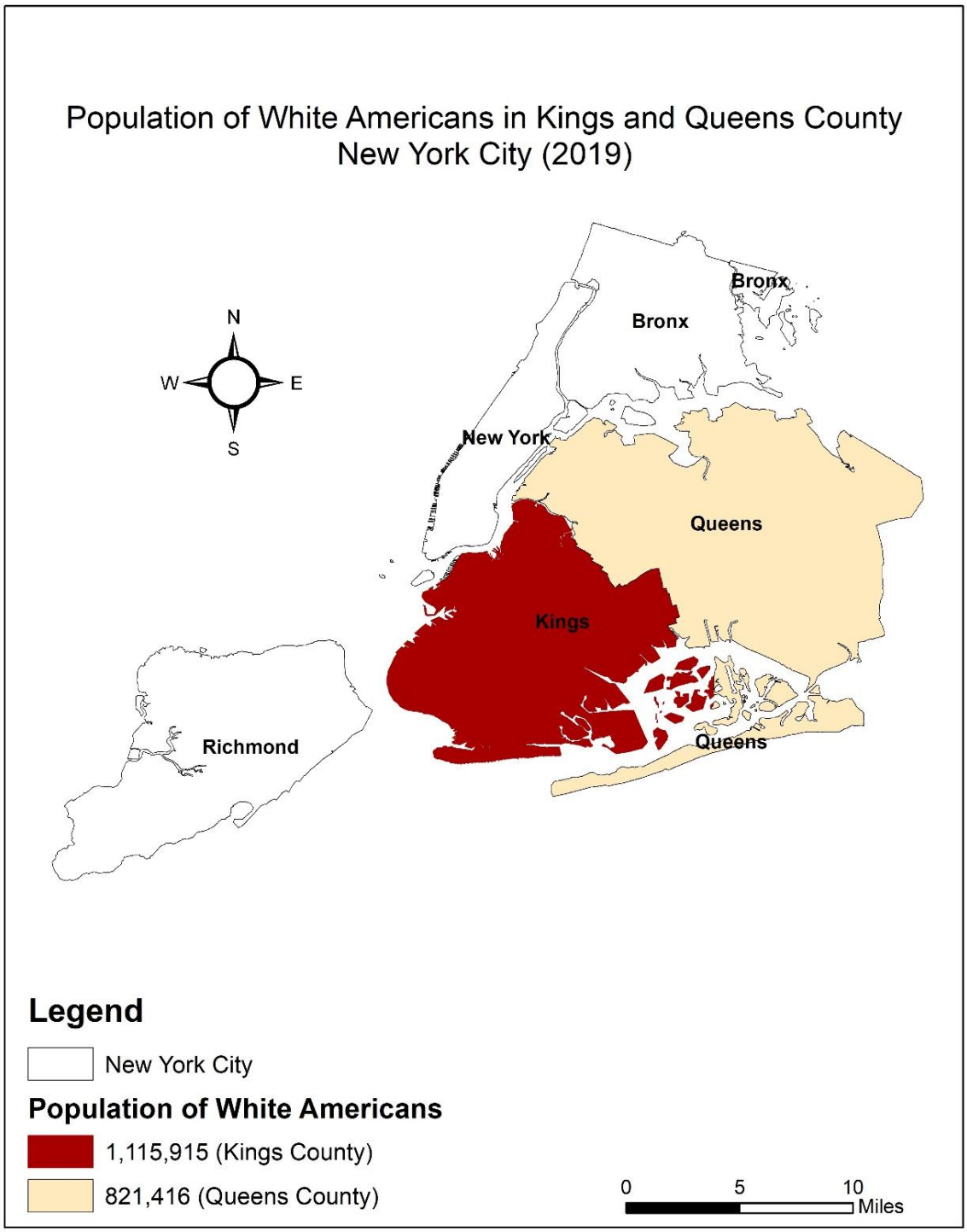
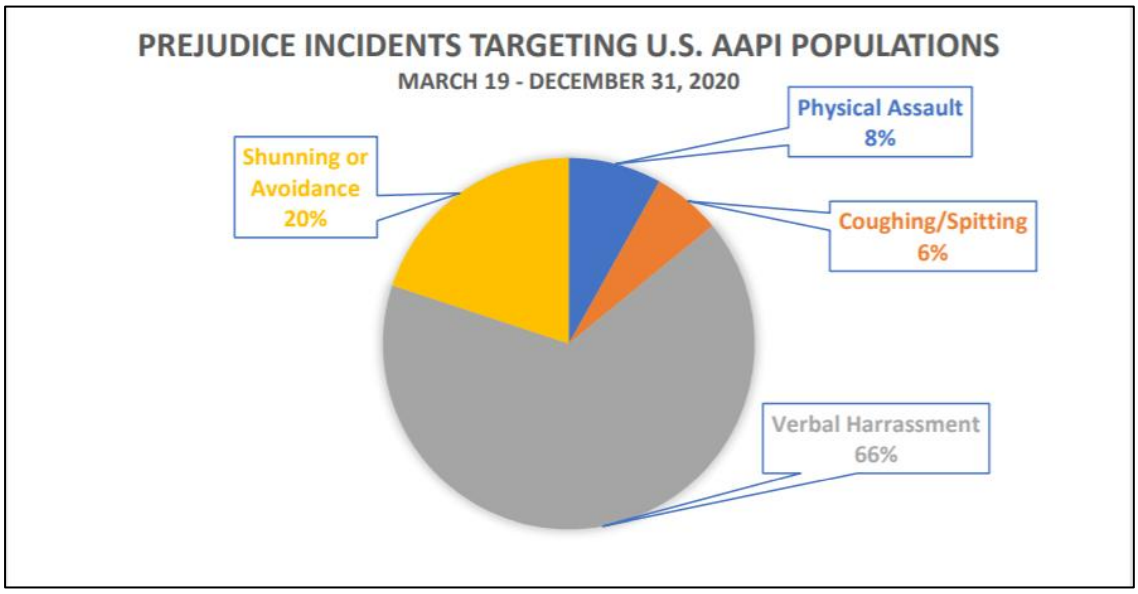


Figure 6

STOP AAPI Hate: Anti-Asian Hate Victimization Reporting Portal



Note. This pie chart was produced by the STOP AAPI Hate organization which was included in a study done by the University of California, San Bernardino (CSUSB), Center for the Study of Hate & Extremism. From "Fact Sheet: Anti-Asian Prejudice March 2021 Center for the Study of Hate and Extremism", by Centre for the Study of Hate & Extremism, CSUSB, 2021, p.7. Copyright 2021 by Center for the Study of Hate and Extremism, CSUSB.

III. Discussion

According to the Census Bureau (2017) data, New York City has the largest foreign-born population than any other city in the world. Asian-Americans make up 11.8% of New York City's population. Out of 976,807 Asian Americans, 445,145 were of Chinese descent, representing 5.4% of the city's population. New York City has the greatest number of Asian Americans than any other city in the United States.

According to a study by the California State University, San Bernardino (2021) New York City has had the largest increase by 145% in the number of reported hate crime against Asian Americans among other metropolitan cities of the United States (Figure 4). Our primary goal in this study has been to examine the number of anti-Asian hate crime incidents before the COVID-19 pandemic in 2019 and during the COVID-19 pandemic in 2020 across New York City counties. The data was presented spatially with the use of ArcMap GIS to spatially understand the distribution of the incidents of hate crime against Asian Americans in New York City. The results of our study were consistent with both the hypotheses developed during the start of the research.

The first hypothesis assumed that anti-Asian hate crime is more concentrated in the year 2020 than in 2019, in New York City. By presenting the hate crime data against Asian Americans spatially, we were better able to understand the patterns and relationships between the number of incidents of anti-Asian hate crime during the COVID-19 pandemic in 2020 across New York City counties as compared to before the COVID-19 pandemic in 2019.

As evident from Figure 2, there were only four reported anti-Asian hate crime limited only to the Kings County in New York City, whereas in 2020 during COVID-19, there was a surge in the number of incidents of reported hate crime against Asian Americans which was thirty. One reason for the increase in anti-Asian hate crime in 2020 could be attributed to people's preconceived notions about Asian Americans related to racism and xenophobia. Subsequently, the perceived notions grew because of the advent of COVID-19 pandemic and gave people an excuse to blame the spread of coronavirus onto Asian Americans. This was because coronavirus first emerged in Wuhan, China and people all over the world, specifically in the United States started correlating COVID-19 with people of Chinese or in general with people of East Asian descent. Many news channels called the COVID-19 as the "Wuhan Virus", or "Chinese Virus", and Donald Trump's administration also made use of similar terms (Tessler, Choi & Kao, 2020).

One instance of this can be seen in Moore and Bensimon's study (as cited in Gover, Harper & Langton, 2020) when a man spat on an Asian American's face in a Brooklyn subway while yelling at him, "You (expletive) Chinese spreading the coronavirus!"

When Donald Trump called COVID-19 a "Chinese Virus" in a tweet, it in some ways contributed to the hate crime against Asian Americans. When a leader makes such an inflammatory remark, it will have repercussions among the masses. The theory of dominance hierarchies postulates that "people are prone to follow the leader with the most power to control. There is a desire for protection and the need to retain the privileges that they currently enjoy (Kistnasamy, 2016).

Strong correlations were found between interest in coronavirus and bigotry towards Asian and Hispanic Americans through search rates for racial slurs during the first half the year 2020. Also, the levels of interest in coronavirus were low earlier in 2019 but grew rapidly in March 2020 which was the time when there was an increase in the number of COVID-19 cases in the United States (Vachuska, 2020). Campbell and Ellerbeck (2020) reported that over 30 percent of Americans blamed Asian Americans for the spread of COVID-19 and see coronavirus "as foreign and condemn phenotypically Asian bodies as the spreaders of the virus" (Tessler,

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Choi & Kao, 2020).

It is believed that the number of incidents is much higher than the reported cases of hate crimes, as it is difficult to charge someone with a hate crime because there has to be enough evidence to prove a racist motive. For instance, in February 2021, a Chinese man was stabbed in his back as he was walking home near Manhattan's Chinatown. The accused was not charged with a hate crime because of lack of evidence to prove a racist motive, rather he was charged with attempted murder (Hong & Bromwich, 2021).

This is also in line with our second hypothesis, which assumes that anti-Asian hate crime is most concentrated in and around Manhattan's Chinatown in New York City, wherein Chinatown might act as a crime attractor. Chinatown in the above case acted as a crime attractor, as many Chinese and Asian Americans have their businesses in Chinatown and for many Asians; it is their place of work which makes it easier for the motivated offender to find victims as the greatest number of reported hate crimes against Asian Americans were clustered around New York county (Manhattan's borough) where Manhattan's Chinatown is located (see Figure 2).

By looking at the population of Asian Americans across New York City counties (Figure 3), we can see that Queens followed by Kings has the largest population of Asian Americans. Before the COVID-19 pandemic in 2019, anti-Asian hate crime was limited only to the Kings county (Figure 2) which suggests that since Kings county has the second largest population of Asian Americans, it made it easier for the offender to attack victims as supported by the crime pattern theory (Brantingham and Brantingham, 1982) which states that crime is not randomly distributed and why certain commit crime in certain areas.

Because a majority of hate crimes against Asian Americans is by White Americans because of white supremacy and since Kings county has a larger population of White Americans than the Queens county (Figure 5), it can be the reason why the number of reported hate crimes against Asian Americans in 2019 came from the Kings county alone.

Also, the ratio in of White Americans to Asian Americans is 3:1 for the Kings county whereas, for Queens county, the ratio of White Americans to Asian Americans is approximately 1:1. The executive director of advocacy group for Asian Americans Advancing Justice-Atlanta righthly puts it that, "white supremacy is literally killing us" (The New Indian Express, 2021).

Crime pattern theory (Brantingham and Brantingham, 1982) and routine activity theory (Cohen & Felson, 1979) is also able to explain why most of the hate crimes against Asian

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Americans during COVID-19 in 2020 were clustered around New York county as out of 30 incidents of anti-Asian hate crime reported in 2020, 20 came from New York county alone. Since Manhattan's Chinatown is the oldest Chinese ethnic enclaves (Nazario, 2016) and remains the most popular one attracting Chinese diaspora and as the headquarters of a number of publications based both in the U.S. and China that are geared to overseas Chinese located in the New York county, it acted as a crime attractor for motivated offenders to commit crime. "Crime attractors are those places to which strongly motivated offenders are attracted due to the known opportunities for particular types of crime" (Brantingham and Brantingham, 1995).

Another reason why there was a higher concentration of crime in the New York county is because although New York county being small in land area, it has a vast population. It also has two of the most popular Chinatowns, which increases the probability of a motivated offender to find victims of Asian descent.

Since Manhattan (New York county) is home to the world's two largest stock exchanges, multinational media conglomerates, three of the world's 10 most-visited tourist attractions and various top colleges and universities of the United States, it makes New York county (Manhattan) a perfect place for motivated offenders to find victims of Asian descent as it intersects with the activity space of the victim.

Hate crime against Asian Americans consists of various types like physical assault, verbal harassment which is the most common, coughing, spitting, etc. (Figure 6). Given the rising number of hate crime incidents against Asian Americans, the Senate in April 2021 approved a bill to limit the rise in hate crimes against Asian Americans in the United States.

Not to say that the rising hate crime against Asian Americans not had an impact on their mental health. According to a study by Gee. et al (2007) racial discrimination was associated with an increased risk of mental disorders among Asian Americans across the United States.

Another study by Campbell and Ellerbeck (as cited in Gover, Harper & Langton, 2020) found that "since the emergence of COVID-19, there has been a 22% total increase in people accessing the Mental Health America anxiety screening tool; among users, the increase in Asian American respondents has been 39%". Asian Americans are fearful of even stepping out of their house be it for running everyday errands as they fear for their safety, thereby increasing their anxiety (Tavernise & Oppel Jr., 2020). It is taking a toll on their mental health. "The link between COVID-19 and hate crimes and bias incidents against Asian Americans is indicative of the widespread racial sentiments which continue to be prominent in American society" (Tessler, Choi & Kao, 2020, p.642).

A limitation of our current study which the future researchers should focus on is to include the data for reported hate crime against Asian Americans from all the major cities of the United States as it will help in understanding the extent of hate crime at a broader scale and in a more comprehensive manner. Another would be to include unreported hate crimes against Asian Americans as the current study only looked at the reported anti-Asian hate crime data from the NYPD open data portal. Many of anti-Asians and other racially motivated hate crimes go unreported or not reported at all because of lack of knowledge of the legal system, the procedure of reporting a hate crime or the fact that there isn't enough evidence of a racial motive to charge the accused with a hate crime.

The study identifies a striking 650% increase in reported anti-Asian hate crime incidents in New York City, rising from 4 cases in 2019 to 30 in 2020; however, this increase should be carefully contextualized. While the relative change is substantial, the absolute numbers remain small, which may limit the generalizability of the findings and highlights a limitation of NYPD-reported data. This limitation suggests the need for cautious interpretation and, to understand it further, the application of statistical tests or rate-based comparisons (e.g., incidents per 100,000 population) can be used to provide a more meaningful measure of change over time and improve the robustness of the analysis.

The data from AAPI (Asian American Pacific Islander) organization provides the data for the same. Future researches can also include the component of how preconceived cultural notions about Asian Americans that has led to xenophobia and racism among people influenced the rise in anti-Asian hate crimes in the United States during the COVID-19 pandemic. That said, the study increases our understanding of how COVID-19 pandemic led to an increase in anti-Asian hate crime and how crime was distributed among the New York Counties before and during the COVID-19 pandemic.

In discussing the implications of anti-Asian hate crimes, it is important to recognize that the impact of such incidents extends far beyond the individual victims. Hate crimes are not only acts of interpersonal violence but also symbolic attacks on entire communities. As noted in existing literature, these acts "send a public message that the victim's membership group as a whole is unsafe," instilling fear and anxiety in those who identify with the targeted group. In the context of this study, the concentration of anti-Asian hate crimes in areas like Manhattan's Chinatown may intensify feelings of vulnerability among community members, reinforcing a sense of being targeted based on ethnicity or national origin.

These crimes can have profound psychological and social consequences, including heightened

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fear, trauma, mistrust of public institutions, and reduced feelings of safety in public spaces. Community members may alter their daily routines, avoid certain areas, or become less willing to engage in civic life. This erosion of social trust and collective security undermines not just individual well-being but also the cohesion of entire neighborhoods.

Initiatives such as culturally competent mental health services, trauma-informed counseling, community solidarity events, and public education campaigns can play a vital role in healing and rebuilding resilience. These supports help restore a sense of safety and solidarity within affected communities and demonstrate a collective rejection of hate.

Future research would benefit from the inclusion of community perspectives, either through participatory action research or the integration of community-generated data. Engaging residents—particularly those from directly impacted areas such as Manhattan's Chinatown—could offer valuable contextual insights that deepen the understanding of spatial patterns in anti-Asian hate crime. Although such approaches were beyond the scope of this study, acknowledging the role of community involvement underscores the potential for more nuanced interpretations and supports the development of inclusive, community-informed policy responses.

IV. CONCLUSION

The present study empirically showed the difference between hate crimes against Asian Americans before the start of the COVID-19 pandemic and during the COVID-19 pandemic as there was an increase (650%) in hate crime against Asian Americans in New York City from 2019 to 2020 when COVID-19 pandemic was at its peak in the United States. Also, Manhattan's Chinatown did act as a crime attractor as most of the anti-Asian hate crime incidents reported in New York City during the COVID-19 pandemic came from New York county alone. The study was able to support the main assumptions of the study. The increase in hate crimes against Asian Americans during the COVID-19 pandemic highlights how still Asians are viewed in the United States as "foreign". Asians also have to go through racial victimization and xenophobic attacks at a time when the entire world is struggling to survive through the COVID-19 pandemic. It is important to understand that virus does not discriminate based on race, class or religion. "COVID-19 is a public health matter, not a racial one" (Jeung et al., 2020).

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