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Racial Hate Crime and COVID-19: A Multinomial Choice Study in the US

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Abstract
During the COVID-19 pandemic, a dual shock to the economy and health system, the sentiments of uncertainty and insecurity have exacerbated the racial inequalities in the United States - contributing to the rise of antagonistic racial tension. Using hate crime data published by the Federal Bureau of Investigation (FBI), this study implemented a Multinomial Logistic Regression to analyse the marginal probability of different races committing hate crimes. It is found that all races except for African Americans tend to target African Americans as victims of a racial hate crime. This study reveals the racial inequality and discrimination that existed in the United States, providing policymakers and public activists with evidence and direction to make efforts.

Keywords: COVID-19, Multinomial choice, Racial hate crime, Stigmatisation, Inequalities

1. Introduction

In December 2019, a novel coronavirus disease, COVID-19, was first found in Wuhan, China, and within weeks it swiftly swept over the rest of the world. As people adapt to this unprecedented "twin pandemic" of both economic and public health shock, there are rising fears regarding the uncertainty of COVID-19 (Anand, 2020, p. 5). Studies on similar sentiments of uncertainty in historical shocks such as national wars and terrorism are shown to be reflected in the individual and government responses - which exacerbate the horizontal and vertical power imbalances within the society (Adefuye et al., 2020; Bar-Tal & Labin, 2001). For COVID-19, the suspected geographic origins of the virus were conflated with Asian ethnicity so that all people sharing the race of the people at the geographic origin of the virus were at risk of social exclusion. Multiple studies have also indicated the social exclusion resulting from COVID-19 has punitively obstructed health-seeking behavior for all ethnic minorities including African Americans and led to wider social othering between races (e.g., Tai et al., 2020; Romano et al., 2021; Goldberg, 2020).

In this paper, we examine how COVID-19 affects hate crime rates against different ethnic groups in the United States. Using data from FBI Hate Crime Statistics, we apply a multinomial logistic regression aiming to understand the racial bias motivation behind hate crimes.

2. Literature Review

Hate crime is the physical or verbal aggression directed at a group with particular physical or social attributes aiming to dethrone their individual identity and social acceptance (Goffman, 2018). Past studies on hate crimes targeting national, sexual, racial, religious, or other social attributes have found significant stigmatizing perceptions and physical aggression (e.g., Laverick and Joyce, 2019; Walfield et al., 2017; Jones, 2020). These sentiments of stigmatization stem from some form of injustice that is not natural but the combination of toxic social, political, and community arrangements (Marmot et al., 2008, Marmot, 2017).

The present literature has discussed COVID-19 hate crimes widely against infected patients (E.g., Sun et al., 2021) and healthcare workers (E.g., Abdelhafiz & Alorabi, 2020; Villa et al., 2020). Due to racial sensitivity, quantitative studies of racial aggression commonly used indirect evidence without public access to administrative datasets (Goldberg, 2020). For COVID-19, internet search queries, for instance, are an indirect proxy to measure the intensity of Sino-phobia, which has increased dramatically over the period (E.g., Budhwani & Sun, 2020; Li et al., 2020). Using social media data, Williams (2021) studied the racial sentiments on Twitter following Donald Trump's tweet that labeled COVID-19 as the "Chinese Virus". He has not only found a significant increase in the online hate against Asian Americans but also a parallel trend in the physical world, where they experienced significantly more physical harassment since Trump posted the tweet. These practices are significantly associated with victims' perceived stigmatization and a higher incidence of mental distress (Xin et al., 2020). Using data from a large-scale mental health survey, Zhou et al. (2021) have found East Asians and Pacific islanders have faced heavy mental burdens from such heightened racial stigma from the discriminatory public discourses toward Asians. In the UK, Gray and Hansen (2020) used London Metropolitan Police data to carry out a probit regression that has found that COVID-19 is statistically significantly related to a higher probability of Chinese being hate crime victims.

Beyond Asians, previously vulnerable populations also faced social exclusions and racial inequalities during the COVID-19 pandemic in the United States. African Americans have a long history of marginalization, discrimination, and racial trauma resulting from a "hierarchy of citizenship" (Wakeel & Njoku, 2021). The historical and institutional discrimination generally breeds medical mistrust and scepticism of diagnostic and treatment messages among black communities, which has caused a surge in COVID-19 infection, hospitalization, and death rates among African Americans (Romano, 2021). Additionally, the poverty concentration among African American communities makes them less likely than other racial groups to access health insurance (Bogart and Thorburn, 2005; Bailey et al., 2020). The shortage of medical resources and lack of testing further increases the chance of disease transmission within the community, reinforcing the pre-existing stigma of viewing these minority groups as risky and virus-laden (Nydegger and Hill, 2020).

Despite the significant contributions to this field of pandemic stigmatization, a significant lacuna remains in the evidence base. First, the present research has merely focused on the hate crimes and stigmatization of Asians and not on other ethnic minorities. Second, there is a lack of quantitative studies on US hate crimes during COVID-19, which, as a dual economic and health shock, significantly differs from other pandemics or global events (Anand, 2020). Previous literature has treated COVID-19 as a homogeneous period throughout, without considering the dynamics as the US adapts to it. Third, there is insufficient evidence disentangling the offenders' ethnic background with the racial crime they commit. In this paper, we attempt to fill these gaps.

3. Materials and Methods

We collect our data from the Federal Bureau of Investigation Hate Crime Statistics. The data includes all reported & registered crimes in the US. The selection bias, as usually appeared in surveys, does not exist here as all cases reported to the police are recorded. All the uses of data meet the ethical requirements and there is no potential risk of the exposure of any personal information. Before our analysis, we combine all non-racial crimes together as our baseline (i.e. random-race crimes). Table 1 illustrates the summary statistics of the cleaned data. The outcome measure in this analysis is bias_motivation. It is the motivation of the hate crimes and includes the following categories: baseline (1), White (11), Black (12), Asian (13), Indian (14), and Other (15). The main explanatory variable is o_race (Offender's race). The control variables are SI (COVID-19 stringency index, a proxy of the pandemic), quarter (seasonal factors) and states (demographic factors).

As the dependent categorical variable is polychotomous, Multinomial Logistic Regression (MultiLogit) was adopted and these coefficients provide the effect sizes on the probabilities of category membership. As an extension of binary logistic regression, Multi-Logit uses maximum likelihood estimate probabilities of each category relative to the reference category of the outcome variable. Hence, when the dependent variable has k=6 categories, the model fits k-1=5 logit equations simultaneously and our interesting marginal effects (probability) estimated by β_j differ according to the category relative to the reference category. In theory, our framework is:

$$U(BM_{ij}) = \alpha_j + \beta_j OR_i + \gamma' C_i + \epsilon_{ij}$$

where

- $U(BM_{ij})$ denotes utility of individual i committing crime to race j
- α_j denotes the constants
- C_i denotes the control vector, including SI, quarter and states

We then parameterise it:

$$ln(\frac{P(BM_{ij} = j)}{P(BM_{ij} = 1)}) = \hat{\alpha}_j + \hat{\beta}_j OR_i + \hat{\gamma}' C_i$$

Herein, the predicted probability that Black is a victim will be discovered through the marginal effect of OR_i when j=12. In our study, we calculate this marginal probability at means (APE).

4. Results

As Table 2 and Figure 1 illustrate, except for our baseline (non-racial crimes, or equivalently, random-race crimes), African Americans suffer from hate crimes the most.

Specifically, all races except for African Americans are most likely to target African Americans when committing hate crimes; and African Americans are most likely to target white Americans when committing hate crimes. Asian, Indian, and other minority races are rarely the target of racial hate crimes (statistically insignificant).

Motivation	Offender Race							Total
	Asian	Black	Indian	Others	Pacific Islander	Unknown	White	
Baseline	38	738	17	87	5	2313	1673	4871
Anti-White	6	448	15	24	12	430	253	1188
Anti-Black	33	120	23	60	8	1647	1639	3530
Anti-Asian	1	14	6	2	0	51	57	131
Anti-Indian	7	45	0	5	1	144	123	325
Anti-Others	2	11	1	3	1	145	91	254
Total	87	1376	62	181	27	4730	3836	10299

Table 1: Summary Statistics

Motivation	Offender Race						
	Asian	Black	Indian	Others	Pacific Islander	Unknown	White
Baseline	0.48 ***	0.63 ***	0.34 ***	0.52 ***	0.33 ***	0.53 ***	0.48 ***
	(8.08)	(26.10)	(4.95)	(12.84)	(2.70)	(31.97)	(33.29)
Anti-White	0.07 ***	0.25 ***	0.19 ***	0.09 ***	0.23 ***	0.07 ***	0.04 ***
	(2.40)	(11.82)	(3.55)	(4.39)	(2.44)	(9.95)	(8.98)
Anti-Black	0.42 ***	0.10 ***	0.45 ***	0.38 ***	0.42 ***	0.37 ***	0.46 ***
	(7.25)	(10.66)	(6.26)	(9.68)	(3.41)	(29.16)	(32.82)
Anti-Asian	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(0.14)	(0.14)	(0.14)	(0.14)	(0.03)	(0.14)	(0.14)
Anti-Indian	0.02	0.01	0.00	0.01	0.01	0.01	0.01
	(0.72)	(0.73)	(0.03)	(0.69)	(0.56)	(0.74)	(0.74)
Anti-Others	0.01	0.00	0.01	0.01	0.15	0.12	0.01
	(0.52)	(0.55)	(0.48)	(0.53)	(0.48)	(0.56)	(0.56)

Table 2: Marginal Probability of Offender Race to Motivation (t statistics in parentheses)
* significant at 10%, ** significant at 5%, *** significant at 1%;
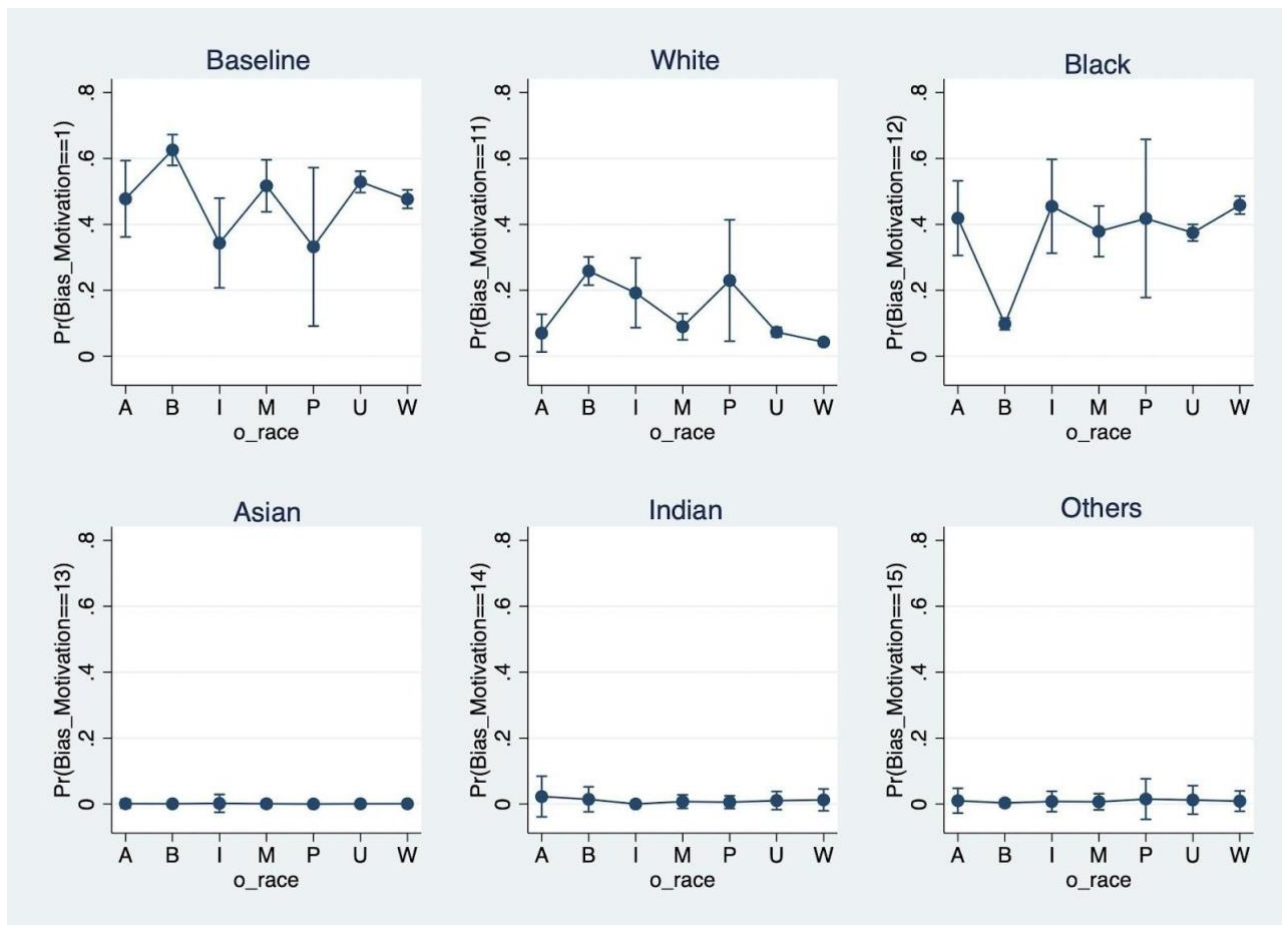
Figure 1: Marginal Probability of Offender Race to Motivation

5. Discussions and Conclusions

The goal of this paper is to further delve into the association between an offender's race and COVID-period hate crimes for various ethnic communities in the US. While a large and growing body of literature on Asian Americans has established that racial stigmatization has a consistent and positive association with Asian targeted hate crimes, few studies have tested this association for other racial/ethnic minorities. This is especially the case for hate crimes targeted at African Americans, which increased over the last few months. Overall, we aim to expand this study by including other racial/ethnic groups neglected in previous pieces of literature to provide some account for why this association might exist.

From the regression results presented above, we draw several main conclusions. First, anti-Black bias was the biggest cause of the racial hate crimes committed in the United States during the COVID-19 pandemic. The offender's race has a positive and statistically significant association with hate crimes against African Americans after controlling for stringency and demographic factors. Specifically, other than fellow African Americans, all other races are roughly equivalently associated with a higher probability of committing anti-Black crimes during the pandemic. The high anti-Black motivation is consistent with the expectations of implicit bias of viewing African Americans as a high-risk group in the US society, as this often means seeing them as potential carriers and spreaders of the virus.

The COVID-19 pandemic has also been a period of racial tension in the United States among not just the ethnic minorities, but White Americans. We find the anti-White hate crime is the second-highest bias motivation, though the ethnicity is the 60% majority in the US population. Moreover, our finding also suggests a positive association between the offender's race and crime motivations during the pandemic for anti-White crimes. Different from the findings on the bias motivation against African Americans, the anti-White hate crimes are associated unequally by the offenders' race. African Americans and Pacific Islanders are much more likely to commit anti-White hate crimes than other races in the United States. This is, we believe, most likely the effect of the upstream inequalities in racial power dynamics, which have been exacerbated during the pandemic (Dunkan, 2019). Past studies have noted that White Americans have extensive medical resources in comparison to other ethnic groups (Elam-Evans, 2008). During the COVID-19 pandemic, this health inequality may, unfortunately, push other marginalized ethnic groups who lack medical resources to commit unlawful hate crimes.

We find statistically insignificant associations between offenders' race and crime motivations in terms of the anti-Asian, anti-Indian, and anti-other crimes. This contradicts our theoretical predictions on significant Asian hate during COVID-19. We attribute this to one major limitation with the use of administrative FBI Hate Crime Statistics. In Table 1, summary statistics have shown a limited number of hate crimes reported by these three groups (Anti-Asian, 131; AntiIndian, 325; Anti-Others, 254). This might reflect a severe under-reporting issue in anti-Asian crimes. Previous research has revealed language barriers and irresponsibility of the authorities in dealing with anti-Asian crimes, which has led some Asians to avoid reporting their cases out of distrust of the authorities (Gover et al., 2020; Pezzella et al., 2019). Therefore the crime is not documented and leads to an underestimation of the frequency. In other words, selection bias may exist in our studies, which is a potential limitation or contradiction.

In conclusion, this study provides empirical evidence of the hate crime levels during the COVID-19 pandemic and that there is a positive association between COVID-related crime motivation and the offender's ethnicity. The anti-Black and anti-White crime motivation is heavily affected by race after controlling for the governmental stringency index and seasonal and demographic controls using multinomial logistic regression. These results suggest that policymakers should consider long-standing race inequalities to reduce racially targeted crimes in the pandemic. In the future, we aim to use more accurate or representative proxies/instrumental variables for COVID-19, such as vaccination, daily infections, and social media data. (Zhou & Li, 2022).

Acknowledgements

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