A Love-Hate Relationship: The Legalization of Same-Sex Marriage and the Number of Reported Anti-LGBT+ Hate Crimes in the United States

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Abstract

Oddly, as acceptance of LGBT+ individuals continues to rise in the United States, the number of reported anti-LGBT+ hate crimes also rises (McCarthy 2022, Author's calculations from Uniform Crime Reporting data). Could this be the result of a violent backlash against the legalization of same-sex marriage? This paper investigates this love-hate relationship using data from the Bureau of Justice Statistics's Uniform Crime Reporting system. Utilizing a collection of difference-in-differences regressions, this analysis compares the number of reported anti-LGBT+ hate crimes in a state before and after that state's legalization of same sex marriage. The results suggest that states have a higher number of reported hate crimes per month after their legalization of same-sex marriage when controlling for population. A placebo regression shows that this effect is not found with other kinds of hate crimes. Two potential explanations for this finding are explored: firstly, that reporting of anti-LGBT+ hate crimes in a state becomes more reliable after that state's legalization of same-sex more reliable after that state's legalization of same-sex more reliable after that state's legalization of same-sex marriage or, alternatively, that the number of hate crimes committed against LGBT+ individuals rises.

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1. Introduction

On June 26, 2015, the U.S. Supreme Court legalized same-sex marriage throughout the United States: a decisive win in the battle for fair and equal treatment of gay Americans. Just 7 years later, the most recent Gallup poll at the time of writing found that an all-time high of 71% of Americans believe that same-sex marriage should be legally equal to heterosexual marriage in 2022 (McCarthy 2022). However, existing literature has not examined the extent to which growing LGBT+ acceptance amongst the majority of Americans may influence opinion changes at the bigoted extremes—such as amongst those that are driven to commit hate crimes.



Figure 1. The U.S. Approval of Same-Sex Marriage Over Time from 1996 to 2022, with First State Legalization (Massachusetts) and Federal Legalization Highlighted. Data from Gallup Polls.

Despite the relatively consistent and unchallenged rise in public acceptance since the 2015 national legalization—as illustrated in Figure 1—Justice Clarence Thomas's recent majority opinion in *Dobbs v. Jackson Women's Health Organization* (2022) subjected same-sex couples' rights to a shocking political challenge. In the opinion, the Justice called for a reevaluation of the court's 2015 legalization of same-sex marriage (Thomas 2022, 3). The release of Thomas's opinion shocked the nation, and—mere months later—the U.S. Senate responded by passing the Respect for Marriage Equality Act, a bill that would repeal the 1996 Defense of Marriage Act and enshrine gay couples' right to marry in federal law.

However, despite this legislative affirmation of the rights of same-sex couples, the ongoing cultural and political battle reflected in Justice Thomas's opinion highlights the dynamic relationship between political discourse, legislation, minority civil rights, and public opinion. It also begs questions about the extent to which the bigoted minority standing against same-sex marriage and LGBT+ individuals may be influenced by the evolving, increasingly accepting cultural and political scene.

This paper attempts to add to this conversation, addressing those standing at the most bigoted extreme: the perpetrators of anti-LGBT+ hate crimes. This paper uses a collection of regressions dig into the statistical relationship between a state's legalization of same-sex marriage and the number of reported anti-LGBT+ hate crimes in that state. The regression will utilize the difference-in-differences method to compare the number of reported anti-LGBT+ hate crimes per month per million people in each state before and after that state's legalization of same-sex marriage.

Significance

The significance of the analysis presented in this paper is twofold. Firstly, this paper's results are directly relevant to LGBT community. The quality of life of gay, lesbian, bisexual, and transgender Americans is influenced both by the nation's formal legal respect for their civil liberties, as well as by the rate of homophobic and transphobic hate crimes. This importance is exacerbated by the recent legal and political challenges to LGB rights, such as those voiced in the aforementioned *Dobbs v. Jackson Women's Health Organization* (2022) opinion.

However, the implications extend even beyond the LGBT+ community. Firstly, hate crimes do not just negatively impact the individual victims; they also profoundly negatively impact the emotional and psychological wellbeing of the marginalized group that the victim represents (Bell and Perry 2014). Hate crimes can also severely weaken the social cohesion of an entire community (Martin 1995). If there is a statistically significant decline in reported numbers of homophobic and transphobic hate crimes after the legalization of same-sex marriage, it may imply that there are larger social gains to using policy to legitimize non-heteronormative—and at large, even non-majority—identities. Contrastingly, if there is a significant increase in the number of reported anti-LGBT+ hate crimes after the legalization, it may imply that survivors become more comfortable reporting hate-motivated incidents. Alternatively, it may illuminate the potential for a violent response from some bigoted individuals to the state granting minority communities their due civil rights, which certainly would represent a concern policymakers should be made aware of and make efforts to stem.

Opponents of the legalization of same-sex marriage might have argued that the difference between marriage and live-in partnership is not significant enough to spend political time and energy addressing, or—from a more classically liberal view—that marriage is too personal for

the state to litigate at all. However, this study could demonstrate that using policy to grant rights to socially marginalized groups—even intimately personal rights—may yield spill-over effects that create larger social gains or impact broad cultural attitudes about these groups. Thus, this paper may reveal a possibility for socially progressive policies to serve as a useful tool to help cultivate a more socially accepting culture—even amongst those at the most extremely bigoted ideological margin.

2. Literature Review

U.S. Acceptance of Homosexuality

Although the relationship between the hate crime rate and broader public opinion is largely unclear, attitudes on homosexuality globally have become more polarized over time. Since the 1970's, countries who have ranked as more accepting of LGB identifying individuals have become increasingly more accepting over time. Conversely, countries who have ranked as less accepting have become even less accepting in the past 50 years, while nations ranking near the global average for LGB acceptance have seen their citizens' attitudes stay about the same (Flores 2019). Existing literature shows that this polarization of the world's nations may also be reflected in an increased polarization amongst individuals, yielding a situation where those on the bigoted margin become increasingly unaccepting. Research on politically salient issues such as gay rights—indicates that these issues' appearance in political discourse trend may prompt polarization at the micro level (Zaller and Feldman 1992).

The United States is one country that has certainly experienced a wave of LGB acceptance (Avery 2007). However, research shows that an aversion to limiting gay peoples' civil liberties—which began to rise in the 1970's—preceded the general cultural acceptance of gay people—which only began to take hold in the 1990's (Loftus 2001). This implies that between the early 1970's and the 1990's, a majority of Americans wanted to protect gay Americans' civil liberties—such as the right to marry or be protected from employment discrimination—while concurrently believing that homosexuality was morally wrong. This illuminates how tides may turn against the restriction of civil rights of marginalized groups before culture turns in support of these groups at large. This intermediate period suggests the possibility of a cultural transitional space wherein gay civil liberties may be legally respected,

but latent or explicit homophobia may still linger in certain sociocultural spheres. This paper intends to investigate this possibility by exploring the relationship between the legalization of same-sex marriage and the number of reported anti-LGBT+ hate crimes.

However, since the 1990's, the percentage of Americans that identify as accepting of LGB people has risen at an increasingly rapid rate (Baunach 2012, Avery 2007). Furthermore, in 2009, Congress passed the Matthew Shepard and James Byrd Hate Crime Prevention Act, which expanded the criminal definition of a hate crime to apply to crimes motivated by bias against a victim's actual or perceived gender, gender identity, sexual orientation, or disability (111th Congress 2009). It also allocated additional \$5 million in 2010, 2011, and 2012 to assist state and local police agencies in investigating and prosecuting hate crimes. Lastly, it mandated that the Federal Bureau of Investigation track statistics on gender and gender identity-based hate crimes, in addition to incidents falling under other hate crime bias motivations (111th Congress 2009). These legal changes mark a watershed moment in the humanization and protection of LGB and genderqueer individuals by the U.S. federal government and populous at large.

May 2011 marked another key turning point: Gallup Polls found that the majority of Americans reported supporting the legalization of same-sex marriage (Gallup 2022). Research on LGBT+ acceptance has shown that age, education level, religiosity, partisanship, race, and gender are all reliable predictors of an individual's acceptance of gay people and support of same-sex marriage, so this public opinion shift could be due to the rapidly changing religious and educational demographics of the United States rather than a unilateral push towards LGBT+ acceptance (Abrajano 2010, Lewis 2003, Lewis and Gossett 2008). If this shift in the majority opinion is largely due to the changing demographics of the nation—rather than by any conscious

increase in popular LGBT+ acceptance—this may imply an even smaller chance of this majoritylevel shift influencing opinion at the most hateful and violent margin.

However, while 2011 marked a turning point for national opinion, acceptance within many states lagged. Research has shown that public policy is generally responsive to widespread public opinion—rather than vice versa. However, scholars disagree on whether this holds for the legalization of same-sex marriage (Lax and Phillips 2009, Haider-Markel and Meier 1996). This is to say that research has not conclusively identified whether—at large—state legalizations of same-sex marriage were generally incited by a supportive shift in majority opinion or propagated by a political elite. This uncertainty complicates the background of this paper's analysis. Whether or not state legalizations are preceded by state-wide shifts in LGB acceptance may impact whether or not these legalization events are correlated with similar changes amongst those at the most bigoted ideological margin: those that are driven to commit anti-LGBT+ hate crimes.

Proposed Relationships Between Expansions in Minority Groups' Civil Rights, Public Opinion, and Hate Crime Incidents

This uncertainty about the motivating role of public opinion on this political issue is coupled with uncertainty about the impact of same-sex marriage legalization on Americans' opinions on marriage equality. Existing research suggests a variety of theories explaining how public opinion often responds to laws expanding the civil liberties of minority groups. These theories all yield viable conclusions about the response of majority public opinion in the U.S. to the 2015 legalization, and within states to their own legalization decisions. A significant body of research supports the "backlash" theory: a theory proposing that when groups that have been traditionally politically, culturally, socially, or economically marginalized gain power, segments of the majority group may attempt to reverse the political gains of the marginalized (Mansbridge 2008, Alter 2020, Flores and Barclay 2015). This theory would suggest that after the legalization of same-sex marriage, hate crime rates might rise as slightly unaccepting heterosexual individuals become pushed by this backlash effect towards increasingly bigoted views and anti-LGBT+ violence.

Additional research articulates the "polarization" theory. This theory posits that political actors are ambivalent on many issues because they don't spend concentrated effort or time forming an opinion, or because their attitudes are unstable or inconsistent (Zaller and Feldman 1992). However, when the complex issue—political or otherwise—is raised, ambivalence becomes uncomfortable, encouraging individuals to take a side (Cooper et al. 1984, Newby-Clark et al. 2002, Flores and Barclay 2015). Thus, legalization events—such as key Supreme Court cases or legislation signings—draw attention to the issue and incite heightened debate. These events force individuals to form a concrete opinion on the matter, reducing ambivalence on marriage equality, potentially ultimately polarizing the citizenry. This theory may also suggest that the legalization of same-sex marriage could increase hate crime rates as individuals who had never seriously considered marriage equality are exposed to more debate and political propaganda around the subject that pushes them to take a hateful stance against the LGBT+ community.

The third theory—"legitimation" theory—argues that legalization events that embed a sociocultural movement in policy bestow legitimacy upon this sociocultural change (Anleu 2002, Passavant 2001, Flores and Barclay 2015). In the case of same-sex legalization, legitimization theory contends that these same-sex marriage laws or judicial decisions implicitly "naturalize" and legitimize the LGB community, thus increasing LGB acceptance—potentially even amongst

those at the ideological extreme. This may illuminate a path through which the legalization of same-sex marriage may lower the anti-LGBT+ hate crime rate.

The fourth prominent theory on the relationship between public policy and public opinion is "consensus" theory. This theory represents the null hypothesis. It contends that people's opinions on moralized issues—like LGBT+ rights—don't change over time or with influence, unlike other, more susceptible political opinions (Kreitzer et al. 2014, Lewis et al. 2017, Flores and Barclay 2015). Thus, legislative changes do not significantly impact public opinion on an issue and, thus, would not alter the rate of anti-LGBT+ hate crimes.

One 2017 paper evaluates these four hypotheses' explanations of public response to state legalization of same-sex marriage (Lewis et al. 2017). The paper finds that consensus and legitimacy theories seem to provide the most accurate explanations for the majority public opinion responses revealed in the data. This explanation has been confirmed by research finding that people whose demographic indicators make them statistically more likely to support LGBT+ acceptance are more likely to reflect a "legitimation"-type response to the legalization (Abrajano 2010, Lewis 2003, Lewis and Gossett 2008). That is, the legalization of same-sex marriage is more likely to push these individuals to become more accepting of gay people. However, it is worth highlighting that the research on this subject is sparse: only one empirical study found evidence to support this consensus or legitimation response theory to the legalization of same-sex marriage.

Motivation Typologies of Hate Crime Perpetrators

Furthermore, while these papers explicate convincing theories of opinion trends on the average in response to same-sex marriage legalization, significant research has yet to explicate the circumstances of significant changes in opinion at the individual level—especially amongst

those deeply entrenched in the extremely bigoted ideological margin. While the theoretical background on the sociological backlash, polarization, consensus, and legitimation theories serves as a helpful foundation for conjectures, more targeted empirical research is clearly necessary. Ultimately this paper aims to fill this gap by dissecting the relationship between the legalization of same-sex marriage and the opinions of those violent few on the extremely homophobic margin, as measured by the incidence of anti-LGBT+ hate crimes.

Hate crimes are unique from other kinds of crime in a number of key ways. Firstly, hate crimes are considerably more likely to involve "excessive violence" for the type of crime, but the violence generally does not involve any associated crimes—such as robbery. Secondly, they are usually spontaneous. They are also generally committed against strangers by young, white males. Furthermore, they overwhelmingly involve more than one offender (Berk 1990, Levin and McDevitt 1993).

While existing research does not indicate that hate crime perpetrators are directly influenced by legislation or Supreme Court decisions, studies highlight ways in which these criminals may be impacted by socio-cultural shifts. One study utilizing surveys of hate crime perpetrators in Boston, MA has grouped offenders into three categories: those who are seeking a thrill, those who see themselves as "defending their turf" from the group they victimize, and those genocidal perpetrators whose mission is to rid the world of the group or groups they despise (Levin and McDevitt 1993). In 2002, a fourth category of hate crime motivation was added: retaliation. Retaliatory offenders identified themselves as committing their crime in response to a real or alleged hate crime against themselves or a group they identify with (McDevitt 2002). This 2002 paper reevaluates the proportion of hate crime perpetrators that fall into each of these four motivational categories and found that in a sample of hate crimes

committed in the Boston Police Department's jurisdiction between 1991 and 1992 (n=169), 66% of offenses were committed by perpetrators who reported that they were seeking a thrill or entertainment. In 91% of these "thrill seeking" offenses, offenders left their own neighborhoods to travel to an area with a high proportion of the typology of victim they were seeking (McDevitt 2002).

The next largest motivation category—25%—represents offenders who sought to "defend their turf" from the group that they victimized in their crime. These offenders reported wanting to protect their neighborhoods from the unwanted groups, who they saw as "intruders" (McDevitt 2002). This motivation typology is most commonly associated with racialized crime: crimes where the offender intends to convince the "intruding" victim to relocate to another neighborhood and to convince other residents of the victim's demographic group to do the same. Research on these types of hate crimes has shown that these crimes tend to rise in historically all-white neighborhoods when these neighborhoods begin to transition to more racial heterogeneity (Green et al. 1998). "Retaliatory" and "mission-based" offenses represent 8% and less than 1% of hate crimes, respectively, in the 2002 Boston-based study (McDevitt 2002).

However, while the proportions accounted to each offender typology in this study provide useful context, they may not precisely reflect the proportion of offender typologies in nationally reported anti-LGBT+ hate crimes. Firstly, the 2002 study amalgamated all hate crimes and did not differentiate between racially biased, gender or sexuality biased, or religiously biased crimes. Since Boston is well-documented as a city with high levels of racial and ethnic tensions, it is likely that a large proportion of these hate crimes is racially, ethnically, or religiously motivated. Thus, these race-, ethnicity-, or religious-biased hate crimes may be biasing the types of offender-typologies present. Therefore, it is difficult to determine whether the proportions of

offender typologies presented in this study are an accurate reflection of the offender typologies in gender- or sexuality-biased hate crimes. This disconnect is most evident in the high proportion of "defensive" offenders in the study, which is a typology strongly associated with racial hate crimes (Green et al. 1998).

However, assuming that the results of the 2002 study bear at least some relevance to offender motivations in anti-LGBT+ hate crimes, the high proportion of "thrill seeking" offenders implies a strong potential for offenders' victim choice to be influenced by cultural trends. As the LGBT+ community is increasingly normalized in society, "thrill seeking" offenders may become less likely to perceive them as "other" and as people worthy of victimization. This theory may explain an avenue through which increased cultural acceptance of the LGBT+ community—as prompted by the legalization of same-sex marriage—may decrease the rate of anti-LGBT+ hate crimes, despite the fact that hate crime offenders exist on the extremist ideological margins and may be less swayed in their opinions by judicial decisions or changes in legislation.

Reasoning for Including Anti-Transgender and Gender Non-Conforming Hate Crimes in the Analysis: Linked Acceptance of the LGBT+ Community

The interest in investigating the relationship between the legalization of same-sex marriage and the incidence of hate crimes against gay, bisexual, and lesbian people is logically evident. What is perhaps less evident is the decision to include hate crimes against transgender and gender non-conforming individuals in the analysis. However, existing research suggests that Americans' opinions on transgender people and on homosexuality are linked (Norton and Herek 2013). Furthermore, it is important to note that despite considerable gains in U.S. acceptance of homosexuality, U.S. acceptance of transgenderism has lagged significantly behind. However, the literature suggests that the U.S. is experiencing a similar, albeit delayed increase in the acceptance of transgender people (Lewis et al. 2017, Norton and Herek 2013). This linked relationship between U.S. acceptance of these different sects of the LGBT+ community informed the decision to analyze the relationship between same-sex marriage legalization and anti-transgender hate crimes in this paper, in addition to the more obvious connection between same sex marriage legalization and hate crimes against gay, lesbian, and bisexual people.

3. Data and Methodology

Data

This paper will utilize two different longitudinal datasets. The first batch of data has been collected from the Uniform Crime Reporting System (UCR): a system that compiles data on reported crimes from participating law enforcement agencies around the United States. These data are collected via two surveys. The first is the Summary Reporting System (SRS): a survey collecting basic data about crimes from police agencies that has been in use since 1930. The second is the National Incident-Based Reporting System (NIBRS) which is a more complete survey that state police agencies began adopting in 1991. As of June 2022, the SRS has been completely phased out and replaced by the more complete NIBRS. However, because the dataset used in this paper covers 1991 through 2020, a significant amount of the data has been retrieved via the SRS. Because the paper's analysis only utilizes basic details about the crime—such as location, date, and hate crime motivation—neither the prolonged reliance on a less complete collection method nor the transition between surveys pose a significant problem.

The UCR dataset details 225,391 hate crime offenses occurring between 1991 and 2020. This paper utilizes data collected from the FBI, and as such it utilizes the FBI's definition of a hate crime: any crime–such as a murder, assault, rape, or intimidation—that law enforcement determines is motivated "in part or in whole" by the offender's bigotry against any one or combination of protected groups (FBI 2023).

Within the UCR data, reported hate crime offenses are distributed across 34 distinct bias motivation categories, which cover a range of racial, ethnic, religious, gender, sexuality, and ability-based biases. For this analysis, anti-non-heterosexual sexual orientation hate crimes are defined as crimes that were reported in the data as having "Anti-Male Homosexual (Gay),"

"Anti-Female Homosexual (Lesbian)," "Anti-Bisexual," or "Anti-Lesbian, Gay, Bisexual, Transgender (Group)" motivations. Anti-non-cisgender gender identity hate crimes are defined as those reported as provoked by "Anti-Transgender," and "Anti-Gender Non-Conforming" motivations. These two gender identity bias motivations were only added to the dataset in 2012. Collectively, hate crimes that are reported as motivated by any one of these six bias motivations in the UCR data are categorized in this paper as anti-LGBT+ hate crimes. It is important to note that the bias motivations attached to crimes in the UCR dataset are catalogued by law enforcement according to local protocol for characterizing hate-motivated crimes. There may be incidents that survivors would categorize as hate crimes that do not meet the additional burden of proof for police to label them as hate motivated. Thus, these data on the offenders' bias motivations may be underreported or otherwise not completely reliable.

It is also important to note that hate crimes are notoriously underreported, and—amongst these—anti-LGBT+ hate crimes particularly so (Chakraborti et al. 2014). This underreporting certainly limits the reliability of the UCR data; however, despite its limitations, it is one of only a handful of national datasets on hate crime victimization. Despite the dataset's issues, academics on the cutting edge of hate crime research within the United States utilize these data for their analysis (Gero et al. 2022, Holder 2022, Flores et al. 2022, Keum et al. 2022). Thus, although the data are not perfect, they are a natural choice for this paper's analysis.

Research Method

Difference-in-Differences Approach and the Primary Regression Model

For the statistical analysis, this paper utilizes a collection of difference-in-differences regressions to compare anti-LGBT+ hate crime rates in different states contingent on a few key independent variables. First and foremost, the regressions will compare a state's hate crime rate

pre- and post- that state's same-sex marriage legalization. The data on the year and month of each state's legalization of same sex marriage were collected from the website of Freedom to Marry: a same-sex marriage advocacy organization. The regressions also compare hate crime rates pre- and post- national legalization and compare anti-LGBT+ hate crimes rates in states that ever legalized same-sex marriage of their own accord versus those in which same-sex marriage remained illegal until the June 2015 national legalization. For the primary regression, the dependent variable is the number of reported anti-LGBT+ hate crimes per one million people per month. The following is the equation used for the primary regression:

$$Y_{LGBT+HC} = \beta_0 + \beta_{Post_State_Legal} + \beta_{Ever_State_Legal} + \beta_{Post_Nation_Legal} + \beta_{Non_LGBT_HCS} + \beta_{Population} + \beta_{Violent_Crime} + i. year$$

In this equation, the constant (β_0) represents the baseline level LGBT+ hate crime rate quantified as the number of anti-LGBT+ motivated hate crimes per one million people—in an arbitrarily chosen baseline year pre-national legalization in a state that never legalized same-sex marriage on its own. The variable $\beta_{Post_State_Legal}$ is the variable of interest for this paper's analysis. Its coefficient reveals the average change in the number of anti-LGBT+ hate crimes reported per month before and after the same-sex marriage legalization event in each state. This coefficient defines the reported hate crime rate as number of anti-LGBT+ motivated hate crimes per one million people per month. Therefore, a coefficient of 1 on $\beta_{Post_State_Legal}$ would indicate that, in a state that legalized same-sex marriage before *Obergefell v. Hodges* (2015), the number of reported anti-LGBT+ hate crimes per month rose by one hate crime per million people after same-sex marriage was legalized,

The coefficient $\beta_{Ever_State_Legal}$ measures the additional difference in the per month reported anti-LGBT+ hate crime rate between the cohort of states that legalized same-sex

marriage independently versus the per month reported anti-LGBT+ hate crime rate amongst states that legalized same-sex marriage as a result of the *Obergefell vs. Hodges* Supreme Court case in 2015. This variable is intended to track any differences in crime patterns between these two cohorts of states, independent of time. This is an important control for a variety of reasons. For example, if states that legalized same-sex marriage of their own volition are more accepting and have fewer hate crimes, this coefficient will capture that negative effect. Alternatively, if states that legalized same-sex marriage earlier have better reporting rates, this coefficient will capture that positive effect. Lastly, the $\beta_{Post_Nation_Legal}$ measures the potential additional change in the LGBT+ hate crime rate after the national legalization of same-sex marriage in 2015.

 $B_{Non_LGBT_HCs}$ is one of the regression's control variables. This variable seeks to identify the amount of change in the reported anti-LGBT+ hate crime rate that is correlated with changes the general reported hate crime rate. This aims to control for general improvements in reporting techniques that may produce increases in the reported rates of all types hate crimes. Similarly, $\beta_{Violent_Crime}$ stands as a control for the general violent crime rate. This variable is intended to control for changes in the number of reported anti-LGBT+ hate crimes that are correlated with changes in the general violent crime rate. By including $\beta_{Violent_Crime}$ and $\beta_{Non_LGBT_HCs}$, this analysis attempts to isolate the impact of the change in policy—the legalization of same-sex marriage—from potentially contemporaneous changes in hate crime frequencies, reporting methodologies, and the violent crime rate. This regression also controls for any impact of population changes and of time on the reported anti-LGBT+ hate crime rate via the $B_{Population}$ and year indicators—represented by *i.year*—respectively.

Secondary Regressions

For the analysis, two other regressions were run, breaking down the reported anti-LGBT+ hate crime rate into gender-identity biased crimes and sexual-orientation biased crimes. In these

regressions, all independent variables remained the same, but the dependent variables were (1) the number of reported hate crimes targeting a minority gender identity (i.e., victimizing a noncisgender individual) and (2) the number of reported hate crimes targeting a minority sexual orientation (i.e., victimizing a non-heterosexual individual). The equations for these two regressions are the same as the above regression equation, with the dependent variables being sexual orientation-based hate crimes and gender identity-based hate crimes, respectively.

Placebo Regression

Additionally, in order to test the statistical rigor of the main regression models' results, a placebo regression analyzing the relationship between the race-based hate crime rate and the previously discussed independent variables is conducted. This regression will help to further legitimize this paper's findings by demonstrating that the correlations discovered between the number of reported anti-LGBT+ hate crimes and the model's independent variables are not coincidental and are not seen with other types of hate crimes. In other words, this placebo will help to highlight the independent variables' unique relationship to the number of reported anti-LGBT+ hate crimes in general. The equation used for the placebo regression is transcribed below, where all the independent variables are the same, but the dependent variable is the number of race-based hate crimes per million people per month:

 $Y_{Race/Ethnic_HCs}$

 $= \beta_0 + \beta_{Post_State_Legal} + \beta_{Ever_State_Legal} + \beta_{Post_Nation_Legal} + \beta_{Non_Race/Ethnic_HCs} + B_{Population} + B_{Violent_Crime} + i. year$

State Control Regression

This paper will also feature a regression with indicators controlling for each state and Washington D.C.—with one omitted to avoid perfect collinearity. This regression will attempt to address the potential for a coincidental conflation of the status of hate crime rates in states that legalized same-sex marriage early as being the result of that early legalization. In other words, if by coincidence the cohort of states that legalized gay marriage the earliest coincidentally had relatively low numbers of reported anti-LGBT+ hate crimes, the $\beta_{Post_State_Legal}$ variable may carry this statistical difference, producing a negative coefficient that indicates that the legalization of same-sex marriage leads to lower reported anti-LGBT+ hate crime rates. By controlling for states, this fourth regression will parse out the effect of being in a given state on the number of reported anti-LGBT+ hate crimes, independent of their population size or same-sex legalization date. This regression omits the $\beta_{Ever_State_Legal}$ variable to avoid collinearity. The equation is transcribed below:

$$Y_{LGBT+_HCs} = \beta_0 + \beta_{Post_State_Legal} + \beta_{Post_Nation_Legal} + \beta_{Non_LGBT_HCs} + \beta_{Population} + \beta_{Violent_Crime} + i. year + i. state$$

2009 Hate Crime Prevention Act Regression

Lastly, this paper will include a regression adding to the independent variables an indicator for the passage of the 2009 Matthew Shepard and James Byrd Jr. Hate Crimes Prevention Act (HCPA), as discussed earlier in the paper. This regression aims to differentiate the relationship between the impact of the legalization of same-sex marriage and on the number of reported anti-LGBT+ hate crimes and the impact of the late October passage of the 2009 HCPA. This regression is of particular importance given that the bulk of states' legalization of same-sex marriage occurred around the late 2010's: temporally adjacent to the HCPA's passage. The equation is featured below, where the binary indicator β_{Post_HCPA} is equal to zero before and during October 2009 and equal to one after:

 $Y_{LGBT+_HCs} = \beta_0 + \beta_{Post_HCPA} + \beta_{Post_State_Legal} + \beta_{Post_Nation_Legal} + \beta_{Non_LGBT_HCs} + \beta_{Population} + \beta_{Violent_Crime} + i.year + i.state$

4. Summary Statistics

The Uniform Crime Reporting system tracks reported hate crimes motivated by a wide range of biases. According to the UCR data, the most common biases motivating reported hate crimes in the US between 1991 and 2016 are anti-black (34.14%), antisemitic (12.60%), anti-white (11.66%), and anti-gay (10.02%) biases, as displayed in Table 1 below. This reveals that while most hate crimes reported to the UCR are motivated by racial or ethnic bias (77%), the second highest motivation category is sex- and gender-based hate crimes. This prevalence further highlights the importance of this paper's analysis. However—as discussed in the Data and Methodology section—these numbers of reported hate crimes should not necessarily be interpreted as proportional representations of the number of hate crimes committed in the United States. Some hate crimes may have disproportionately higher or lower reporting rates, leading to their being under or overrepresented as a fraction of the number of total reported crimes.

Race/Ethnicity	Raw Number	% of All Hate Crimes
Anti-Black	76,939	34.14%
Antisemitic	28,394	12.60%
Anti-White	26,274	11.66%
Anti-Hispanic	14,646	6.50%
Anti-Ethnicity Other Than Hispanic	11,147	4.95%
Anti-Asian	6,704	2.97%
Anti-Multi-Racial Group	5,411	2.40%
Anti-American Indian Or Native Alaskan	2,505	1.11%
Anti-Arab	1,375	0.61%
Anti-Native Hawaiian Or Other Pacific Islander	109	0.05%
Total	173.504	76.98%

Table 1. UCR Reported Hate Crimes from 1991-2020 Categorized By Bias-Motivation. Table Continued on Page 25.

Religion	Raw Number	% of All
Anti Muslim	<u>1 004</u>	1 78%
Anti-Mushin Anti Other Policien	2 502	1.7870
Anti-Othelia	1,656	0.720/
Anti-Catilone	1,050	0.7370
Anti-Flowstant	1,310	0.5870
Anti-Multi-Kenglous Gloup	204	0.30%
	272	0.13%
Anti-Other Christian	2/3	0.12%
Anti-Eastern Orinodox (Greek, Russian, Etc.)	201	0.12%
Anti-Atheism/Agnosticism	1/4	0.08%
	68	0.03%
Anti-Mormon	62	0.03%
Anti-Buddhist	51	0.02%
Anti-Jehovah's Witness	35	0.02%
	13,00/	5.80%
Say/Candan	Raw	% of All
Sex/Genuer	Number	Hate Crimes
Anti-Gay (Homosexual Male)	22,589	10.02%
Anti-LGBT Group	6,910	3.07%
Anti-Lesbian	4,651	2.06%
Anti-Transgender	934	0.41%
Anti-Heterosexual	593	0.26%
Anti-Female	303	0.13%
Anti-Gender Non-Conforming	282	0.13%
Anti-Male	140	0.06%
Total	1,659	16.15%
		0/ 0 411
Disability	Raw Numbar	% 0f All Hata Crimos
Anti Mental Disability	1180	0.52%
Anti-Physical Disability	6/0	0.3270
Total	1.820	0.2070
	1,040	0.01/0
Total	225,391	100%

Table 1 (Continued). UCR Reported Hate Crimes from 1991-2020 Categorized By Bias-Motivation. Table Continued from Page 24.

Note: Raw number of hate crime incidents and percentage of total hate crimes indicated. Percentages are rounded to nearest hundredth and therefore do not add to 100.

Source: Author's calculations from 1991-2020 UCR data.

Below, Table 2 illustrates the vast array in the monthly number of reported anti-LGBT hate crimes per million people across the United States, evidencing either the differing frequency of these crimes, the differing reporting reliability, or a combination of both between states. Table 2 reveals that the states with the highest number of reported anti-LGBT hate crimes per million people per month are coastal states, and the majority are on the east coast: such as Washington D.C., Maine, Vermont, Massachusetts, Rhode Island, and Delaware. Contrastingly, the states with the lowest number of reported anti-LGBT hate crimes are largely southern states like Mississippi, Alabama, Louisiana, Georgia, Oklahoma, and Florida.

Furthermore, the bottom row of the table suggests that states that the average number of reported anti-LGBT hate crimes per month per million people in states that legalized same-sex marriage with *Obergefell v. Hodges* (2015) is nearly 50% lower than in states that autonomously legalized same-sex marriage by a state-level legislative or judicial action before the Supreme Court case.

State	HCs/Month /1M	State	HCs/Month /1M	State	HCs/Month /1M
D.C.	5.294	North Dakota	0.459	Arkansas	0.223
Maine	1.164	South Dakota	0.456	South Carolina	0.205
Vermont	1.050	Nevada	0.442	Illinois	0.204
Massachusetts	0.992	Connecticut	0.441	Texas	0.197
Oregon	0.781	Michigan	0.437	Missouri	0.197
Rhode Island	0.776	New York	0.394	Wisconsin	0.190
Washington	0.775	Tennessee	0.357	Maryland	0.185
Delaware	0.774	Nebraska	0.353	Iowa	0.184
California	0.661	Alaska	0.343	Indiana	0.157
Wyoming	0.583	Idaho	0.322	North Carolina	0.152
Arizona	0.576	Kentucky	0.321	Florida	0.139
Montana	0.545	Kansas	0.320	Oklahoma	0.129
Hawaii	0.527	New Mexico	0.312	Georgia	0.117
New Hampshire	0.525	Utah	0.312	Louisiana	0.097
New Jersey	0.514	Ohio	0.301	Pennsylvania	0.057
Minnesota	0.482	West Virginia	0.284	Alabama	0.044
Colorado	0.465	Virginia	0.262	Mississippi	0.041
Avg. in States tha Legalized SSM Pre-O v. H	0.567	Avg. in States where O v. H Legalized SSM	0.276	Overall Average (All States)	0.492

Table 2. Average Number of UCR Reported Anti-LGBT+ Hate Crimes Per Month Per 1,000,000 People in Each

 State over 1991-2020, Arranged from Highest to Lowest Value.

Note: Values Rounded to the nearest thousandth. Average population from 1991 to 2020 used for calculation. "SSM" = Same-sex marriage; "O v. H" = Supreme Court *Obergefell v. Hodges* (2015) decision. *Source:* Author's calculations from 1991-2020 UCR data.

Furthermore, the states that stick out on the high and low extremes of Table 2 are largely completely distinct from those states making up the extremes of Table 3, with the exception of Oklahoma having the 6th lowest number of reported anti-LGBT+ hate crimes per million people per month and the 5th lowest in overall hate crimes. Similarly, states like California and Arizona New Jersey rank relatively highly in both tables. Contrastingly, Washington D.C. has the highest number of reported anti-LGBT+ hate crimes per month, but the lowest number of reported overall hate crimes per million people per month. In general, Table 2 and

Table 3 indicate that a higher number of reported total hate crimes is not necessarily indicative of a high number of anti-LGBT+ hate crimes, and vice versa.

Top 5		Bottom 5	
State	HCs/Month/1M	State	HCs/Month/1M
Arizona	30.899	D.C.	0.093
New York	30.060	New Mexico	0.240
California	29.886	West Virginia	0.297
Florida	27.661	Utah	0.306
New Jersey	22.930	Oklahoma	0.381
		Average	5.390

Table 3. States with Top Five Highest and Lowest Numbers of UCR Reported Hate Crimes (All Bias Motivations)

 Per Month Per 1,000,000 People in Each State over 1991-2020.

Note: Values rounded to the nearest thousandth. Average population from 1991 to 2020 used for calculation. *Source:* Author's calculations from 1991-2020 UCR data.

Table 4 adds further complexity to the statistical picture of anti-LGBT+ hate crime frequencies across the country. The table lists the states with the highest and lowest percentages of anti-LGBT+ hate crimes as a of total of reported hate crimes in that state. These tables reveal D.C. and Maine as leading the nation in the relative prevalence of reported anti-LGBT+ hate crimes. However, it is important to note that while Table 4, like Tables 1-3, reflects statistics calculated from the number of reported hate crimes, which is at simply a proxy for the real number of hate crimes committed within a state. Therefore, while areas like Washington D.C. and Maine appear in Table 4 to have truly disproportionate levels of anti LGBT+ hate crimes relative to other types of hate crimes, this could be due to higher rates of reporting of anti LGBT+ hate crimes relative to other states.

Top 5		Bottom 5	
State	Percent of Crimes	State	Percent of Crimes
D.C.	52%	Maryland	6%
Maine	35%	Mississippi	6%
Georgia	25%	Pennsylvania	7%
Rhode Island	25%	New Jersey	8%
New Hampshire	24%	Alabama	8%
•		Average	16%

Table 4. States with Top Five Highest and Lowest Fractions of Total Quantity of Hate Crimes Reported to the UCR from 1991-2020 that are Anti-LGBT+ Bias Motivated. Values Rounded to Nearest Whole Percent.

Note: Values rounded to the nearest whole percent.

Source: Author's calculations from 1991-2020 UCR data.

Another interesting complexity of the UCR data, illustrated in Figure 2, is that the reported number of anti-LGBT+ hate crimes and hate crimes of all biases have been on a consistent rise over time. This provides further evidence that the data are significantly influenced by changes in reporting frequency and practices. Over the years between 1991 and 2020, more police departments have joined the Summary Reporting System and began reporting their crime data to the Bureau of Justice Statistics. This upward trend in the number of reported hate crimes also may be influenced by states abandoning the basic SRS system and joining the more complete NIBRS reporting system, as discussed previously in the Data and Methodology section.



Figure 2. Number of Anti-LGBT+ Hate Crimes vs. Number of Total Hate Crimes Reported to the Uniform Crime Reporting System on a Logarithmic Scale (1991-2020).

5. Results

Primary Regression

	Variable	Coefficient	Standard Error	P-value	
-	Post State Legal	0.3839**	0.0296	0.000	
-	Ever State Legal	0.0847**	0.0199	0.000	
	Post Nation Legal	0.0073	0.0818	0.929	
_	Non-LGBT Hate Crimes	0.1652**	0.0039	0.000	
	Population	-0.0195**	0.0011	0.000	
	Violent Crime	0.0011**	0.0000	0.000	

 Table 5. Regression 1: Primary Regression on the Number of Reported Anti-LGBT+ Hate Crimes per Month.

Note: ****** Indicating coefficients significant at the 1% level. Coefficients rounded to the nearest ten-thousandths place. P-values rounded to nearest thousandths place. Coefficients on year and state indicators not shown. Full regression results attached in Appendix A.

The statistically significant coefficient on $\beta_{Post_State_Legal}$ in Table 5 signifies that after a state legalizes same-sex marriage—via an autonomous state court ruling or legislative action or via the *Obergefell v. Hodges* decision—the number of reported anti-LGBT+ hate crimes per month in that state rises by about .38 crimes per million people. To put this number in context, on average states report .492 anti-LGBT+ hate crimes per million people per month (Table 2). This means that the legalization event preceded a near 80% increase in the number of anti-LGBT+ hate crimes reported per month per million people. Although an increase of less than a half of a crime per million people per month is not huge, the effect size is large relative to the average number of reported crimes. The large relative size of the effect underlines the motivation for the placebo regression to parse out any underlying coincidental effects.

Additionally, the results displayed in Table 5 reveal that states that legalized same sex marriage of their own volition before the 2015 Supreme Court decision have on average an

additional .09 more anti-LGBT+ hate crimes per million people reported per month than states for which the *Obergefell v. Hodges* legalized same-sex marriage. The coefficient on $\beta_{Post_Nation_Legal}$ is not significant, indicating that the national legalization alone is not significantly correlated with an additional change in the number of reported anti-LGBT+ hate crimes.

The relatively high coefficient on the variable controlling for the general rate of reported hate crimes in the population excluding anti-LGBT+ hate crimes ($\beta_{Non_LGBT_HCs}$) shows a strong correlation between high numbers of reported hate crimes of any bias type and high numbers of reported anti-LGBT+ hate crimes. It is unclear whether this correlation can be attributed to certain states having better reporting of all types of hate crimes, or if states with high numbers of committed hate crimes of one type are more likely to have high numbers of hate crimes of other bias motivation categories. The significantly smaller coefficient on $\beta_{Violent_Crime}$ indicates that a much smaller correlation between the reported anti-LGBT+ hate crime rate and the violent crime rate also exists. Lastly, the small negative coefficient on $\beta_{Population}$ suggests that lower numbers of reported anti-LGBT+ hate crimes per person are seen in states with higher populations.

This same regression was run with state controls, excluding the $\beta_{Ever_State_Legal}$ variable to avoid collinearity. The $\beta_{Post_State_Legal}$ coefficient is not significant in this regression (see Appendix F for full state control regression results); however, it still shares the same sign as the coefficients in Regressions 1-3 (Tables 8-10). This suggests that after controlling for the effects of each state on the number of reported anti-LGBT+ hate crimes, there is still a lingering positive relationship between legalizing same sex marriage and the reported anti-LGBT+ hate crime rate. This result further legitimizes the findings of Regressions 1-3.

Secondary Regressions

Gender Identity

Variable	Coefficient	Standard Error	P-value
Post State Legal	0.0648**	0.0084	0.000
Ever State Legal	-0.0078	0.0057	0.165
Post Nation Legal	0.0122	0.0232	0.599
Non-LGBT Hate Crimes	0.0303**	0.0011	0.000
Population	-0.0027**	0.0003	0.000
Violent Crime	0.0002**	0.0000	0.000

Table 6. Regression 2: Secondary Regression on the Number of Reported Anti-Gender Identity (Anti-Transgender or Anti-Gender Non-Conforming) Hate Crimes per Month.

Note: ****** Indicating coefficients significant at the 1% level. Coefficients rounded to the nearest ten-thousandths place. P-values rounded to nearest thousandths place. Coefficients on year and state indicators not shown. Full regression results attached in Appendix B.

Of the total 35,366 reported anti-LGBT+ hate crimes in the data, only 1,216 of them are gender-identity-based hate crimes. As previously noted in the Data and Methodology section, the UCR only began recognizing gender identity as a hate crime motivation in 2012. This small number of crimes may help to explain why this regression yields different results than the main regression. The $\beta_{Ever_State_Legal}$ coefficient is negative and not statistically significant in this regression, despite being positive and statistically significant in Regression 1 and Regression 3 (discussed below). The small number of crimes may also explain why the coefficients $\beta_{Population}$, $\beta_{Violent\ Crime}$, and $\beta_{Post\ State\ Legal}$ are about a fifth as large as that in Regression 1 and Regression 3.

Sexual Orientation

Variable	Coefficient	Standard Error	P-value
Post State Legal	0.3190**	0.0257	0.000
Ever State Legal	0.0925**	0.0173	0.000
Post Nation Legal	-0.0049	0.0711	0.945
Non-LGBT Hate Crimes	0.1349**	0.0034	0.000
Population	-0.0169**	0.0010	0.000
Violent Crime	0.0009**	0.0000	0.000

Table 7. Regression 3: Secondary Regression on the Number of Reported Anti-Sexual Orientation Hate Crimes per Month.

Note: ****** Indicating coefficients significant at the 1% level. Coefficients rounded to the nearest ten-thousandths place. P-values rounded to nearest thousandths place. Coefficients on year and state indicators not shown. Full regression results attached in Appendix C.

As expected, since just under 97% of the reported anti-LGBT+ hate crimes in the dataset are sexual orientation-biased crimes, the results of Regression 3, as outlined in Table 7, are very similar to the results found by Regression 1 (Table 5). Like in Regression 1, the coefficients on $\beta_{Post_State_Legal}$, $\beta_{Ever_State_Legal}$, $\beta_{Non_LGBT_HCs}$, and $\beta_{Violent_Crime}$ are all statistically significant and positive. Additionally, in both regressions, $\beta_{Population}$ is statistically significant and negative. The numeric values of the coefficients are also all very similar.

Placebo Regression

Variable	Coefficient	Standard Error	P-value
Post State Legal	-0.0178	0.0559	0.750
Ever State Legal	0.2307**	0.0374	0.000
Post Nation Legal	0.0353	0.1536	0.832
Non-Race/Ethnicity Hate Crimes	0.6214**	0.0133	0.000
Population	-0.0031	0.0022	0.155
Violent Crime	-0.0004**	0.0001	0.000

Table 8. Regression 4: Placebo Regression on the Number of Reported Racially and Ethnically Biased Hate Crimes per Month.

Note: ****** Indicating coefficients significant at the 1% level. Coefficients rounded to the nearest ten-thousandths place. P-values rounded to nearest thousandths place. Coefficients on year and state indicators not shown. Full regression results attached in Appendix D.

The results of this placebo regression suggests that the positive relationship identified in Regressions 1-3 between the legalization of same-sex marriage and the number of anti-LGBT+ hate crimes is not coincidental. Table 8 shows that there is no statistically significant relationship between the $\beta_{Post_State_Legal}$ variable and the number of reported racially motivated hate crimes. In other words, the data indicate that there was no significant change in the number of race-based hate crimes in states before and after their legalization of same-sex marriage. This suggests that there is a unique relationship between the legalization of same-sex marriage and the incidence of anti-LGBT+ hate crimes, since the number of hate crimes committed against groups unrelated to this issue did not increase.

The $\beta_{Ever_State_Legal}$ coefficient is positive and statistically significant, as it was in Regressions 1 and 3. This reveals that there may be some underlying characteristic about the cohort of states that legalized same-sex marriage early that contributes to a higher rate of reported anti-LGBT+ and racially motivated hate crimes. It could be the case that states that eventually legalized same-

sex marriage before *Obergefell vs. Hodges* (2015) consistently have more hate crimes committed within their borders. Alternatively, it is possible that these independently legalizing states have more reliable reporting of all hate crimes, leading to the number of reported anti-LGBT+ and racially biased hate crimes being slightly higher. In any case, this statistically significant difference between the independently legalizing states and the states that legalized it with *Obergefell vs. Hodges* (2015) is controlled for by the $\beta_{Ever_State_Legal}$ coefficient, meaning that the relationship measured by the $\beta_{Post_State_Legal}$ coefficient is not affected by these differences.

The $\beta_{Non_Race/Ethnicity_HCs}$ coefficient indicates that higher rates of reported non-racially motivated hate crimes are correlated with higher rates of reported racially and ethnically motivated hate crimes. Contrastingly, the negative $\beta_{Violent_Crime}$ coefficient suggests that states with higher rates of violent crime are more likely to have lower numbers of reported racially and ethnically biased hate crimes—as opposed to higher numbers of reported anti-LGBT+ hate crimes as shown in Regression 1 (Table 5). Lastly, the $\beta_{Population}$ coefficient is negative, as it was in Regressions 1-3 (Tables 5-7), indicating that states with lower populations have higher numbers of reported anti-LGBT+ hate crimes per person.

HCPA Regression

Variable	Coefficient	Standard Error	P-value
Post State Legal	0.3841**	0.0296	0.000
Ever State Legal	0.0845**	0.0199	0.000
Post Nation Legal	0.0072	0.0818	0.929
Post HCPA Passage	-0.0717	0.0855	0.402
Non-LGBT Hate Crimes	0.1651**	0.0133	0.000
Population	-0.0195**	0.0114	0.000
Violent Crime Rate	0.0011**	0.0022	0.000

Table 9. Regression 5: Regression on the Number of Reported Anti-LGBT+ Hate Crimes per Month Including an Indicator for the Passage of the 2009 Matthew Shepard and James Byrd Jr. Hate Crimes Prevention Act.

Note: ****** Indicating coefficients significant at the 1% level. Coefficients rounded to the nearest ten-thousandths place. P-values rounded to nearest thousandths place. Coefficients on year and state indicators not shown. Full regression results attached in Appendix A.

The results of the sixth regression as displayed in Table 9 highlight that the passage of the HCPA did not precipitate a statistically significant increase in the number of anti-LGBT+ hate crimes reported within states to the Bureau of Justice Statistics through the UCR program per month, when controlling for those states' legalization of same-sex marriage. However, it is important to note that this regression controls for year. This control may account for the lack of statistical significance on. $\beta_{Post HCPA}$.

6. Discussion

The positive and statistically significant coefficients on $\beta_{Post_State_Legal}$ in Regressions 1-3 and in Regression 5 suggest that states experience a near 80% increase in the number of reported anti-LGBT+ hate crimes after same-sex marriage is legalized in that state (Tables 5-7, Table 9). Tables 6 and 7 demonstrate that this relationship is about five times stronger amongst sexualorientation-biased hate crimes than amongst gender-identity-biased hate crimes. This effect size is large; however, the insignificant coefficient on $\beta_{Post_State_Legal}$ in the placebo regression (Table 8) supports the conclusion that the relationship between the same-sex marriage legalization events and the number of reported anti-LGBT+ hate crimes is not coincidental, as the same relationship is not found with other types of hate crimes.

Two potential hypotheses may explain this post-legalization increase in the number of anti-LGBT+ hate crimes. One potential explanation is that states that legalized same-sex marriage earlier than the national legalization experienced a backlash effect to that policy change amongst the bigoted minority within their population, as discussed in the Literature Review section. This ideological backlash might have inspired and galvanized a certain violent or thrill-seeking subset of that bigoted group to lash out in hate-motivated violence against LGBT+ identifying people, raising the number of reported anti-LGBT+ hate crimes in that state.

Alternatively, states that legalized same-sex marriage earlier may have produced a legitimation effect with that policy change. The honoring of the civil rights of homosexual and bisexual residents of these states may have produced a cultural shift in favor of LGBT+ acceptance. This may have manifested in more LGBT+ individuals feeling empowered by their confidence in their legitimate standing in their communities to report acts of hate against. Alternatively, this may have manifested in police forces becoming more receptive to reports of

anti-LGBT+ hate crimes, leading to more of these crimes being reported, documented, and entered into the Bureau of Justice Statistics's UCR dataset. It is also possible that these two phenomena—an increase in the number of committed anti-LGBT+ hate crimes and an increase in reporting reliability—are transpiring concurrently, compiling to create the relatively large effect size suggested by the regression results (Tables 5-7).

Hypothesis 1 for Increase Post-Legalization: Anti-LGBT+ Hate Crime Reporting Reliability Improves

Research shows that there are a variety of factors that influence survivors' willingness to report hate crime incidents. A 2014 UK study of factors discouraging survivors' reporting found that many who experience an anti-LGBT+ hate crime refrain from reporting that experience to the police because they (1) do not recognize that the intimidation, verbal or physical harassment they experience qualifies as a hate crime; (2) fear their report will not yield any significant consequences for the offender(s) or that they will be wasting the police's time; (3) fear that in reporting the crime they will out themselves as LGBT+ (Chakraborti et al. 2014). It is possible that all three of these discouraging factors may have subsided in correlation with the legalization of same-sex marriage.

While it's difficult to quantify Americans' awareness of what qualifies as an anti-LGBT+ hate, there are certainly more helpful and educational resources available than ever before at the disposal of the American LGBT+ community. Founded in 1950, ONE National Gay and Lesbian Archives proudly identifies as the first LGBT+ organization in the United States. Since then, dozens of activist organizations representing one or many facets of the LGBT+ community have emerged. According to Wikipedia's working directory, in the time since 2003—the year of the first state same-sex marriage legalization—the number of national organizations advocating for the rights of some facet of the LGBT+ community in the United States has nearly doubled (Wikimedia Foundation 2023). This statistic does not account for the vast array of state- and local-level activist organizations.

It is possible that this uptick in representative advocacy organizations, concurrent with the rise in legalizations of same-sex marriage across states—may have endowed the LGBT+ Americans with more awareness of their rights—both with respect to what level of harassment rises to the level of a hate crime and with how they can expect law enforcement to handle the reported incident. Furthermore, beyond raising general knowledge, the higher number of advocacy organizations may also give survivors more resources to turn to in the wake of a hate crime incident, thus increasing the chance that they receive the emotional and logistical counsel they need to motivate them to follow through reporting the incident to law enforcement.

Additionally, since research has suggested that the legalization of same-sex marriage increased LGBT+ acceptance amongst the majority of Americans, it is possible that these improving attitudes created less fear amongst survivors of being outted as LGBT+ as a consequence of their reporting (Flores and Barclay 2015). Any one of these factors—whether happening concurrently with or as a result of states' legalization of same-sex marriage—may have increased reporting frequencies. This would create the slight positive correlation between the number of anti-LGBT+ hate crimes reported per month in a state and that state's legalization of same-sex marriage.

Additional data coloring the reporting question come from the NYC Anti Violence Project, which generates annual reports on violence against LGBTQ+ identifying individuals. These reports are constructed with yearly data collected from survivors on hate-based violence incidents they experienced and reported to one of the 24 NCAVP partners. These annual datasets

each report between 3,000 and 1,000 incidents of violence, yielding a relatively small sample size per report. Figure 3 tracks the percentage of anti-LGBTQ+ violence incidents that were reported to an NCAVP partner and also reported to the police.



Figure 3. The Percentage of Anti-LGBTQ+ Anti-Violence Incidents that were Reported to Law Enforcement (Including by the Victim or by Another Party) As a Percentage of Total Anti-LGBTQ+ Anti-Violence Incidents Reported to the NYC Anti-Violence Project from 1998 to 2016 with Trendline.

Figure 3 highlights the significant fluctuations in the reporting rate year to year, as is to be expected with the NYC Anti-Violence Project's small sample size. The linear trend line, however, indicates that there has been a near 10% increase on the average in the percentage of incidents that get reported to police, by either the survivor themselves, or by another party (Figure 3). The increase in reporting may be influenced by improving cultural and social conditions as same-sex marriage becomes legal in states between 2003 and 2015 and,

concurrently, public opinion becomes more favorable of the LGBT+ community (Flores and Barclay 2015).

This increased reporting as a result of increased LGBT+ acceptance may manifest through a variety of paths: survivors may feel more confident they will be taken seriously, police may be more likely to categorize crime incidents as anti-LGBT+ biased-motivated, and witnesses may be more likely to take issue with the hate-based crime and report it to police without the survivor's knowledge. These examples highlight the ways through which state populations' increased acceptance of LGBT+ Americans—partially as a result of those states' legalization of same-sex marriage—may lead to increased reporting of anti-LGBT+ hate crimes in that state.

However, it is important to note that while the figure highlights a marked increase in the percentage of violence incidents being reported in 2009—the year that the Matthew Shepard and James Byrd Jr. Hate Crimes Prevention Act was passed—as discussed in the Results section, the UCR data do not demonstrate that the passage of this law statistically significantly increased the number of anti-LGBT+ hate crimes reported to the police per month (Table 13). For whatever reason, it appears that the violence incidents that were reported to the NYC Violence Project were disproportionately affected by the passage of the Matthew Shepard and James Byrd Jr. Hate Crimes Prevention Act in a way that the larger subset of UCR anti-LGBT+ hate crime incidents were not.

Hypothesis 2 for Increase Post-Legalization: The Number of Anti-LGBT+ Hate Crimes Rises

However, there is also evidence suggesting that the number of anti-LGBT+ hate crimes themselves may have risen. While the NYC Anti-Violence data suggest that the passage of the 2009 Matthew Shepard and James Byrd Jr. Hate Crimes Prevention Act may have increased reporting frequency, the data do not illustrate any improvement in law enforcements' treatment of LGBTQ+ survivors of hate-based violence. In fact, the data show a worsening of reported treatment, characterized by an increase in treatment self-reported by survivors as "hostile" and as "indifferent" and a decreased in treatment reported as "courteous" (Figure 4).



Figure 4: The Percentage of Anti-LGBTQ+ Anti-Violence Incident Survivors' Who Experienced "Courteous," "Indifferent," and "Hostile" Treatment by Police as a Percentage of Anti-LGBTQ+ Survivors that Reported to Police (Self-Reported) from 1998 to 2016 with Trendlines.

Skeptics may be concerned about the self-reported nature of these data on police treatment, arguing that these characterizations may not objectively or accurately describe how law enforcement really treat victims of anti-LGBTQ+ violence. However, any methodological concerns about the reliability of self-reporting can be set aside in this case, for even perceived antagonism by the LGBT+ community from the police may be enough to discourage hate crime reporting. If significant distrust of law enforcement has taken hold within the LGBT community

across the United States, it would be natural to infer that victims within this community would be less likely to report having been victimized by a hate crime. Thus, the only explanation for the rise in anti-LGBT+ hate crimes in the wake of same-sex marriage legalization would be an increase in the frequency of these crimes.

Furthermore, existing research has demonstrated that with racial and ethnic motivated hate crimes, hate crime frequencies rise as the victimized rises in size-based rank in the population (Cikara et al. 2022). Gallup Polls has tracked the percentage of LGBT+ identification amongst Americans annually since 2012, and their findings do not reveal a significant increase before 2015—the critical period for the "Post State Legal" variable. According to the Gallup report, the incidence of self-identifying as LGBT+ within the American population rose from 3.5% in 2012 to just 3.9% in 2015 (Jones 2022). Therefore, it seems unlikely that the increase in anti-LGBT+ hate crimes was motivated by wave of Americans self-identifying as LGBT+ after state legalization decisions. However, since the legalization of same-sex marriage was shown to improve Americans' acceptance of LGB individuals at large, it may have explicitly or implicitly prompted more LGBT+ individuals to be more open about their identities, resulting in seemingly rapid expansion of the visible LGBT+ community. This may have in turn prompted an increase in the number of anti-LGBT+ hate crimes.

However, while the data do not suggest that the number of LGBT-identifying Americans was growing in size significantly during the mid 2010's, the number of lesbian and gay couples certainly was. According to the U.S. Census, the number of same-sex couples living in the same household rose by about 50% between 2008 and 2015 (Scherer 2022). This upward tick in live-in partnerships between same-sex couples may also have increased the visibility of the LGBT+ community, prompting rise in anti-LGBT+ hate crimes. Additionally, existing literature

demonstrates that watershed events can inspire a wave of backlash-inspired hate crimes. While research about this phenomenon within anti-LGBT+ hate crime rates is sparse, experts estimate that in the wake of September 11th, 2001, over 2,000 hate crimes related to the event were committed against anti-Arab and anti-Muslim individuals (Singh 2002). This illuminates a path through which same-sex marriage legalization events may have inspired perpetrators to commit more anti-LGBT hate crimes.

Additional Findings

Taken together, the results of these six regression models reveal a few key findings. Firstly, the large positive coefficients on the general hate crime rate control variable in Regressions 1-5 suggest that month to month changes in the number of reported anti-LGBT+ hate crimes in the UCR data are strongly positively correlated with changes in the number of reported hate crimes within other bias motivation categories (Tables 6-10). This indicates that the rates of reported hate crimes—regardless of motivation type—move largely together. Similarly, the small positive coefficients on the variable controlling for the violent crime rate in Regressions 1-3 and in Regression 5 reveal that in addition to reported anti-LGBT+ hate crimes rising considerably when the general hate crime rate rises, reported anti-LGBT+ hate crimes also rise slightly when the violent crime rate rises (Tables 6-8 and Table 10).

Furthermore, the positive and significant coefficient on $\beta_{Ever_State_Legal}$ in Regressions 1-4 indicates that the cohort of states that legalized same-sex marriage before *Obergefell v. Hodges* (2015) have higher numbers of reported anti-LGBT+ and racially motivated hate crimes. This suggests that these states share one or more characteristics—beyond population size—that lead them to have higher number of reported hate crimes: either through a higher incidence of these crimes or through more reliable reporting. The nature of these characteristics is outside of the scope of this study but could be the subject of further research.

Lastly, the negative and significant coefficient on $\beta_{Population}$ in Regressions 1-3 and in Regressions 5 indicates that states with higher populations have lower numbers of reported anti-LGBT+ hate crimes per person than states with lower populations (Tables 6-8, 10). However, the positive significant coefficient in Regression 4 suggests that this relationship is flipped for racially motivated hate crimes (Table 9).

7. Conclusion

While acceptance of LGBT+ community in the United States has been growing steadily over the last few decades, the community remains one of the most frequently victimized by hate based crimes according to the UCR data collected and distributed by the Bureau of Justice Statistics (Table 1). Of the legislation that state and federal legislatures have implemented to legitimize gay, lesbian, and bisexual individuals, the legalization of same-sex marriage remains one of the most notable. Existing theoretical literature on suggests that legislation events like same-sex marriage legalization—events that grant civil rights to minority groups—can improve, polarize, or worsen public acceptance of these groups (Flores and Barclay 2015). One paper even suggests that U.S. public opinion data seem to reflect an improvement in LGB acceptance after the national legalization (Lewis et al. 2017).

The results of this paper's analysis add further complexity to this story. The coefficient on $\beta_{Post_State_Legal}$ (.3839) in Regression 1, in combination with the similarly positive $\beta_{Post_State_Legal}$ coefficients in Regressions 2 and 3 are all statistically significant at the 1% level. These results indicate that after a state legalized same-sex marriage, that number of anti-LGBT+ hate crimes reported in that state per million people per month rose by about .38. To put this number in context, on average states report .492 anti-LGBT+ hate crimes per million people per month. Therefore, this represents a large relative increase in the number of reported hate crimes.

On their face, these findings appear to contradict the conclusions presented by Lewis and his coauthors in their 2017 paper. This post-legalization increase would seem to imply that—at least amongst the bigoted, violent minority that are willing to commit hateful acts of violence acceptance of anti-LGBT+ people may have gone down, leading to a rise in the number of anti-LGBT+ hate crime offenses. This conclusion is supported by evidence that suggests that hate crime rates against minority groups rise when those groups become relatively more populous. While the number of LGBT+ identifying Americans remained relatively stable, the number of same-sex households rose sharply between 2008 and 2015, potentially making these identity groups more visible in the population, imitating a seeming group population increase. Furthermore, same-sex marriage legalizations at the state and federal level were highly politicized events. These events have been shown to sometimes precipitate a rise in hate crimes against identity groups perceived to be related to the event, as was demonstrated by the spike in anti-Arab and anti-Muslim hate crimes after September 11th, 2001 (Singh 2002).

However, there is another potential explanation for the positive $\beta_{Post_State_Legal}$ coefficient. It is possible that the legalization of same-sex marriage precipitated an increase in the rate of anti-LGBT+ hate crimes that are reported to police. This hypothesis is supported by research that has suggested that the legalization of same-sex marriage increased LGBT+ acceptance amongst the majority of Americans (Flores and Barclay 2015). Perhaps these improving attitudes created less fear amongst survivors of being outed as LGBT+ as a consequence of their reporting. Since existing literature finds that being outed is one of the principal reasons survivors of anti-LGBT+ hate crimes choose not to report, this growth in general LGBT+ acceptance could have diminished survivors fear associated with coming out to their community, thus reducing a significant barrier to reporting. The sharp increase in the number of same-sex couple households between 2008 and 2015 as more states legalize same-sex marriage may have had a similarly positive impact on survivors' confidence and willingness to report, thereby further improving reporting reliability.

Suggestions for Further Study

Additional research is needed to uncover the root explanation for the increase in the number of reported anti-LGBT+ hate crimes per million people per month in states after their legalization of same-sex marriage. Further literature should focus on exploring the ways that states' legalization of same-sex marriage may have influenced reporting frequencies or law enforcement's receptiveness to reports of anti-LGBT+ hate crimes. Alternatively, further qualitative studies modeled after the 2002 McDevitt study could specifically interview anti-LGBT+ hate crime perpetrators to investigate their motivations and discover whether same-sex marriage legalizations could have served as a motivating event for offenses.

Furthermore, since hate crimes in general—and even more so anti-LGBT+ hate crimes—are notoriously underreported, future papers attempting to replicate this analysis utilizing different U.S. crime datasets would help to corroborate this paper's conclusions. For example, a complimentary analysis could be conducted on data from the Bureau of Justice Statistics' National Crime Victimization Survey: a representative sample of 100,000 U.S. households. Because of the NCVS's distinct collection methodology, this hypothetical study would complement the current analysis well. Furthermore, the NCVS data may partially avoid the underreporting issues embedded in the UCR data. Furthermore, since the hate crime victimizations in the NCVS data are self-reported, this would eliminate the issue of miscategorization of the crimes by police.

Additionally, those contemplating further research should consider conducting a similar analysis on reported hate crimes in other countries that have legalized same-sex marriage. An internationally comparative study could be arranged, comparing reported anti-LGBT+ hate crime

rates in a variety of the 30 nations in which same-sex marriage is currently legal before and after their respective legalization decisions (Masci 2019).

Lastly, since this paper suggests that the expansion of civil rights of LGB people may precede an increase in the number of reported anti-LGBT+ hate crimes, future research should empirically investigate different states' expansion and restriction of the civil liberties of transgender people and explore whether these changes in legal rights are correlated with any changes in the incidence of reported transphobic hate crimes.

8. References

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9. Appendices

Appendix A. Full Results of Regression 1: Primary Regression on the Number of Reported Anti-LGBT+ ("Anti-Gay Male," "Anti-Gay Female," "Anti-Bisexual," "Anti-LGBT Group," "Anti-Transgender," or "Anti-Gender Non-Conforming") Hate Crimes per Million People per Month.

Observations		14,850	R-squared		0.203
Variable	Coefficient (SE)	Variable	Coefficient (SE)	Variable	Coefficient (SE)
post_state_legal	0.384***	1998.year	0.349***	2010.year	0.558***
	-0.0296		-0.0709		-0.0699
ever_state_legal	0.0847***	1999.year	0.403***	2011.year	0.611***
	-0.0199		-0.0703		-0.0703
post_nation_legal	0.00729	2000.year	0.463***	2012.year	0.615***
	-0.0818		-0.0703		-0.0707
non LGBT HCs	0.165***	2001.year	0.415***	2013.year	0.538***
	-0.00389		-0.07		-0.0708
pop_div_1M	-0.0195***	2002.year	0.458***	2014.year	0.489***
	-0.00114		-0.0701		-0.072
violent_crime	0.00111***	2003.year	0.478***	2015.year	0.322***
	-3.30E-05		-0.0699		-0.0839
1992.year	0.0691	2004.year	0.472***	2016.year	0.306***
	-0.0749		-0.0696		-0.11
1993.year	0.0341	2005.year	0.418***	2017.year	0.305***
	-0.0724		-0.0699		-0.11
1994.year	0.106	2006.year	0.436***	2018.year	0.425***
	-0.0736		-0.0696		-0.109
1995.year	0.128*	2007.year	0.478***	2019.year	0.447***
	-0.0711		-0.0694		-0.109
1996.year	0.102	2008.year	0.481***	2020.year	0.313***
	-0.0709		-0.0695		-0.109
1997.year	0.247***	2009.year	0.528***	Constant	-0.764***
	-0.0709		-0.0698		-0.0635

Observations		14,850	R-squared		0.186
Variable	Coefficient (SE)	Variable	Coefficient (SE)	Variable	Coefficient (SE)
_post_state_legal	0.0648***	1998.year	0.0542***	2010.year	0.0788***
	-0.00841		-0.0201		-0.0198
ever_state_legal	-0.00785	1999.year	0.0676***	2011.year	0.0841***
	-0.00566		-0.02		-0.02
_post_nation_legal	0.0122	2000.year	0.0669***	2012.year	0.0801***
	-0.0232		-0.0199		-0.0201
non_LGBT_HCs	0.0303***	2001.year	0.0533***	2013.year	0.118***
	-0.0011		-0.0199		-0.0201
_pop_div_1M	-0.00267***	2002.year	0.0727***	2014.year	0.153***
	-0.000324		-0.0199		-0.0204
violent_crime	0.000212***	2003.year	0.0677***	2015.year	0.0992***
	-9.38E-06		-0.0198		-0.0238
1992.year	-0.0111	2004.year	0.0654***	2016.year	0.108***
	-0.0213		-0.0197		-0.0311
1993.year	-0.00172	2005.year	0.0642***	2017.year	0.0857***
	-0.0205		-0.0198		-0.0312
1994.year	0.0212	2006.year	0.0564***	2018.year	0.146***
	-0.0209		-0.0198		-0.0311
1995.year	0.0183	2007.year	0.0626***	2019.year	0.149***
	-0.0202		-0.0197		-0.031
1996.year	0.0219	2008.year	0.0644***	2020.year	0.144***
	-0.0201		-0.0197		-0.031
1997.year	0.0394*	2009.year	0.0750***	Constant	-0.200***
	-0.0201		-0.0198		-0.018

Appendix B. Full Results of Regression 2: Secondary Regression on the Number of Reported Anti-Non-Cisgender Gender Identity ("Anti-Transgender" or "Anti-Gender Non-Conforming") Hate Crimes per Million People per Month.

Observations		14,850	R-squared		0.111
Variable	Coefficient (SE)	Variable	Coefficient (SE)	Variable	Coefficient (SE)
post_state_legal	0.319***	1998.year	0.295***	2010.year	0.479***
	-0.0257		-0.0616		-0.0607
ever_state_legal	0.0925***	1999.year	0.335***	2011.year	0.526***
	-0.0173		-0.0611		-0.0611
_post_nation_legal	-0.00494	2000.year	0.396***	2012.year	0.535***
	-0.0711		-0.0611		-0.0614
non_LGBT_HCs	0.135***	2001.year	0.362***	2013.year	0.420***
	-0.00338		-0.0608		-0.0615
pop div 1M	-0.0169***	2002.year	0.385***	2014.year	0.336***
	-0.000991		-0.061		-0.0626
violent_crime	0.000903***	2003.year	0.411***	2015.year	0.223***
	-2.87E-05		-0.0607		-0.0729
1992.year	0.0802	2004.year	0.406***	2016.year	0.198**
	-0.0651		-0.0605		-0.0953
1993.year	0.0358	2005.year	0.354***	2017.year	0.219**
	-0.0629		-0.0607		-0.0954
1994.year	0.0848	2006.year	0.380***	2018.year	0.279***
	-0.064		-0.0605		-0.0952
1995.year	0.110*	2007.year	0.416***	2019.year	0.299***
	-0.0618		-0.0603		-0.0949
1996.year	0.08	2008.year	0.417***	2020.year	0.168*
	-0.0616		-0.0604	~	-0.0949
1997.year	0.207***	2009.year	0.453***	Constant	-0.564***
	-0.0616	2	-0.0607		-0.0552

Appendix C. Full Results of Regression 3: Secondary Regression on the Number of ReportedAnti-Non-Heterosexual Sexual Orientation Hate Crimes ("Anti-Gay Male," "Anti-Gay Female,""Anti-Bisexual," "Anti-LGBT Group") per Million People per Month.Observations14.850R-sauared0.111

Observations		14,850	R-squared		0.179
Variable	Coefficient (SE)	Variable	Coefficient (SE)	Variable	Coefficient (SE)
_post_state_legal	-0.0178	1998.year	-0.713***	2010.year	-1.264***
	-0.0559		-0.133		-0.131
_ever_state_legal	0.231***	1999.year	-0.839***	2011.year	-1.383***
	-0.0374		-0.132		-0.132
post_nation_legal	0.0325	2000.year	-0.906***	2012.year	-1.313***
	-0.154		-0.132		-0.133
nonrace/ethHCs	0.621***	2001.year	-0.743***	2013.year	-1.403***
	-0.0133		-0.132		-0.133
_pop_div_1M	-0.00308	2002.year	-1.148***	2014.year	-1.534***
	-0.00217		-0.132		-0.135
violent_crime	-0.000419***	2003.year	-0.894***	2015.year	-1.548***
	-6.38E-05		-0.131		-0.157
1992.year	0.183	2004.year	-0.915***	2016.year	-1.522***
	-0.141		-0.131		-0.206
1993.year	0.0545	2005.year	-0.853***	2017.year	-1.137***
	-0.136		-0.131		-0.206
1994.year	-0.359***	2006.year	-0.802***	2018.year	-1.286***
	-0.138		-0.131		-0.205
1995.year	-0.113	2007.year	-0.945***	2019.year	-1.219***
	-0.134		-0.13		-0.205
1996.year	-0.127	2008.year	-0.962***	2020.year	-0.741***
	-0.133		-0.131		-0.205
1997.year	-0.515***	2009.year	-1.135***	Constant	2.461***
	-0.133		-0.131		-0.118

Appendix D. Full Results of Regression 4: Placebo Regression on the Number of Reported Racially or Ethnically Biased Hate Crimes per Million People per Month.

Observations		14,850	R-squared		0.203
Variable	Coefficient (SE)	Variable	Coefficient (SE)	Variable	Coefficient (SE)
_post_HCPA	-0.0717	1997.year	0.247***	2009.year	0.552***
	-0.0855		-0.0709		-0.0753
_post_state_legal	0.384***	1998.year	0.349***	2010.year	0.629***
	-0.0296		-0.0709		-0.11
ever_state_legal	0.0845***	1999.year	0.403***	2011.year	0.682***
	-0.0199		-0.0703		-0.111
post_nation_legal	0.00728	2000.year	0.463***	2012.year	0.686***
	-0.0818		-0.0703		-0.111
non_LGBT_HCs	0.165***	2001.year	0.415***	2013.year	0.609***
	-0.00389		-0.07		-0.111
_pop_div_1M	-0.0195***	2002.year	0.458***	2014.year	0.560***
	-0.00114		-0.0701		-0.112
violent_crime	0.00111***	2003.year	0.478***	2015.year	0.393***
	-3.30E-05		-0.0699		-0.12
1992.year	0.0691	2004.year	0.472***	2016.year	0.377***
	-0.0749		-0.0696		-0.139
1993.year	0.0341	2005.year	0.418***	2017.year	0.376***
	-0.0724		-0.0699		-0.139
1994.year	0.106	2006.year	0.436***	2018.year	0.497***
	-0.0736		-0.0696		-0.139
1995.year	0.128*	2007.year	0.478***	2019.year	0.518***
	-0.0711		-0.0694		-0.139
1996.year	0.102	2008.year	0.481***	2020.year	0.384***
	-0.0709		-0.0695		-0.138
				Constant	-0.764***
					-0.0635

Appendix E. Full Results of Regression 5: 2009 Hate Crime Prevention Act Regression on the Number of Reported Anti-LGBT+ Hate Crimes per Million People per Month.

Observations		14,850	R- squared		0.203
Variable	Coefficient (SE)	Variable	Coefficient (SE)	Variable	Coefficient (SE)
post_state_legal	0.00393	_Iyear_2004	-0.229***	_Istate_2	0.131
	-0.0256		-0.0579		-0.102
post nation legal	0.0167	Iyear 2005	-0.261***	Istate 3	0.478***
	-0.0655		-0.0581		-0.0864
non LGBT HCs	0.111***	_Iyear_2006	-0.158***	_Istate_4	-0.0579
	-0.00377		-0.0577		-0.0915
pop_div_1M	-0.113***	_Iyear_2007	-0.142**	_Istate_5	4.164***
	-0.0087		-0.0577		-0.289
violent_crime	-0.00215***	_Iyear_2008	-0.161***	_Istate_6	-0.0135
	-6.97E-05		-0.0579		-0.0858
_Iyear_1992	0.0909	_Iyear_2009	-0.180***	_Istate_7	-0.350***
	-0.0602		-0.0585		-0.0874
_Iyear_1993	0.0403	_Iyear_2010	-0.207***	_Istate_8	6.190***
	-0.0582		-0.059		-0.112
_Iyear_1994	0.0192	_Iyear_2011	-0.203***	_Istate_9	0.318***
	-0.0592		-0.0596		-0.0924
_Iyear_1995	-0.0503	_Iyear_2012	-0.174***	_Istate_10	2.021***
	-0.0573		-0.0598		-0.148
_Iyear_1996	-0.181***	_Iyear_2013	-0.230***	_Istate_11	0.578***
	-0.0573		-0.06		-0.0947
_Iyear_1997	-0.118**	_Iyear_2014	-0.256***	_Istate_12	-0.661***
	-0.0576		-0.0611		-0.153
_Iyear_1998	-0.122**	_Iyear_2015	-0.252***	_Istate_13	-0.822***
	-0.0579		-0.0702		-0.0933
_Iyear_1999	-0.197***	_Iyear_2016	-0.207**	_Istate_14	1.244***
	-0.0579		-0.0901		-0.112
_Iyear_2000	-0.150***	_Iyear_2017	-0.216**	_Istate_15	0.0545
	-0.0579		-0.0902		-0.0872
_Iyear_2001	-0.185***	_Iyear_2018	-0.111	_Istate_16	-0.529***
	-0.0578		-0.0902		-0.0908
_Iyear_2002	-0.196***	_Iyear_2019	-0.0798	_Istate_17	-0.257***
	-0.058		-0.09		-0.0889
_Iyear_2003	-0.220***	Iyear_2020	-0.12	_Istate_18	-0.415***
	-0.058		-0.0899		-0.0882

Appendix F. Full Results of State Indicator Regression on the Number of Reported Anti-LGBT+ Hate Crimes per Million People per Month. Cont. on Page 61.

Variable	Coefficient (SE)	Variable	Coefficient (SE)
_Istate_19	0.443***	_Istate_36	0.602***
	-0.0911		-0.104
_Istate_20	-0.237**	_Istate_37	-0.0708
	-0.0968		-0.0863
_Istate_21	0.397***	_Istate_38	0.0662
	-0.0876		-0.0871
_Istate_22	0.765***	_Istate_39	0.651***
	-0.089		-0.109
_Istate_23	0.794***	_Istate_40	-0.322***
	-0.0987		-0.0956
_Istate_24	-0.166*	_Istate_41	0.553***
	-0.0879		-0.0872
_Istate_25	-0.590***	_Istate_42	-0.679***
	-0.114		-0.0989
_Istate_26	0.291***	_Istate_43	0.759***
	-0.0862		-0.0891
_Istate_27	-0.499***	_Istate_44	2.319***
	-0.0968		-0.185
_Istate_28	-0.544***	_Istate_45	-0.625***
	-0.0945		-0.0901
_Istate_29	0.309***	_Istate_46	-0.490***
	-0.0881		-0.102
_Istate_30	-0.686***	_Istate_47	-0.0822
	-0.0981		-0.0899
_Istate_31	0.0127	_Istate_48	0.353***
	-0.0945		-0.0875
_Istate_32	0.436***	_Istate_49	-0.591***
	-0.093		-0.0932
_Istate_33	1.887***	_Istate_50	-0.252***
	-0.155		-0.0876
_Istate_34	0.482***	_Istate_51	-0.682***
	-0.0943		-0.113
_Istate_35	-0.878***	Constant	1.709***
	-0.103		-0.11

Appendix F (Cont.). Full Results of State Indicator Regression. Cont. from Page 60