The Relationship between Facebook and Anti-Semitic Hate Crimes in the U.S.

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Spring 2022

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Bachelor of Science in Public Affairs

Public Management and Leadership

Table of Contents

Abstract

Modern anti-Semitism is fundamentally distinct from the pre-Holocaust era, with the main perpetrators of anti-Semitic motivated acts and rhetoric now being individual citizens as opposed to governments and authority figures. To appropriately explore this phenomena, social media has become a crucial area of study, linking online speech to real-world action. The birth and fast growth of social media has allowed for the ability to immediately share information across vast audiences, blurring the lines between fact and fiction. I explored whether or not there is a correlation between social media use, specifically Facebook, and anti-Semitic hate crimes in the United States to gain a deeper understanding of social media's role in current anti-Semitic acts. To conduct this study, I collected data about anti-Semitic hate crimes and active Facebook users in the U.S. from 2003 to 2019. Collecting this information involved utilization of the FBI's Uniform Crime Reporting (UCR) program and data on Facebook users from Facebook Annual Reports. Once this data was collected, I ran regressions to explore potential correlations and used an interrupted time series model to display trends. Previous research on this subject typically involved large collections of social media posts over short periods of time. Therefore, by studying hate crime data and comparing this to Facebook usage over multiple years, this study provides an alternative approach to understanding the role social media may play in anti-Semitic crime rates. After running single and multi-variate regressions as well as observing trends in graphs, the results show that there is a statistically significant correlation between the number of Facebook users and anti-Semitic hate crimes in the United States, yet the correlation is negative.

Introduction

Anti-Semitism is defined as the hostility to or prejudice against Jewish people. Though this term was coined in modern times, hostility towards Jews potentially dates back to the beginning of Jewish history with the first massacre of the Jewish people occurring in the 10th century. In the Middle Ages, Jews were blamed for poisoning wells that caused the black plague to devastate Europe. Later numerous European governments expunged Jews from society and forced them into segregated districts called ghettos. "The second half of the 19th century saw the emergence of yet another kind of antisemitism. At its core was the theory that Jews were not merely a religious group but a separate "race"—Semites—set apart because of genetically inherited characteristics" (Why the Jews: History of Antisemitism, n.d). As a result, this allowed for persecution to live on from generation to generation even with Jewish assimilation into society. In Nazi Germany, Jewish persecution was taken to extreme levels. This included government sanctioned vandalism, separation from society, and death camps. Despite the horrors of the Holocaust, anti-Semitism remains pervasive today in societies across the globe.

In present times, anti-Semitism is fundamentally different than it was before the Holocaust because anti-Semitic violence and rhetoric are typically not perpetrated by governments. Instead, ordinary citizens are more commonly the perpetrators of anti-Semitic violence in modern societies. There is concern among scholars that, with the integration of social media and free flow of information on a global scale, these new mechanisms of communication will have an impact on anti-Semitic behavior, specifically hate crimes. Hate crimes are a unique sub-section of crime in which an individual is attacked based upon their association within a larger group. Hate crimes are often targeted at people or property based upon their race, religion, disability status, sexual orientation, ethnicity, gender, or gender

identity. Typically, the victims of hate crimes are symbolic and representative of their larger group, which may curtail the behaviors and movement of other members associated with the victim (Craig, 2002). These specific crimes often inflict greater psychological distress upon their victims and potentially create a climate of fear among the entire targeted group. In recent years, as social media has become more pervasive in society, scholars have drawn attention to hate speech's effect on real-world action. "Perry and Olsson found that the web created a new common space that fostered a 'collective identity' for previously fractured hate groups, strengthening their domestic presence in countries such as the United States, Germany and Sweden" (Williams and Burnap, 2016). With the presence of hate groups, extremists, and people who foster anti-Semitic beliefs, social media poses the challenge of being able to decipher fact from fiction, which can easily be exploited (Dealing with online Anti-Semitism-9, n.d).

To gain a deeper understanding of the role that social media plays in anti-Semitic hate crimes, I am exploring whether there is a correlation between social media use, specifically Facebook, and anti-Semitic hate crimes in the United States. To conduct this research, I utilized the FBI's UCR data and statistics on annual Facebook users. I compared this data longitudinally from 2003 to 2019 to observe any potential trends or correlations. Previous research on this topic often involved collection of large amounts of sample data from social media that contain hate speech rhetoric over a short period of time and then provided a subsequent analysis that revealed the online hate speech's implications on society. By looking at hate crime data and comparing it to trends in social media use from inception to 2019, it will provide an alternate perspective on a topic that is crucial to maintaining safety in the United States. After conducting my research, the results showed that there is a statistically significant negative correlation

between Facebook use and anti-Semitic hate crimes in the United States. This shows that as Facebook users increased anti-Semitic hate crimes decreased.

Literature Review

Anti-Semitism

This study adds to research that has been conducted regarding the relationship between social media use and anti-Semitic hate crimes in the United States. Considerable literature has been devoted to the study of minority groups based on ethnicity, religion, race, and related identity-based bias and discrimination. Yet, there has been significantly less focus on anti-Semitic motivated incidents. Additionally, most of the literature on anti-Semitic action has been concentrated in Europe instead of the United States. Despite this, after the Holocaust, the United States has become home to the largest population of Jews in the world. To truly understand anti-Semitism on a broad scale encompassing the majority of the Jewish people, the United States is a natural choice on which to focus research (Feinberg, 2020). In the United States, anti-Semitism is not uniform among all demographic groups and locations. According to "From Anti-Semitism to Philosemitism? Trends in American Attitudes towards Jews from 1964 to 2016", black people tends to exhibit higher levels of anti-Semitism than white people, there is less antisemitism among older adults compared with younger adults, and that over time Catholics have had fewer positive feelings towards Jews, while non-Catholics have become more positive (Cohen, J, 2018). Despite these general trends, the reasoning behind anti-Semitic thoughts and action may not remain uniform among different demographic groups. Often anti-Semitism aligns with resentment and conspirational notions of control and domination, which can be exacerbated by

poor economic conditions tied with perceived Jewish wealth and market control (Feinberg, 2020). Therefore, though certain groups of people in society may statistically show more explicit prejudice towards Jewish people, other conditions may also play a vital role in anti-Semitic behavior. It is also crucial to note that Jewish people in the United States today are shown to be well-represented in positions of power, yet survey research shows that they still feel the impacts of persecution. Looking deeper into the reasoning behind these phenomena, research in "Perceptions of Anti-Semitism among American Jews, 2000-05, a Survey Analysis" find that characteristics of individuals and attributes of the environment affect Jewish people's perceptions of anti-Semitism (Cohen, J.E, 2010). If a Jewish person is more involved in the Jewish community and experiences anti-Semitic action firsthand, they are ultimately more likely to feel persecuted against due to religious beliefs. Despite these factors, American Jews' feelings of persecution and fear are not completely unwarranted. "According to the Anti-Defamation League's (ADL) polling, 10% of adult Americans (some 24 million people) harbor explicit anti-Semitic attitudes and beliefs" (Feinberg, 2020). Illustrating that, though Jewish people do not face as many social barriers as other minority groups, they still remain targeted in society.

Social Media

Due to the prevalence of social media in society today, many social scientists are concerned about action mirroring online rhetoric. This phenomena results in a need to better understand whether or not there is a link between social media and real-world efforts (Zannettou, et al., 2020). Despite the fact that not all people exposed to hate material online commit hate crimes, those who routinely work with hate offenders agree that perpetrators of hate crimes are likely to have been exposed to hate material before committing their crimes (Ozalp, et al., 2020).

This creates concern that the increase of social media use will foster an environment for increased exposure to beliefs that may be detrimental for society, specifically for minority groups. "In the United States, online sources, including social media, now outpace traditional press outlets for news consumption" (Williams, et al., 2020). According to the Pew Research Center, about a third of U.S. adults (36%) say they regularly get news from Facebook (Gramlich, 2021). These conditions allow for news to blur with non-factual and opinion-based rhetoric that lacks accountability. With the large increase of social media use in society, studies such as "Belonging and Loneliness in Cyberspace: Impacts of Social Media on Adolescents' Well-Being" have addressed the concept that social media has become a tool used by young people to develop social connections and foster a sense of belonging (Smith, et al., 2021). This may be one of the many mechanisms that exposes people to anti-Semitic ideals that may potentially lead to offline action. Extremists can take advantage of this landscape "in an attempt to increase polarization online hoping that it will spill offline in the form of votes, financial support and participation in rallies" (Williams, et al., 2020). For example, "the founder of the Neo-Nazi website Daily Stormer, which receives millions of visitors per month, explicitly shared his motivations: Fear. Now is the time for it . . . . We want these people to feel unwanted. We want them to feel that everything around them is against them. And we want them to be afraid" (Feinberg, 2020). Social media allows for websites, like the Daily Stormer, to reach wide audiences and validate the opinions of people who harbor anti-Semitic values. Additionally, it exposes people who are searching for a sense of belonging to anti-Semitic messaging.

Research Approach

Though there is research regarding the connection between social media and anti-Semitic hate crimes, the majority of the sources are not focused solely on the United States. In addition, the method used to study the relationship between these two variables often involves collecting a large dataset of tweets and analyzing their content. For example, "Antisemitism on Twitter: Collective Efficacy and the Role of Community Organizations in Challenging Online Hate Speech" is a study that located 2.7 million tweets from UK-based users from 2015 to 2016. They utilized machine learning to classify anti-Semitic content to produce findings that would increase online collective efficacy and counter hate speech on social media (Ozalp, et al., 2020). Additionally, in "Hate Lingo: A Target-Based Linguistic Analysis of Hate Speech in Social Media", scholars curated a dataset of 28,318 "directed" hate speech tweets and 331 "generalized" hate speech tweets to explore the different forms of hate speech based on the target of hate. This study provided a data-driven analysis of the nuances of online-hate speech in order to contribute to hate speech detection and a deeper understanding of hate speech's social implications (ElSherief, et al., 2018). This approach allows for researchers to focus on specific instances in which hate speech was used and make connections to real-world action. For this research, I am taking an alternative approach in which I collected data on hate crimes over long periods of time and related that data to the number of people on social media in those corresponding time periods. Using this design method provides a unique technique to discover whether or not the phenomena studied produces similar results. Tweet collection provides the benefit of collecting a dataset that will ultimately extract anti-Semitic content, though it does not explore overall trends since social media's conception. I am choosing to instead explore these longitudinal trends to fill a gap in the existing literature.

Hypothesis

Before conducting my research, I hypothesized that my results would show a correlation between Facebook use and anti-Semitic hate crimes in the United States. Previous research, though not completely aligned with the way that I conducted my study, show both inconclusive results as well as a connection between online rhetoric targeted at Jewish people and real-world anti-Semitic action. Research linking social media use and hate crimes has been conducted using a variety of methods and there is a general consensus that action online is not separate from offline attitudes. Yet, this study is specific because it focuses on one particular group of people in one country, therefore, it may be more challenging to prove a correlation between Facebook use and anti-Semitic hate crimes. Additionally, I observed overall trends in the variables and compared them to one another, which does not allow for gathering of Facebook content, yet may more accurately display data longitudinally. Despite the variations that this particular study has from previous work, I still hypothesized that the results would indicate that a correlation is prevalent.

Data and Methods

Measures

To understand if there is a correlation between anti-Semitic hate crimes and social media use in the United States, I compared the amount and severity of hate crimes over a specific period of time during which social media has become prevalent in U.S. citizen's lives. To measure this relationship, my independent variable was social media, specifically Facebook. Operationalization of the independent variable involved categorizing use of Facebook into two

groups. First is a pre-50% threshold of people in the United States on Facebook and second is a post-50% threshold of the United States population on this application. By stratifying the data into these two groups, I will be able to observe potential changes in the data before and after the majority of the population was on Facebook. The dependent variable was anti-Semitic hate crimes in the United States, which was operationalized through the utilization of the Uniform Crime Reporting (UCR) program conducted by the FBI.

Data

The UCR program is a running record, where data is continuously updated over long periods of time and provided in annual reports. This nationwide program encompasses over 18,000 law enforcement agencies reporting crime statistics. Each year, law enforcement agencies in the participating program represent millions of U.S. inhabitants. The methodology that the UCR Program uses defines religious bias as "a performed negative opinion or attitude towards a group of persons who share the same religious beliefs regarding the origin and purpose of the universe and the existence or nonexistence of a supreme being" (FBI, 2018). The UCR program defines Jewish/Judaism as "a person who identifies himself or herself as a member of the religious and/or ethnic group that descended from the ancient Hebrews and is characterized by belief in one transcendent God who revealed himself to Abraham, Moses, and the Hebrew prophets. Jewish religious practice is based on the Hebrew Scriptures and rabbinic laws and customs" (FBI, 2018).

Additionally, the UCR program recognizes that it is difficult to understand the motivations behind a crime, therefore, bias is only reported if the investigation reveals sufficient evidence that the crime was motivated by bias. The program has created a list of facts that are supportive of indicating bias:

1) “The offender and the victim were of different race, religion, disability, sexual orientation, ethnicity, gender, and/or gender identity

2) Bias-related oral comments, written statements, or gestures were made by the offender indicating his or her bias

3) Bias-related drawings, markings, symbols, or graffiti were left at the crime scene

4) Certain objects, items, or things which indicate bias were used

5) The victim is a member of a specific group that is overwhelmingly outnumbered by other residents in the neighborhood where the victim lives, and the incident took place

6) The victim was visiting a neighborhood where previous hate crimes had been committed because of race, religion, disability, sexual orientation, ethnicity, gender, or gender identity and where tensions remained high against the victim’s group

7) Several incidents occurred in the same locality, at or about the same time, and the victims were all of the same race, religion, sexual orientation, ethnicity, gender, or gender identity

8) A substantial portion of the community where the crime occurred perceived that the incident was motivated by bias

9) The victim was engaged in activities related to his or her race, religion, disability, sexual orientation, ethnicity, gender, or gender identity

10) The incident coincided with a holiday or a date of significance relating to a particular race, religion, disability, sexual orientation, ethnicity, gender, or gender identity

11) The offender was previously involved in a similar hate crime or is a hate group member

12) There were indications that a hate group was involved

13) A historically established animosity existed between the victim's and the offender's groups

14) The victim, although not a member of the targeted racial, religious, disability, sexual orientation, ethnicity, gender, or gender identity, was a member of an advocacy group supporting the victim group (FBI, 2018)"

The FBI's UCR Program provides nominal data, which contains statistics regarding the number of anti-Semitic hate crimes yearly as well as stratified based upon offense type. Utilization of this data provided me the basis to understand fluctuations in the number of crimes as well as the severity of crimes over time. For the purposes of this study, UCR program data was collected from 2003 to 2019 focusing specifically on crimes targeted at Jewish people.

For the data on Facebook users, I utilized Facebook's annual reports to extract data regarding how many active users were on the platform each year from 2003 to 2019. I chose to study Facebook, specifically, because it was the pioneer for social media platforms that paved the path for an increasingly connected world. According to the Pew Research Center, the number of users on Facebook has also consistently increased over the years and is the social media platform with the highest percentage of adult users daily ("Demographics of Social Media Users and Adoption in the United States", 2021). By focusing my study on Facebook, it allowed for the results to reflect the use of the platform with the longest amount of user engagement over the last 18 years.

Utilization of a Quasi-Experiment

The research design that was the most fitting to measure the correlation between social media use and anti-Semitic hate crimes in the United States was an interrupted time series. The

interrupted time series model gave me the ability to take existing UCR data and then create pre-tests and post-tests based on social media users over time to observe changes in that data. By using this design, I was able to explore changes before and after an interruption, which in this study is when social media reached the majority of the population. Then, I was able to use this design to analyze potential differences in anti-Semitic motivated crimes. Additionally, the interrupted time series model did not require experimental control or manipulation of treatment, which would not be feasible or align with the way that I conducted my study.

Control Variables

As part of my research, I wanted to control for other variables that may also impact anti-Semitic hate crime rates in the United States. The first factor that I controlled for was used to gauge potential impacts that the conflict between Israelis and Palestinians have on Jewish perceptions. To quantify this, I created a set of criteria that may either reflect positively towards Israel or negatively toward Israel.

- *Positive Reflection on Israel:*
    - Peace talks
    - Ceasefires
    - Decrease in violence, determined by…
        - Withdrawal of Israeli forces
        - Withdrawal of colonies in the West Bank
    - Acts that potentially justify Israeli violence or increase Israeli sympathy among the public
        - Assassinations of Israeli leaders
        - Suicide bombing attacks of Israelis
- *Negative Reflection on Israel:*
    - Increase in violence, determined by…

- Assassinations of Palestinians
- Attacks in the form of rockets and airstrikes directed towards Palestinians
- Troops killing Palestinians
- Wars between Israel and other Middle Eastern countries

  - Israeli increased occupation in the West Bank and Gaza Strip
  - Israeli implementation of blockades

Year	Positive Israeli Reflection (Number of events)	Negative Israeli Reflection (Number of events)
2003	2	1
2004	4	2
2005	2	1
2006	0	1
2007	0	1
2008	1	1
2009	1	0
2010	0	1
2011	0	0
2012	1	1
2013	0	0
2014	1	1
2015	1	1
2016	0	0
2017	1	0
2018	1	0
2019	0	0

The data shown to the left represents the number of events that either reflect positively or negatively for Israel over the span of the study. It is also important to note that, each year, there are continuous increases and decreases in violence between Palestinians and Israelis. Therefore, the data collected does not represent each suicide bomb fired or individual airstrike. Alternatively, it focuses on overall notable increases in violence between Israelis and Palestinians. For example, in 2015, the 1 displayed under negative reflection and positive reflection of Israel represents an overall escalation of violence between Israelis and Palestinians that spanned two months. This data is used to display overall trends that may help to explain increases and decreases in attitudes towards Israelis, as opposed to highlighting individual acts of violence.

The second control variable in this study portrays changes in the political environment within the United States. I chose to control for changes in political power because political instability or increased polarization stemming from political leaders may impact societal

attitudes towards minority groups. The data that I utilized encompassed presidential parties, senate majority parties, and house majority parties spanning the period of my study. Below is a chart showcasing these specific control variables.

Year	Presidential Party	Senate Majority Party	House Majority Party
2003	Repub.	Repub.	Repub.
2004	Repub.	Repub.	Repub.
2005	Repub.	Repub.	Repub.
2006	Repub.	Repub.	Repub.
2007	Repub.	Repub.	Repub.
2008	Repub.	Dem.	Dem.
2009	Repub.	Dem.	Dem.
2010	Dem.	Dem.	Dem.
2011	Dem.	Dem.	Dem.
2012	Dem.	Dem.	Repub.
2013	Dem.	Dem.	Repub.
2014	Dem.	Dem.	Repub.
2015	Dem.	Dem.	Repub.
2016	Dem.	Repub.	Repub.
2017	Dem.	Repub.	Repub.
2018	Repub.	Repub.	Repub.
2019	Repub.	Repub.	Repub.

Research Limitations

Despite the addition of some controls, this study also had a variety of limitations. First, I was limited in the ability to control for all confounding variables that may have an effect on anti-

Semitic hate crime rates. For example, a variety of other factors that may have an impact on anti-Semitic hate crimes are the prevalence of radical groups, the circulation of Jewish stereotypes, the state of the economy, and more. Additionally, the criteria used to define my control variables is somewhat subjective because I personally conducted research to create this criterion. It is also crucial to consider that, by design, the UCR program is partially flawed because it generally under-represents the number of true hate crimes in the United States. This under-reporting occurs because the program relies on crime reporting to the police, which in many cases is not an accurate representation of the number of crimes that truly take place. Additionally, I would ideally have liked to collect and analyze the entire scope of anti-Semitic rhetoric on Facebook and compared that to hate crimes, yet it was unattainable given the time and resources for this research study. It is also crucial to mention that Facebook is not the only social media platform and it may be possible that there is a correlation between anti-Semitic hate crimes and social media use in general.

Analysis/Results

Regressions

To interpret my data, I utilized SPSS software in which I ran single and multi-variate regressions. The first single regression involved Facebook users as my independent variable and anti-Jewish incidents as my dependent variable. Both variables are analyzed as a rate per 100,000 people. Below is the SPSS output for this regression.

Anti-Jewish Incidents Rate

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Facebook-Rate[b]	.	Enter

a. Dependent Variable: AntiJewish-Incidents Rate

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.575[a]	.331	.286	.04212

a. Predictors: (Constant), Facebook-Rate

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.013	1	.013	7.420	.016[b]
	Residual	.027	15	.002		
	Total	.040	16			

a. Dependent Variable: AntiJewish-Incidents Rate

b. Predictors: (Constant), Facebook-Rate

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.302	.015		19.758	<.001
	Facebook-Rate	-1.051E-7	.000	-.575	-2.724	.016

a. Dependent Variable: AntiJewish-Incidents Rate

We can conclude from the p-value of 0.016 that there is a statistically significant effect between anti-Semitic incidents and Facebook rates at the 5% level. Yet, the R-value of 0.575 does not meet the standard of 0.7 for a strong relationship. Meaning, the relationship between observed values of anti-Jewish incidents and Facebook rates is fairly weak. We can also see from the adjusted R-squared value this model explains 28.6% of the variation in anti-Semitic hate crime incidents. Lastly, the standardized coefficient beta shows that, for every 1 standard deviation increase that we see in the Facebook rate, there is a 0.575 decrease in anti-Semitic incidents.

Therefore, we can conclude that Facebook and anti-Semitic hate crimes have an inverse relationship, showing a negative correlation.

To understand these relationships further, I ran a regression where the independent variable was Facebook users, and the dependent variable was hate-crimes in the U.S. in general. Once again, both of these variables are set as a rate per 100,000 people. I chose to also explore this data so that I could understand whether or not anti-Jewish hate crimes were distinct from overall hate crimes in its' relationship to Facebook use.

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Facebook-Rate[b]	.	Enter

a. Dependent Variable: HateCrime-Incidents Rate

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.628[a]	.395	.354	.24563

a. Predictors: (Constant), Facebook-Rate

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.590	1	.590	9.773	.007[b]
	Residual	.905	15	.060		
	Total	1.495	16			

a. Dependent Variable: HateCrime-Incidents Rate

b. Predictors: (Constant), Facebook-Rate

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.405	.089		26.966	<.001
	Facebook-Rate	-7.031E-7	.000	-.628	-3.126	.007

a. Dependent Variable: HateCrime-Incidents Rate

The p-value in this regression is 0.007, which is significant at the 5% level, meaning that there is a statistically significant main effect between hate crimes and Facebook rates. The R-value is

0.628, which shows a stronger relationship between observed values in hate crimes and Facebook rates than the anti-Jewish regression. Additionally, the R-squared value is 0.395, meaning the model explains 39.5% of the variation in hate crime incidents. The standardized coefficient beta shows that for every 1 standard deviation increase in the Facebook rate, there is a 0.628 decrease in hate crime incidents, which is slightly larger than the relationship between Facebook and anti-Semitic hate crimes. The outputs from this regression show that hate crimes, in general, have similarities to anti-Jewish hate crimes, yet the model shows a larger decrease in overall crimes as the Facebook rate increases.

These regressions above provide a lot of explanation regarding the relationship between hate crimes, specifically anti-Jewish, and Facebook users. Yet, to eliminate the impact of external factors that may also affect anti-Semitic hate crimes I ran another regression controlling for main events in the Israel/Palestine conflict and changes in the U.S. political environment.

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.925[a]	.856	.753	.15187	.856	8.321	5	7	.007
2	.942[b]	.888	.776	.14460	.032	1.722	1	6	.237

a. Predictors: (Constant), Neg-Israel-Relection , US-Political-Senate, US-Political-Pres. , Pos-Israel-Relection , US-Political-House

b. Predictors: (Constant), Neg-Israel-Relection , US-Political-Senate, US-Political-Pres. , Pos-Israel-Relection , US-Political-House, Facebook-Rate

c. Dependent Variable: AntiJewish-Incidents Rate

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.960	5	.192	8.321	.007[b]
	Residual	.161	7	.023		
	Total	1.121	12			
2	Regression	.996	6	.166	7.936	.012[c]
	Residual	.125	6	.021		
	Total	1.121	12			

a. Dependent Variable: AntiJewish-Incidents Rate

b. Predictors: (Constant), Neg-Israel-Relection , US-Political-Senate, US-Political-Pres. , Pos-Israel-Relection , US-Political-House

c. Predictors: (Constant), Neg-Israel-Relection , US-Political-Senate, US-Political-Pres. , Pos-Israel-Relection , US-Political-House, Facebook-Rate

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Correlations			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	1.940	.113		17.202	<.001					
	US-Political-Pres.	.326	.113	.549	2.894	.023	.823	.738	.415	.572	1.749
	US-Political-Senate	.330	.139	.556	2.379	.049	.581	.669	.341	.377	2.654
	US-Political-House	-.286	.141	-.410	-2.031	.082	-.028	-.609	-.291	.506	1.977
	Pos-Israel-Relection	-.032	.049	-.110	-.637	.544	.259	-.234	-.091	.689	1.452
	Neg-Israel-Relection	.195	.092	.354	2.126	.071	.278	.626	.305	.740	1.351
2	(Constant)	2.110	.168		12.534	<.001					
	US-Political-Pres.	.239	.126	.403	1.901	.106	.823	.613	.260	.415	2.411
	US-Political-Senate	.336	.132	.565	2.540	.044	.581	.720	.347	.376	2.657
	US-Political-House	-.204	.148	-.292	-1.376	.218	-.028	-.490	-.188	.415	2.410
	Pos-Israel-Relection	-.019	.048	-.067	-.401	.702	.259	-.162	-.055	.663	1.509
	Neg-Israel-Relection	.077	.126	.140	.613	.563	.278	.243	.084	.359	2.787
	Facebook-Rate	-3.537E-7	.000	-.316	-1.312	.237	-.628	-.472	-.179	.322	3.108

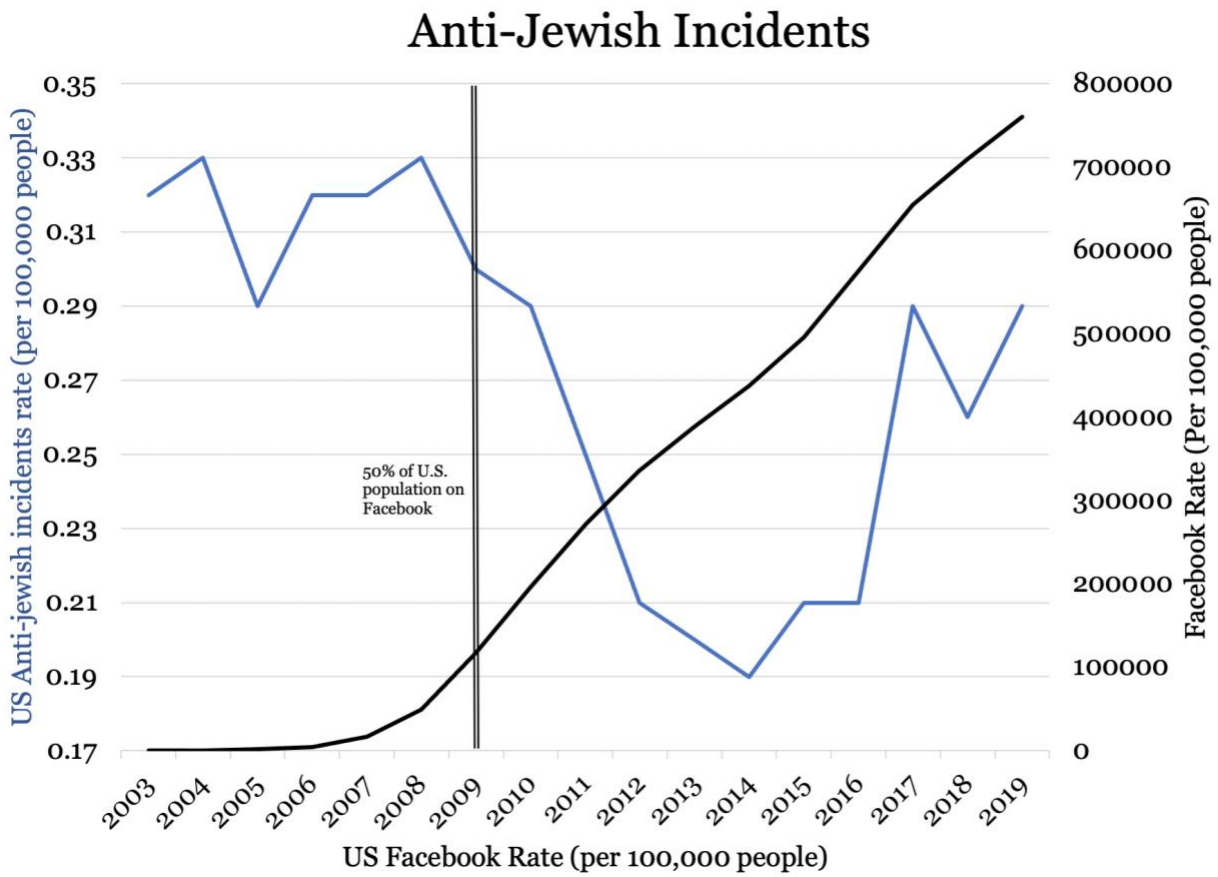
a. Dependent Variable: AntiJewish-Incidents Rate

By looking at the significance value, we can see that the model as a whole, including all four variables, is a statistically significant predictor of anti-Jewish incidents at the 5% level. According to the R-Squared values, the control variables explain 85.6% of the variability. When the Facebook rate is added to the regression in addition to the controls, it explains 88.8% of the variability. Meaning, our predicator variable, Facebook, explained an additional 3.2% of the variance in our outcome, proving that it has a fairly small overall contribution. We can also conclude that the control variables provide a major contribution in explaining anti-Semitic incidents, much more than the Facebook rate. Specifically, by digging further into the controls, I calculated that a negative reflection of Israel correlates with a 35% increase in anti-Jewish incidents, while a positive reflection of Israel correlates with an 8.6% decrease in anti-Jewish incidents. In comparison, the Facebook rate correlates with less than a thousandth of a point decrease in anti-Jewish incidents out of an average of 2.2. Additionally, the regressions show that a Republican president correlates with a 10.9% increase in anti-Jewish incidents, a Republican majority House correlates with a 9.3% decrease in anti-Jewish incidents, and a

Republican majority Senate correlates with a 15.3% increase in anti-Jewish incidents. By looking at the controls, I was able to discover other factors that had an even larger statistically significant impact on anti-Semitic incidents than Facebook itself.

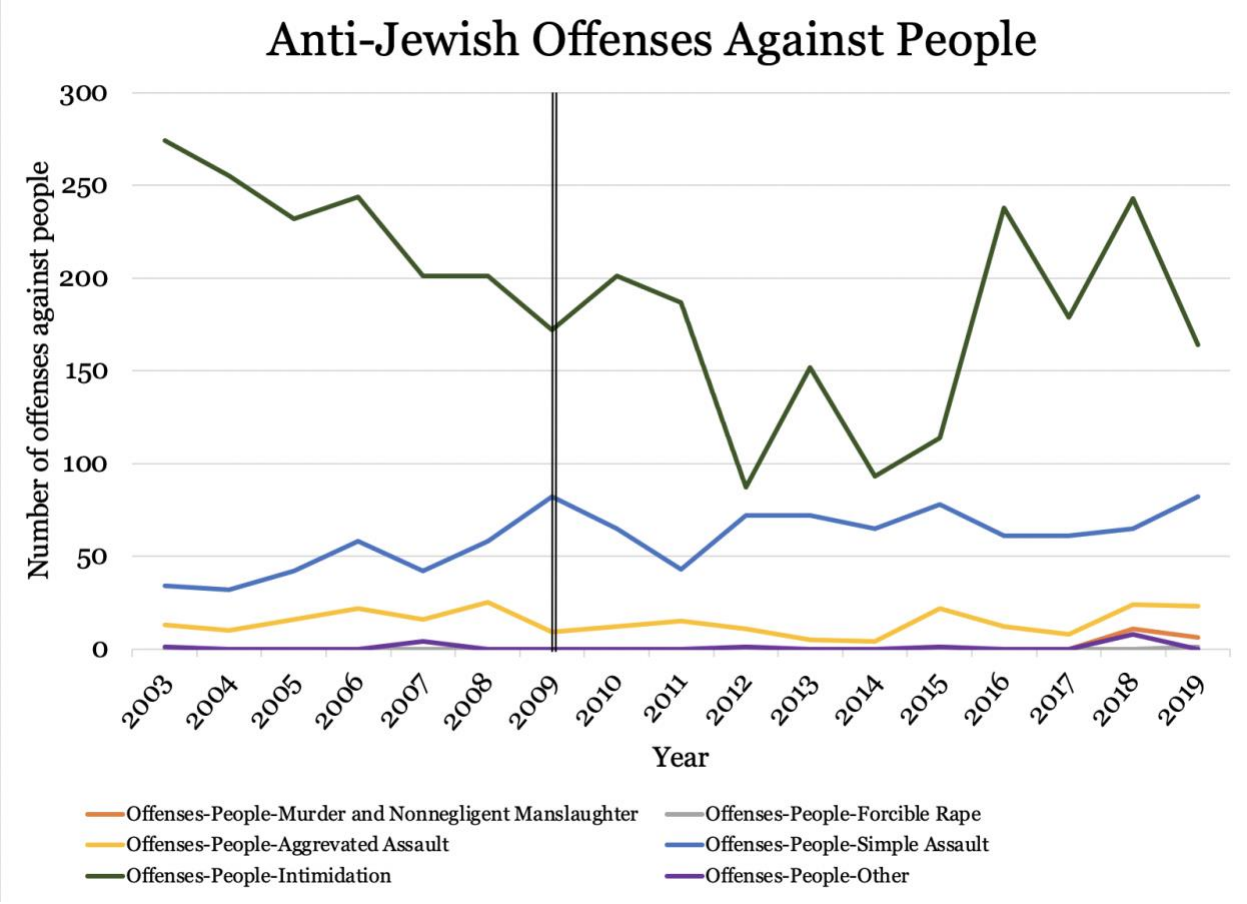
Graphical Data

To further understand overall trends in anti-Semitic hate crimes and Facebook use, I created graphs to observe common patterns in the data over time. The first graph below displays the frequency of anti-Semitic incidents and Facebook users both set as a rate per 100,000 people over the years that Facebook first became socially pervasive. In addition, the graph displays the point at which 50% of the U.S. population had an active Facebook account, creating an interruption in the data to clearly define trends both before and after Facebook's impact.

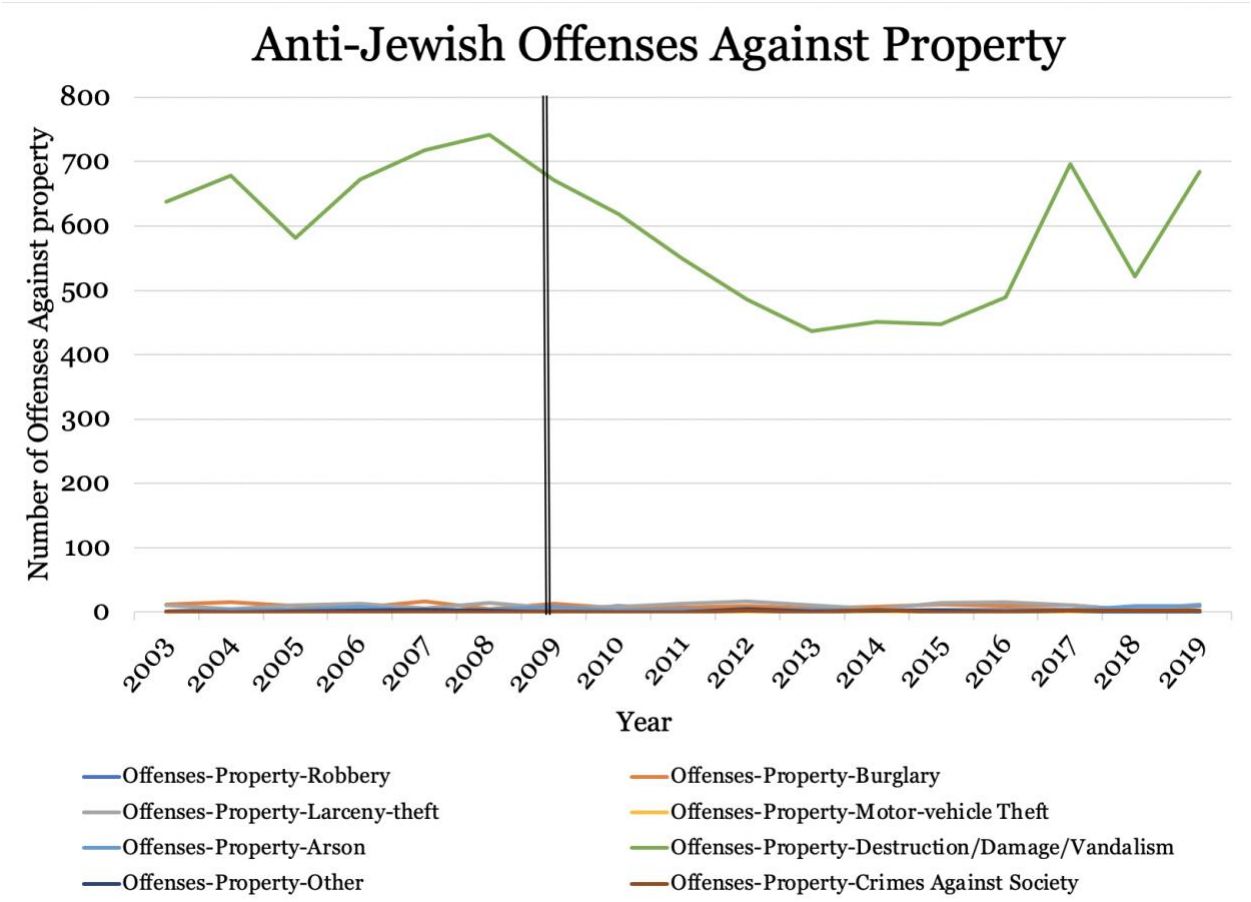


The trends in the graph show that when 50% of the U.S. population had an account on Facebook, the number of anti-Semitic incidents was already slightly declining. Then, as more people began using Facebook, the numbers continued to decline exponentially until 2014 when the incidents began to increase again. As a result, there is clearly no positive correlation between anti-Jewish incidents and Facebook users.

After observing overall trends in the data, I narrowed the scope of the data to offenses against people and offenses against property specifically, while still implementing the interrupted time series at the 50% of the U.S. population on Facebook. Below each of the graphs display data on these specific metrics.

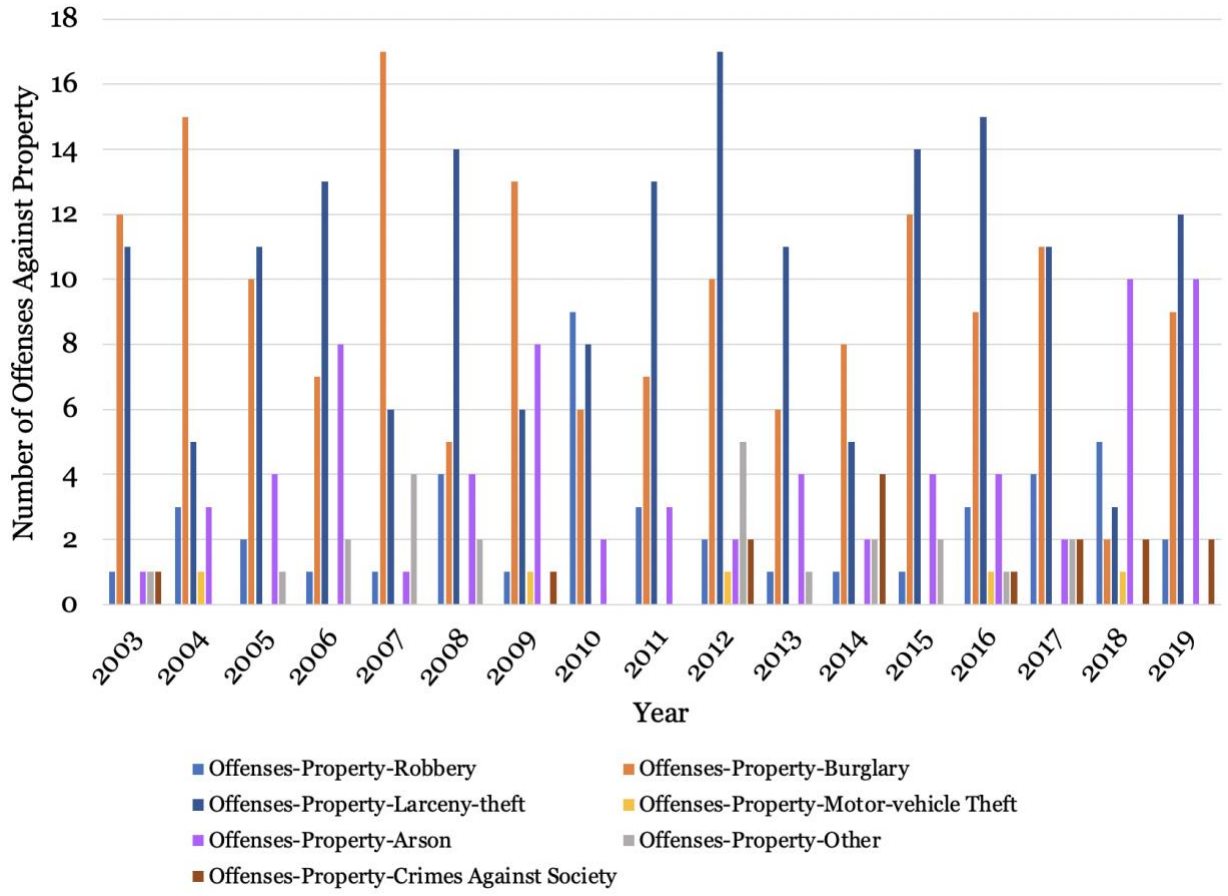


This graph shows us that specific offenses against people do not all follow the same trends from 2003 to 2019. For example, as intimidation increased from 2009 to 2010, simple assault cases decreased. The graph also shows that intimidation more frequently occurs than other offenses and that simple assault is the second most frequent offense throughout the time period of focus in the study. Though there are many trends apparent in this graph, it does not show a clear positive correlation with Facebook use because, as we can see from the overall trends, the number of offenses does not increase as more people join Facebook over the years.



The graph above displays the data for offenses against property from 2003 to 2019 compared to Facebook use. It is clearly shown by the data that destruction, damage, and vandalism are the most common types of anti-Jewish property offense. The trends in destruction, damage, and vandalism also follow a similar structure to the previous graphs, which

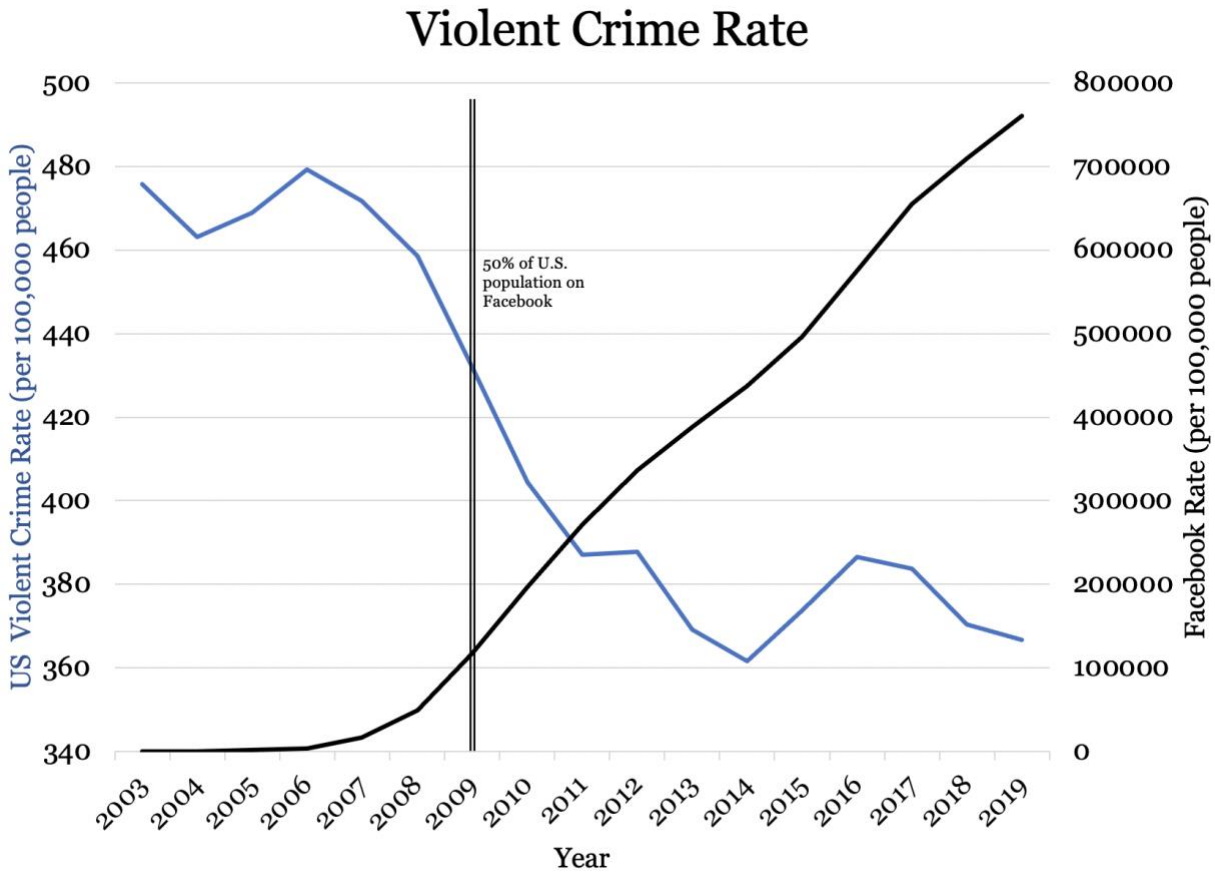
is that incidents decline right before 50% of the population was on Facebook and continue to decline for several years. This shows that there is not a positive correlation between anti-Jewish property related offenses and Facebook use. The graph also shows that other types of property offenses occur very infrequently from 2003 to 2019, with numbers well below 50 per year. The drastic difference in frequency between destruction, damage, and vandalism compared to other types of property offenses is also a very compelling observation.



Zooming in further to the bottom of the graph on anti-Jewish offenses against property, we see that at some points different types of property offenses increase together, and some have an inverse relationship. Additionally, when looking at overall trends throughout the graph, we can see that burglary, larceny-theft, and arson are the three most common offense over the years.

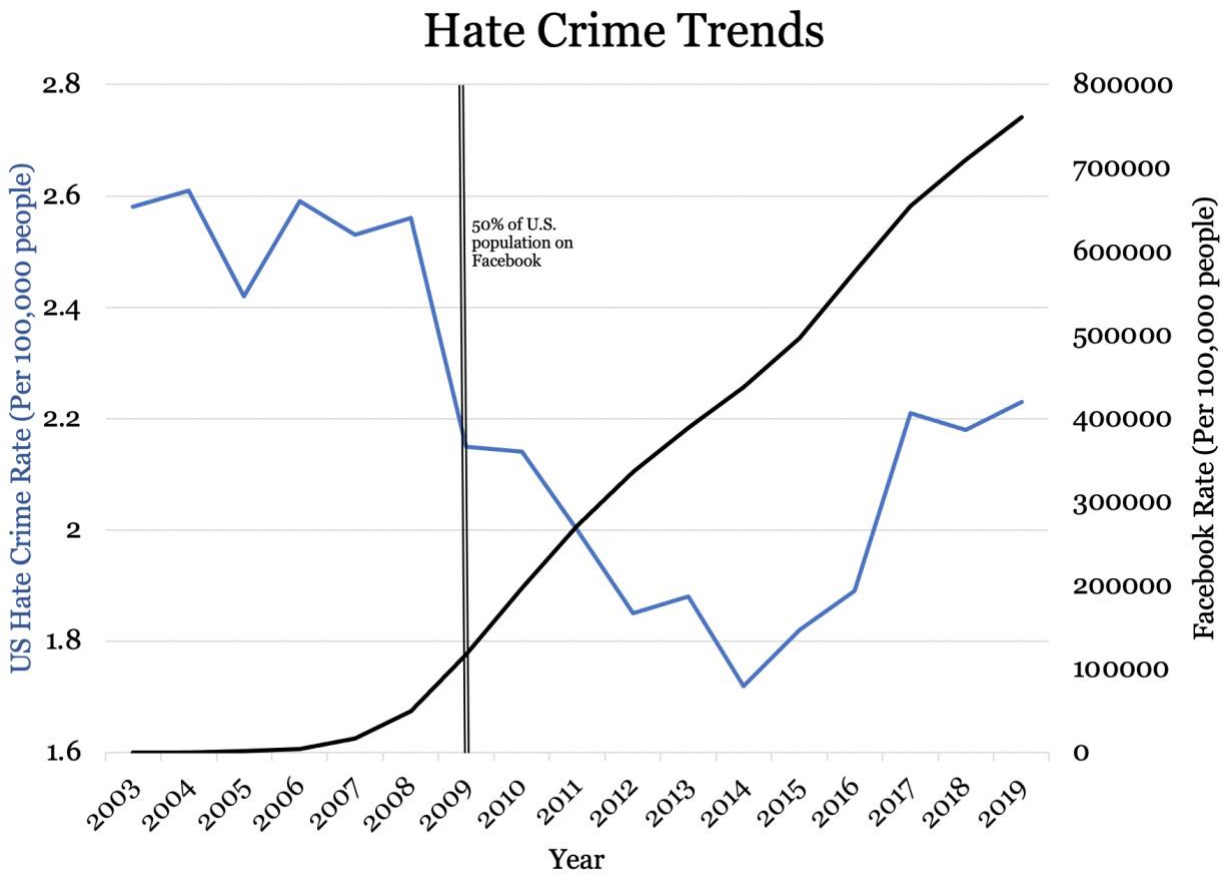
Despite all of these trends, there is still no clear positive correlation with Facebook use because the data does not increase significantly over the period of the study.

To explore the possibility of potential connections between anti-Jewish trends and other, more general, trends regarding crimes I also created a graph that shows the violent crime rate over the period of the study.



Hate crimes, both anti-Jewish and in general, are a subset of violent crimes in the United States. Exploring these trends showcases that anti-Jewish hate crimes and the violent crime rate are generally very similar to one another from 2003 to 2019. It is also worth noting that, in 2015, anti-Jewish hate crimes began to increase, while the violent crime trend increases slightly and then decreases again. The similarities in these trends may indicate that anti-Jewish hate crimes are partially driven by other violent crime processes.

The next graphical visualization portrays the overall trend in hate crimes in the United States from 2003 to 2019, narrowing the scope from violent crime trends to hate crimes in particular.



The trends in this graph look very similar to the trends in the graph on anti-Jewish incidents. Therefore, looking at the general hate crime trends may offer a partial explanation that anti-Jewish hate crimes may simply be a sub-set of trends in violent crimes and general hate crimes within the United States. These phenomena would require further exploration, yet by observing the data graphically it does offer some valuable insight.

The regression outputs, graphs, and charts all display that there is clearly no statistically significant *positive* correlation between anti-Semitic hate crimes and Facebook use from 2003 to 2019, which we see in the regression outputs as well.

Discussion/Conclusion

This study's results provided valuable insight into the relationship between Facebook use and anti-Semitic hate crimes as well as displayed compelling patterns in the data. By running regressions while controlling for other potential factors that may impact anti-Semitic hate crime rates, I was able to explore beyond the initial connection to Facebook and gain insight on how perceptions of Israel and the political environment correlate with anti-Semitic hate crimes. Additionally, by graphically displaying trends in violent crimes, hate crimes, and anti-Semitic hate crimes, I was able to discover the consistent patterns that each of these graph's display. Analyzing both the regressions and graphs, it is clear that Facebook and anti-Semitic hate crimes in the United States have a slight negative correlation. Lastly, choosing a unique research method in which data could be observed longitudinally instead of in mass quantities spanning short periods of time also opened possibilities to explore a variety of trends between anti-Semitic hate crimes and other crucial factors. In the future, this research approach can create a potential avenue from which other researchers can build. This can be done by studying different variables that may have a potential impact on anti-Semitic hate crimes in the U.S., allowing for results that can help create a positive impact on society.

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