Analysis for Public Discourse Based on Tweets' Relevant Terms: Opposition to the US Supreme Court's Decision to Overturn Roe v. Wade

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Abstract: This study investigated people's attitudes on social media towards abortion right after the leaked version, and the official version were put out, as well as the factors that influence and reveal human attention to independent rights and gender equality. Quantitative and qualitative data were collected through Twitter. Data from quantitative analysis and topic modeling suggested people's different focus topics on abortion, the most relevant focused hashtags in this event, and how people's main concern towards the issue shifted after the official version came out. Results from the qualitative analysis indicated how human's reactions towards abortion have been displayed through platforms and what parts are the most concerned in this incident. This research emphasizes the critical role of human attitudes in controversial decisions and how media separate them into different groups and tags to allow a more extensive community for people to discuss and protest.

Keywords: Abortion Right, Official Version, Quantitative Analysis, Human Attitudes

1. Introduction

On May 3, 2022, a leaked version of a plan to remove federal abortion protection rights was published by the media. Being seen as a significant reversal of previous research and efforts to protect women's rights, this leaked document contained the proposal to overturn the Roe Vs. Wade Supreme court case. The court's conservative majority upheld the law in Mississippi that prohibited the procedure after 15 weeks of pregnancy, and a minor majority signed on to strike down Roe [1]. The court held that a woman's right to an abortion was implicit in the right to privacy protected by the 14th Amendment to the Constitution. At the same time, the proposal overturned it in ways that states had been prohibited from banning abortions before around 23 weeks—when a fetus can survive outside a woman's womb [2]. According to most Americans, the ruling on abortion was more of a political statement rather than a legal one [3]. The latest poll also found that more than half of Americans are concerned that the Supreme Court will correspondingly reconsider issues such as contraception and same-sex marriage [1].

Notably, seven weeks after this leaked version, the official resolution of this same proposal was

published and made public, overturning Roe after its nearly 50 years as precedent. The court's decision to overturn Roe gives the states the authority to set their abortion policies [2]. These laws vary widely, and state laws that prohibit or tightly restrict access to abortion in several cases [4]. Several states are allowed to vary their laws related to abortion to a certain extent according to the court's decision [5]. The protection of women's rights in abortion that has been established in the past was overturned to a large extent, invoking people's reflection on women's rights and law and legislation procedures.

Overall, this study analyses public reactions to the overturning of the Roe case through social media. Our analysis provides a unique opportunity to observe people's reactions towards a controversial topic using the quantitative tool to analyze millions of data on Twitter. From a sociological perspective, we are interested in how public perception towards social movements may be similar or different depending on the change of settings and overthrow of established acts and in how prevalent are gender equality issues in peoples' discourses in each of these two events. The research will provide a profound and unique perspective on how people react to an important social event when the law and legislation system, gender equality issues, social media usage, and other controversial themes are involved simultaneously throughout the event.

2.   Related Literature

Roe v. Wade was a case brought by Norma McCorvey, known by the legal pseudonym "Jane Roe." She argued that the lack of legal access to abortion in Texas violated her right to privacy. As a result, on January 22, 1973, the US Supreme Court sided with her in a 7-2 decision, and *Roe v. Wade* became the landmark case that legalized abortion in the Supreme Court. After a few decades, however, the news site Politico published the leaked draft of the majority opinion on May 2, 2022, and suggested that US Supreme Court was likely to strike down *Roe v. Wade* [6]. Then, on June 24, 2022, in a 6-3 ruling, the US Supreme Court overruled *Roe v Wade*, ending the constitutional protection for abortion. The *Roe* decision outlawed all abortion restrictions in the country at the time in one stroke and has been controversial over decades. There appears to be a national divide on the issue of abortion in the United States, with a polarization of pro-abortion and anti-abortion opinions [2]. Misra examined abortion attitudes by gender and race and concluded that: racial differences in abortion attitudes are declining; even though there are no statistically significant gender differences, women feel more strongly about the abortion issue because they are biologically and socially more likely to be affected by child-rearing [2].

The *Roe* decision has faced pressure not only from the anti-abortion community but has also attracted criticism from many women's equal rights advocates and even the pro-abortion community. As Justice Ginsburg noted, the decision's focus was women's privacy of abortion rather than women's rights. Unfortunately, it tried to do too much and too quickly to the point where it was easily turned into an easy target under fierce attack [6]. Therefore, the protection of women's right to abortion is vulnerable unless it is achieved under the equal protection clause [6]. Furthermore, a binary division between pro and anti-abortion attitudes is not sufficient. B. J. Rye and A. Underhill found that there are large intermediate groups with divergent views on abortion as a procedure and attitudes to abortion as a choice [7]. Recognizing groups in the ambiguous zone, the abortion issue may become less polarized and divisive.

3.   Methodology

To achieve the research goal of this paper, which is to examine whether the enactment of the U.S. abortion bill meets the moral standards of today's society and the extent to which it is supported or opposed by the public, we primarily use R workshop to provide a detailed picture of the public

feedback on abortion in the U.S. during different time intervals and to answer our research questions. The primary data source used to present the official version of feedback on the enactment of the U.S. abortion bill includes over 5,000 open-ended responses from protected versions of relevant Twitter posts. This database is the most up-to-date and representative sample of the public's feedback on the official version of events related to "abortion" and "abortion rights." When the data is uploaded, the atuthor_id and text are populated with the column names of the selected data. Each interval includes a primary data source with 5000 data relevant to the main topic and keywords by using hashtags to locate open-ended responses from tweets and retweets via Twitter. Specifically, Machine Driven Classification of Open-ended Responses (MDCOR), an analytic framework and free software application to classify text responses in survey research, is used to analyze the large amount of data collected from Twitter and classify the data into different types of the main topic. We describe our process in detail below.
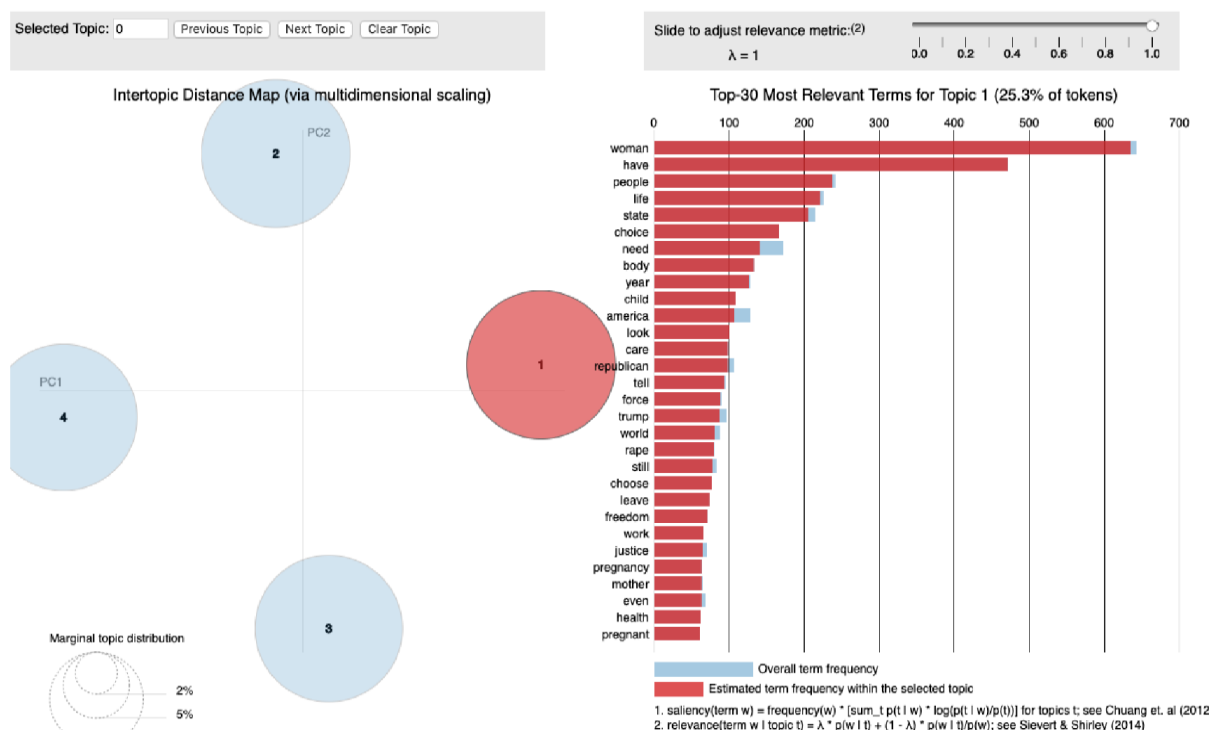
Data and Discussion Figure 1.

Figure 1: Top 30 Most Relevant Terms for Topic 2 (25.3% of tokens).

There are two of the most representative tweets in Figure 1: one showing protesters at a sit-in near the Supreme Court being arrested by police, and another juxtaposing the news of the ruling that abortion is illegal with another news about the maintenance of prison slavery that occurred within 24 hours. The Top-30 most relevant terms in Figure 1 can be divided into five aspects. Firstly, combined with the specific scenarios and backgrounds of tweets, general terms including "state," "America," "republican," and "trump" show public concerns about the conservative tendencies and regression of politics at the national level in the United States. Then, more extended discussions emerged in public opinion.

Secondly, the terms "child," "care," "pregnancy/pregnant," "health," and "mother" in public discourses present the risks faced by American women on the technical and cultural levels as a result of banning abortion. For example, a common anti-abortion argument in Figure 1-related tweet discussions is that people should use various contraceptive methods to avoid getting pregnant and

that once pregnant, they should take the consequences of their actions. However, in the 1970s, the protection of abortion rights led to a general decline in American women treated for complications from illegal abortions. Similarly, it brought about a decline in the absolute number of deaths from illegal abortions [8]. In addition, the abortion procedure under safe medical conditions introduced after Roe v. Wade guaranteed a woman's physical health [8]. However, this guarantee will likely be lost when the Roe case is overturned.

Furthermore, according to the article written by Fu et al. [9], the effectiveness of contraceptive methods was ranked by failure rates: the failure rates ranged from the lowest for implants and injections (2-4%) to the highest for spermicides (28%). That is, there was no perfect contraceptive method. In addition, contraceptive failure rates are influenced by age, race, and income level. For example, the contraceptive failure rate for black women is about 20%; in contrast, other races have lower failure rates, for example, 16% for Hispanic women and 11% for white women [9]. Moreover, contraceptive failure rates vary by income and age, with poorer or younger women having significantly higher failure rates than wealthier and older women [9&10]. Exacerbating the situation is that young and poor woman whose contraception is more likely to fail to face severe repercussions when it does, as they may be least able to care for unexpectedly born children, access maternal health care, and obtain safe abortion services [10].

Thirdly, "rape" reflects worries about unwanted pregnancies in exceptional circumstances. There are states with exceptions for rape and incest, but the requirements vary, leading to public concern about the plight of women with unwanted pregnancies in these circumstances. Many states, such as Utah, require victims of sexual assault to report the crime to the police [11]. However, more than two-thirds of sexual assaults remain unreported. Women who experience sexual violence may not disclose the sexual assault for numerous reasons, including self-blame and fear of secondary victimization by outsiders [11]. An alternative for rape victims is to go to a pro-abortion state to have an abortion, but this can be a financial burden. Indeed, the abortion ban legislation places many obstacles in the way of abortion for victims of sexual assault, which is one reason why "rape" is such a high-frequency term in public discussions.

Fourthly, terms such as "life," "body," "choice/choose," "force," and "justice" imply the move of public opinion to a philosophical level, i.e., a discussion of bodily integrity, subjectivity, and the definition of life. The choice of abortion is indeed closely linked to a woman's physical integrity. Denying women's right to control their bodies can seriously undermine their sense of self, as bodily integrity is necessary for self-formation, and banning abortion separates a woman's will from a part of her body, the womb [12]. The law interferes with women's bodily integrity under the guise of regulating reproductive decision-making, justifying the violation of bodily integrity [12].

Due to the presence of the womb, a woman's life has to be connected to intrauterine life. This leads to a natural conflict between the autonomy of the female body, which is supported by "pro-choice," and the right of intrauterine life to survive, which is affirmed by "pro-life." A typical argument of "pro-life" supporters is that abortion is equivalent to murder. However, "pro-choice" advocates criticize them for being more concerned with the lives of the "unborn" than with the survival of living women and children. Similarly, "pro-choice" advocates point out that "pro-life" ignores the fact that a potential child is not considered equal to fully human life [12]. While the apparent dichotomy between "pro-choice" and "pro-life" risks oversimplifying the complexity of the abortion issue, it does provide a good representation of two opposing positions that have endured in public discourse for decades.
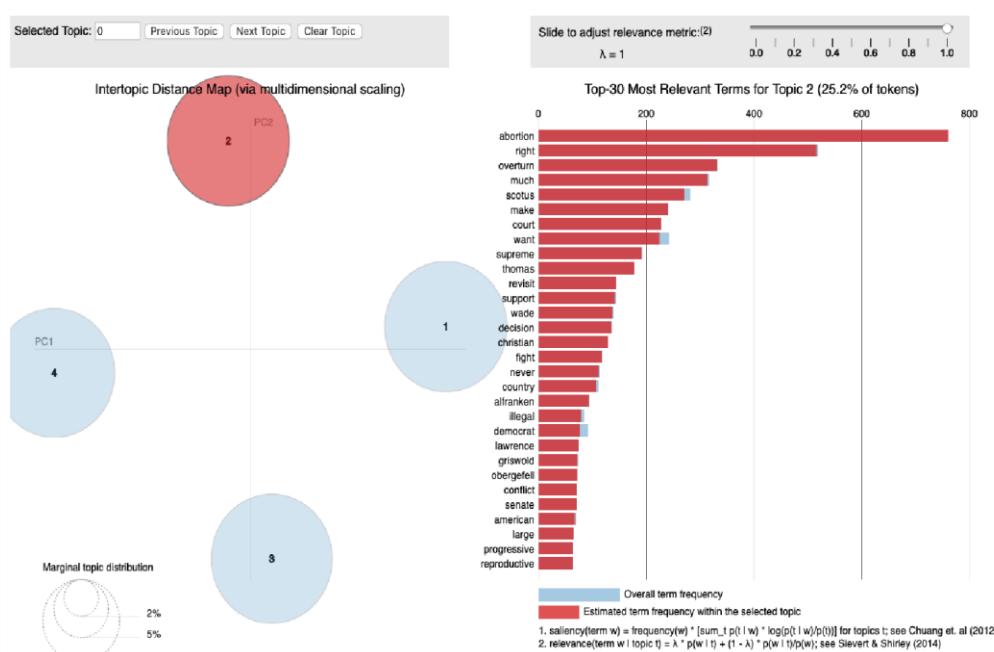
Figure 2: Top-30 Most Relevant Terms for Topic 2 (25.2% of tokens).

According to the relevant terms in Figure 2, the terms "overturn," "fight," "conflict," etc., represent people's overall emotions and behavioral motivations after the enactment of the law. There is a high level of protest for the lack of understanding of the decision. From the term "court," "supreme," "senate," and "democrat" in the topic "It can also be concluded that the public paid close attention to the origin of the law and the organization that published the law. The starting point and interest of the organization that moved the law are the information considered in all the responses, which means that people's focus on the law starts from the law itself to the institution that enacted the measure. This explains why people's emotions started to become more extreme and nastier.

The recurrence of the term "reproductive" also demonstrates that abortion is much more than just a way of stirring up conflict, raises the risk of adverse health outcomes for pregnant women and babies, and that forced childbirth will break up more families. Abortion increases the risk of infant mortality [13]. This is one of the factors that people are considering and protesting against the abortion law. Unwanted pregnancies in women are compassionate events [14], and forcing them to give birth and raise them is immoral and unreasonable and completely goes against the idea of women's rights and is a loss of choice, initiative, and freedom for women to give birth.

The abortion law is not the only element that oppresses women's rights; it is just a giant trigger that has caused much urgent attention to topics such as gender equality and women's rights. One individual case of female persecution in the #RoeVsWade hashtag was strongly retweeted. Twitter user "Zizipho Msindwna" called for help for her aunt, whom multiple bikers men violently persecuted. The case comes just three days after the advent of the U.S. abortion law. The victim tweeted a video of the persecution and hashtagged #RoeVsWade, which has received 192,000 views, 5,471 retweets, and 263 quoted tweets. How women maintain their safety to protect their own lives is a problem to be solved, and intense conflicts intensify conflicts will make each other more angry and rough treatment. This case is not individual; male threats and physical confrontation are long-standing social problems. A video of a woman assaulted by a small group of men in a parking lot has also gone viral and attracted significant attention. The woman argued with the men who were harassing her and was then violently assaulted by the group of men [15]. The extent to which women's

rights will be protected and who will be responsible for preventing such problems from happening also remain unresolved.
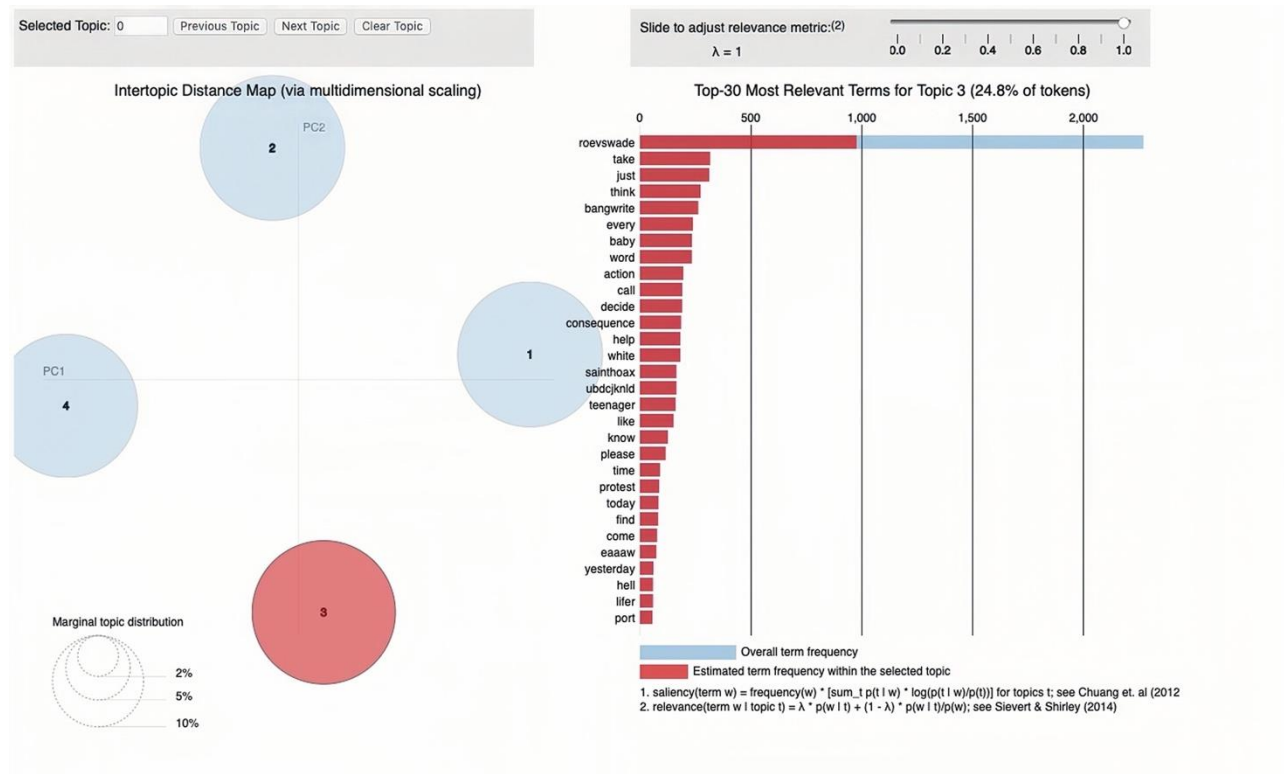

Figure 3: Top-30 Most Relevant Terms for Topic 3 (24.8% of tokens).

According to figure 3, the searched tweet trending phrases contain counts for "baby," "help," "protest," and "roe vs. wade" but lack access to "rights," "life," and "women." For example, according to a tweet under the hashtag #RoeVsWade, "Trump/Republicans pressured Justice Kennedy to leave vacating the seat for Brett Kavanaugh," it can be verified that the U.S. abortion the enactment of the bill would mean that a woman's right to abortion would no longer be protected by U.S. law. However, Alabama's newly passed bill takes the abortion agenda back to the 1970s and beyond. Since Roe v. Wade in 1973, the discussion of abortion at the legal-political level has centered on the stage of pregnancy at which abortion can be legislated to be restricted rather than whether it can be performed. The ruling meant that states had to allow pregnant women access to abortion facilities until the fetus was deemed viable, judged by its ability to exist outside the womb [16]. For example, during a woman's first trimester, states may not enact laws restricting abortion on the grounds of protecting life; during the fourth to sixth months of pregnancy, states can enact laws restricting abortion on the grounds of protecting the mother's life. It follows that pro-choice activists view the issue as one of the women's rights, self-determination, and choice [17]. That is, the U.S. federal Supreme Court at the time considered a balance of three value pursuits, namely the right to autonomous choice, the protection of the health of the pregnant woman and her baby, and the potential right to life of the fetus. Instead, the new U.S. abortion bill that does not allow abortion on any condition will inevitably conflict with the current legally valid federal Supreme Court jurisprudence, and the social media Twitter public is all against the bill. However, Twitter is a non-representative platform because it is biased regarding age, gender, and education level. However, these biases do not mean that any insight gained is limited to these overrepresentations.

A study about the #BlackLivesMatter movement detected that African Americans were more active than other groups in the debate; the infra-representation of females did not hinder the study outcomes concerning gender [18]. Thus, as for abortion, while the population is biased, Twitter can provide insight into "what the public sees" if examined closely. According to 2019 research, while maternal mortality has decreased significantly in recent decades, more than 300,000 women die from pregnancy every year [7]. It is noted here that as control over modern society has weakened, more and more women are dying in childbirth rather than from abortions that are ripe for the picking. Moreover, with the rise of freethinking and the American sexual liberation movement, a family is no longer an option, children are born out of wedlock, the number of single mothers has proliferated, and the vast gap between rich and poor has left many proletarian families, including Roe's, poorer and poorer due to constant childbearing. Overall, reproductive rights are an essential part of women's rights, a principle of human rights that needs to be firmly upheld and reflected in law to varying degrees in many parts of the world, and restricting abortion does not stop people from pursuing it, it only makes it more dangerous.
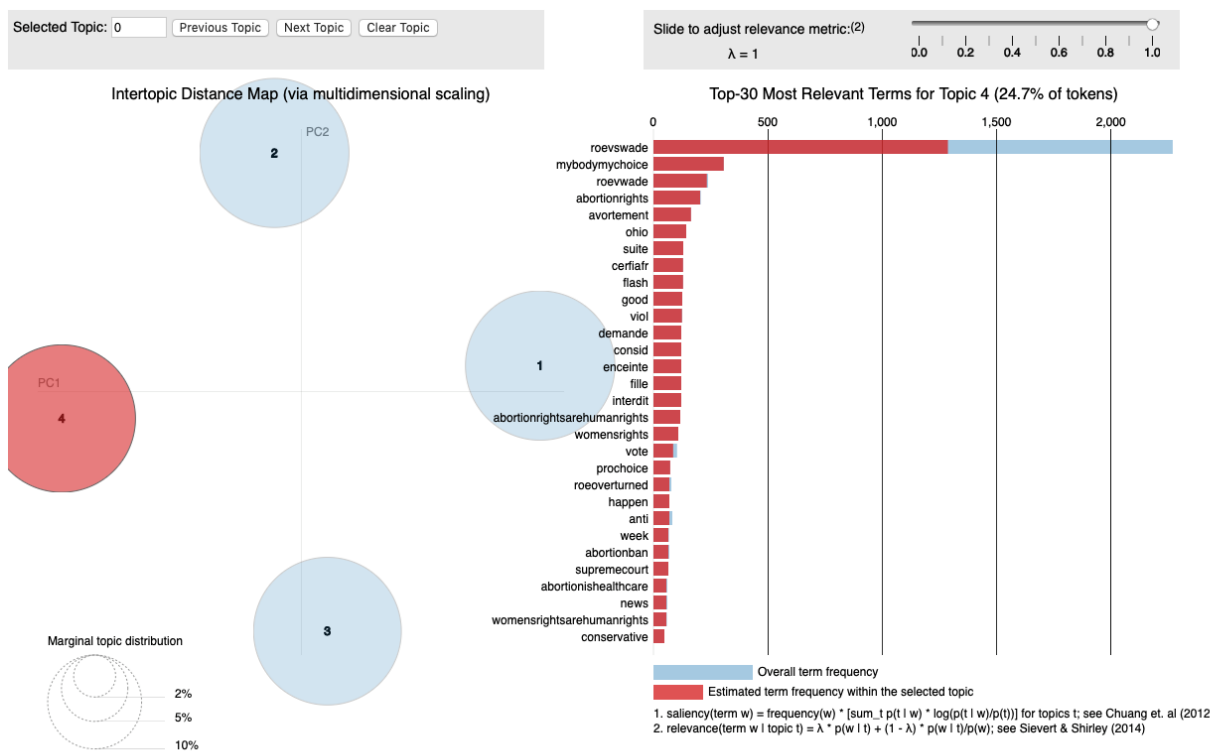

Figure 4: Top-30 Most Relevant Terms for Topic 4 (24.7% of tokens).

In this research, the primary data source used for reflecting the public reaction towards the overturn of Roe V. Wade after the official version via Twitter includes 5000 text responses collected from Twitter. Using MDCOR, the dataset contains 5000 data that are classified based on the main contents and word choices from the text into one of the four most representative main topics that set focus on slightly different perspectives towards the issue. The data classified into the range of "Topic 4" is shown with its most relevant terms and estimated term frequency within the topic in Figure 4. According to Figure 4, the searched tweet trending terms contain counts for "mybodymychoice," "abortion rights," "abortionrightsarehumanrights," "women's rights," "pro-choice," and "womenrightsarehumanrights" as the relatively frequent ones despite the generally-common words used in the specific circumstance of the overturn towards Roe V. Wade. From the bar graph, these

frequently used terms can be classified as hashtags or slogan-like hashtags via social media. On social media, hashtags are used as a form of user-generated tagging that enables cross-referencing content by topic or theme. Having a purpose that people want their voice to be heard on particular topics, the usage of hashtags originated from a Google product designer named Chris Messina, who first used the hashtag to highlight San Diego Wildfire event, where he got a great response from people in 2007, [19]. Hashtags are unique compared to other text responses and terms collected from social media in ways that encourage people to take part in conversations on the same topic and engage with one another even if they are not following each other [20]. It can be verified from the relatively high term frequency presented by the graph that hashtags increase the extent of spreading the content relevant to the hashtags via social media.

Furthermore, specifically for the terms "mybodymychoice," "abortion rights," "abortionrightsarehumanrights," "women's rights," "pro-choice," and "womenrightsarehumanrights" are hashtags that are deliberately made to advocate a social movement or oppose a social phenomenon. They generally embody the campaign's personality and state clear stands on significant topical issues [21]. The firm attitude of protecting abortion rights as women's rights and women's rights as human rights can directly and be verified from those terms, which indicates a clear stance for a large proportion of social media users who advocates for opposing the overturning of Roe V. Wade. Being precise and efficient with explicit opinions within the hashtags, these kinds of hashtags are likely to spread and create hashtag movements that engage people with relevant interests and thoughts towards advocating abortion rights and women's rights together to further discuss and spread on certain hashtags and topics. Many times, on social media, there is no single person behind creating these movements, but it influences people to a great extent [19].

Acknowledgment

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