

An Immediate Study on Twitter Reactions to Roe v. Wade's Overturning: A Digital Feminism Perspective

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Abstract: Reversal of the Roe v. Wade decision has prompted a surge in digital activism and public discourse on Twitter. This study utilizes MDCoR to analyze tweets, developing an immediate study with the #RoeVsWade hashtag following the Supreme Court's decision. The analysis reveals two predominant themes: abortion as a healthcare issue and abortion as a legal right. The first theme focuses on personal narratives and the medical necessity of abortion, while the second addresses the political and legal dimensions of reproductive rights. Sentiment analysis of the tweets indicates neutral to positive emotions in discussions around healthcare, with a more objective tone. Meanwhile, tweets concerning legal rights exhibit stronger subjectivity and emotional content, reflecting the deep ideological divides. The study underscores the vital role of online platforms in shaping public opinion and collective movements, providing insights into feminist activism trends in the digital age and their effect on social change.

Keywords: Roe v. Wade, Digital feminism, abortion, Twitter disclosure, women.

1. Introduction

The pivotal ruling by the apex court on January 22, 1973, in Roe v. Wade established that women possess the prerogative to decide whether to proceed with childbearing during the initial trimester of pregnancy. This decision is closely tied to protection of privacy, which is enshrined in the Fourteenth Amendment of the Constitution [1]. Verdict in this case recognized women's legitimate rights during the initial phase of pregnancy [2], and became years' cornerstone for feminism and reproductive freedom [3]. However, after the 1973 ruling, opposition persisted. In terms of public support for abortion [4], the enactment of the bill has even spurred public funding restrictions on abortion [5]. The fierce right-to-life movement, on the other hand, stimulated the legislature to take the opposite measure. Some state legislatures enacted measures to minimize the impact of the law, such as the protection of fetal life [6]. On June 24, 2022, the apex court dismantled the precedent by a 6-3 decision. New ruling leaves abortion legality to states to decide for themselves, which has led to several states moving swiftly to restrict or almost banned abortion altogether [7,8]. The repeal of the Law was an event with far-reaching implications for American legal system and whole public. This ruling directly impacted the constitutionally granted rights pertaining to women's abortion. Meanwhile it also sparked widespread debate across societal and legal circles. In addition to having a huge impact within the United States, this ruling has had an impact on the global discussion of reproductive health and human rights. As a prominent benefactor to family planning initiatives, the government in

America has sought to steer policy in its desired direction, including planning the “global gag” rule, which stand in opposition to global pacts on the rights pertaining to reproduction [9]. Women of colour and/or living in poverty struggling with the most significant impact [10].

The historic ruling was announced on 24 June, and discussions on social media rapidly increased on the same day, leading to a surge in public engagement. This immediate spike in conversations following the announcement provides comprehensive sample coverage, ensuring that the analyses capture extensive public sentiment. Additionally, selecting data from discussions that occurred on the day of the ruling allows for the capture of the most direct and genuine emotional responses from the public. Therefore, data from 24 June was chosen as the basis for this study to reflect the most vibrant public reactions and discussion dynamics, ensuring both the comprehensiveness and timeliness of the analysis. X, previously known as Twitter until 24 July 2023 serves as a digital platform for social interaction, allowing individuals to voice their opinions and interact with users globally. The platform has not only facilitated the rapid dissemination of information but has also become an essential conduit for news reporting and societal discourse. Especially when major events occur, discussions on Twitter often quickly reflect public sentiment and views, and the repost function further facilitates the spread of information [11], developing a wide range of social impacts and gradually become one of the means to measure and represent the public [12]. Therefore, examining discussions on Twitter not only reveals the public's immediate reactions to major events, but also provides important insights into the dynamics of public opinion.

2. Literature Review

2.1. Hashtag activism

With the development of social media and newer ways of communicating and disseminating information [13], hashtag activism, can be defined as an online social movement of public support or fighting. It has become a new means of giving voice to the public on social media [14]. “Hashtag” means when people post content with #, to draw attention to a specific event [15]. As a way of organizing aggregation of information, using hashtag # to associate specific content or context created by users [16]. The origins of movement can be linked to the Occupy Wall Street on Twitter, where hashtags first became a method for organizing content online and provided a platform for activists to voice their dissent digitally [17]. The unification of time and space can accelerate the organization of activities online for users on social media [18], calling attention to specific issues and related content by categorizing [19]. There's been a lot of hashtag activism in recent years, such as #Metoo #StopAsianHate, #BlackLivesMatter. #MeToo has led to public awareness that sexual harassment is not confined to the workplace, but has wider social and cultural dimensions. The movement has fueled the need for change, not just in the treatment of individual cases, but in a profound reflection on the entire structure of society and cultural attitudes [20]. While the hashtag activism may not be able to bring about actual significant changes, it is to be commended for its ability to generate new public awareness and engagement on several important issues [14].

2.2. Digital Feminism

Digital feminism, a series of feminist protests and activism in the digital age, used cyberspace and collective action to launch a range of actions and efforts intended to reconfigure power structure within society [21]. The digital and social worlds are linked, and the human world utilises the digital world while being created by it [22]. X as social media, represents a social structure itself [23], in which people of different races, genders, and from a variety of different communities are active, and is an important tool for social movements [24]. Digital media has been recognised crucial for women's empowerment [25], favouring the refinement of the feminist movement by uniting users into an action

framework for online participation[26]. Feminists are increasingly turning to social media to raise their voices for gender equality and against misogyny [27]. Participants in the digital feminist movement can be categorised as short-term petitioners, long-term political activists, and the audience includes online and offline activists, users who actively participate in online discussions, and users who identify as feminist but are not interested in radical feminist expression [25] Nowadays, there is a growing trend of public engagement and resistance to female oppression through digital media. It enables women to engage with feminist ideas and advocates, from local surroundings to global contexts [28]. Jackson identified how digital platforms shapes feminist practices along with summarizing three key constructed dimensions [29]. Firstly, online feminism is seen as instability, then it is also an important site for knowledge sharing. Finally both in virtual space and in the real world, feminism is understood as a form of positive activism, can be understood in sense of “doing something”online/offline.

3. Methodology

3.1. Data Collection

Following the nullification, #RoeVsWade quickly became a prominent subject of public dialogue. Data collection process revolved around the #RoeVsWade Hashtag on twitter. In the week following the announcement of the ruling, 115,248 tweets were collected, and the maximum amount of data was reached on 24 June in Figure 1.

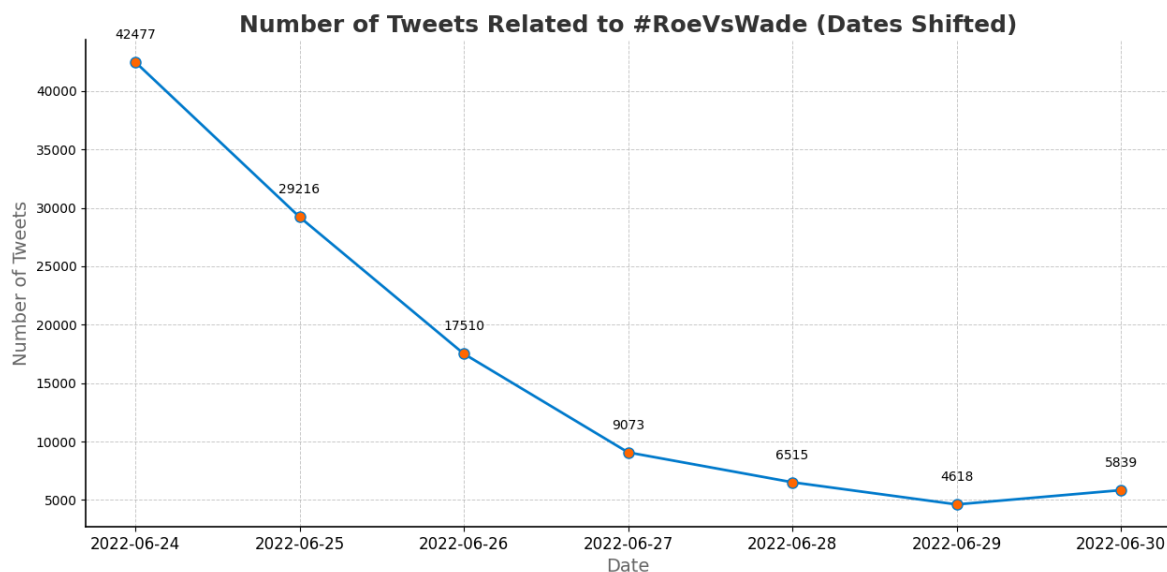


Figure 1: Number of Tweets Related to #RoeVsWade.

3.2. MDCoR

In this study, MDCoR (Machine-Driven Classification of Open-Ended Responses) was used, which is capable of handling large amounts of unstructured data efficiently and comprehensively. The core functionality of MDCoR lies in its ability to automatically categorise text data and identify topics. Through machine learning, MDCoR automates the processing of text content. Specifically, MDCoR begins by pre-processing the input text data, such as word splitting, deactivation and normalisation. These steps ensure that the data is consistent and analysable. Subsequently, MDCoR performs topic modelling on the texts to analyse co-occurring patterns in the text to identify potential themes in the text. It is scientific and convenient for researcher that the approach does not require researchers to

predefine categories, but rather allows the algorithm to automatically generate themes based on word co-occurrence patterns in the text and categorise each text segment into the most relevant theme [30].

3.3. Sentiment Analysis

Representative tweet was obtained after identifying the different themes. Then using VADER and TEXT BLOB sentiment analyser, the sentiment polarity and subjectivity of the tweets were analysed. Thereby identifying the users' emotional tendencies in the tweets. It was expected to further differentiate between the personal sentiments expressed in the text and the objective statements, to further understand the results of the theme analysis.

3.4. Results

After MDCoR identification and data cleaning, the metrics plot was obtained as follows in Figure 2. It turns out that most effective number of themes is 2, while keywords and representative tweets under both themes are revealed. Based on the modeling, 2 themes are automatically divided, and marginal distributions between the 2 themes are numerically approximated. It proves that the 2 themes appear in the immediate study with similar frequency. Top-30 Most Relevant Terms has been shown to demonstrate the most relevant terms under each theme, assisting to better understand the core concept of each one.

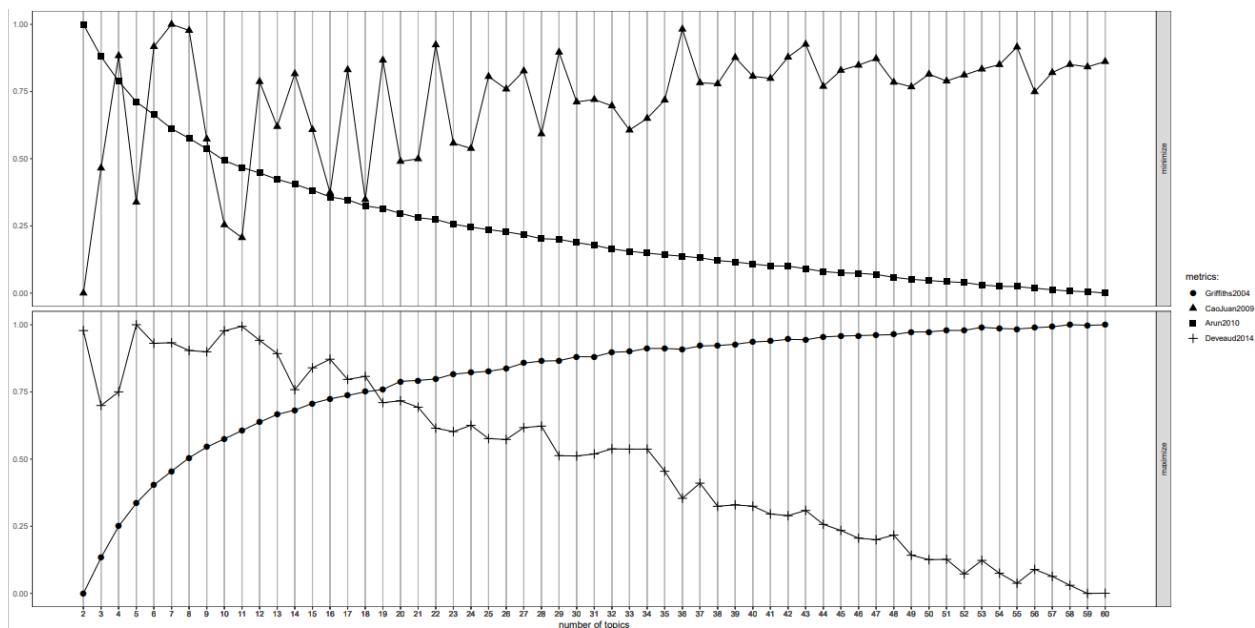


Figure 2: Metrics plot.

Theme 1: Abortion as women's health care. Among the identified results of theme 1, content with the theme of reproductive health was prominently discussed, centered around stories and emotions, focusing on the health of the individual's life. Top-30 Most Relevant Terms are listed below in Figure 3.

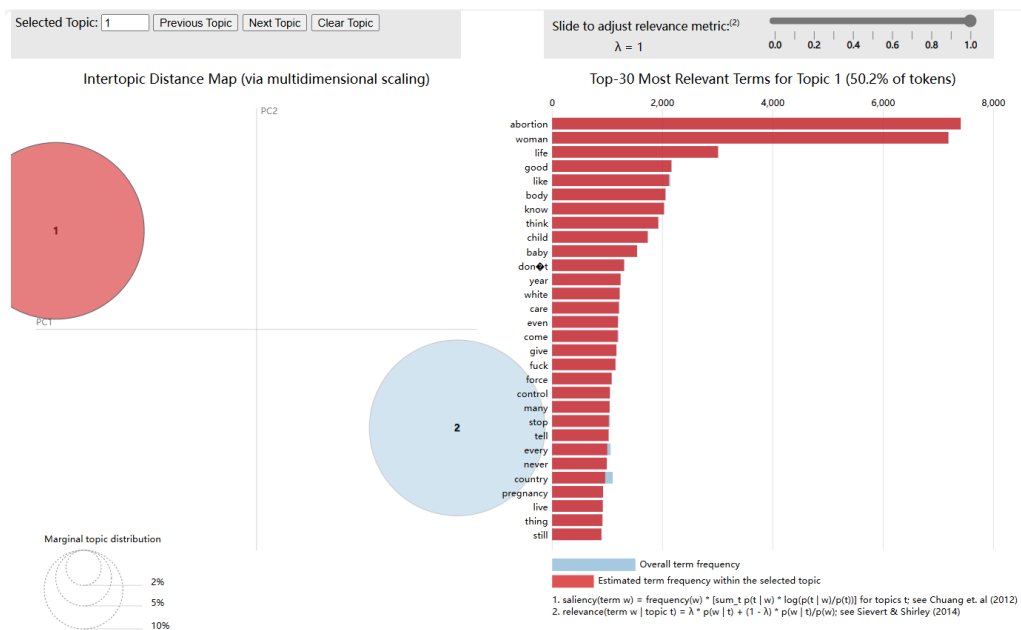


Figure 3: Intertopic Distance Map and Top-30 Most Relevant Terms for Theme 1.

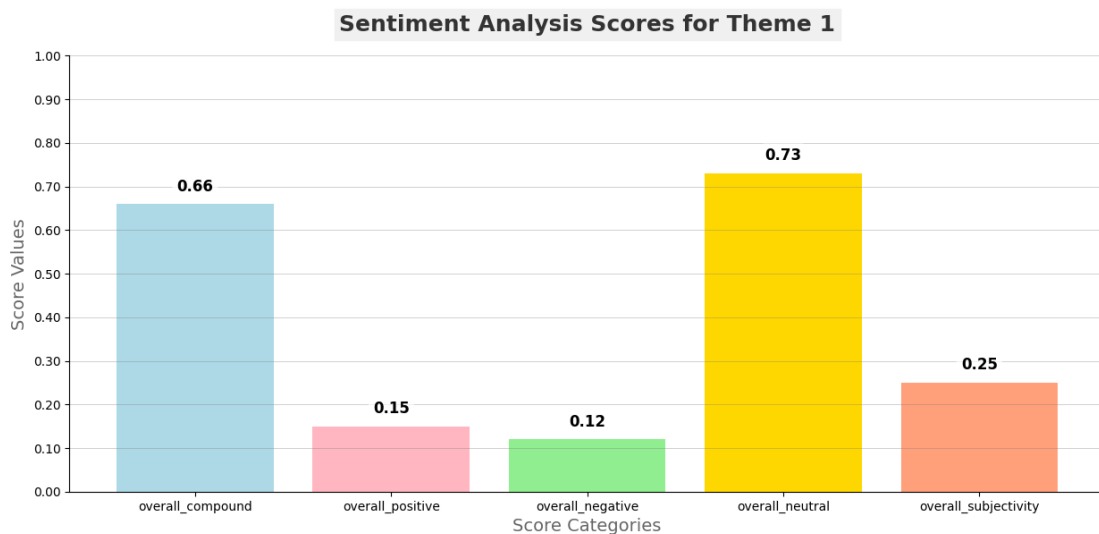


Figure 4: Sentiment Analysis Scores for Theme 1.

After the sentiment analysis, the composite scores for Theme 1 are as follows in Figure 4. “Abortion”, “woman”, “life”, “child” and “body” indicate that the main discussion revolves around the impact of abortion on women and their lives. This vocabulary reflects the abortion as a medical choice, which has a far-reaching impact on women's body, quality of life, and their future. “Force”, “control”, “care” and “think” indicates that an important aspect of the discussion is women's autonomy over their own bodies and reproductive decisions.

Attention has been broadly focused on how abortion impacts a person's health throughout their life. Tweets in theme 1 underscored that abortion represents a life-or-death concern for women, with personal experiences and called the ruling a war on women. The compound score of content related to abortion as women's health care is 0.66, which means that most of the discussions under this theme present relatively neutral to positive emotions. Meanwhile, a subjectivity score of 0.25 indicates that these tweets tend to be more objective descriptions than subjective expressions. This means that in

discussions, users tend to communicate in objective language and may be discussing facts or information, rather than personal emotions or subjective opinions.

Social media users were generally positive when discussing abortion as a women's health issue, with users discussing the topic more with real experiences and personal stories, showing high neutral scores and positive sentiments, and tending to express support and empathy.

Theme 2: Abortion as women's legal right. In the identification results of theme 2, the justification of the right to abortion at the legal and political level was mainly discussed. The Top-30 Most Relevant Terms in the results revealed are as follows in Figure 5.

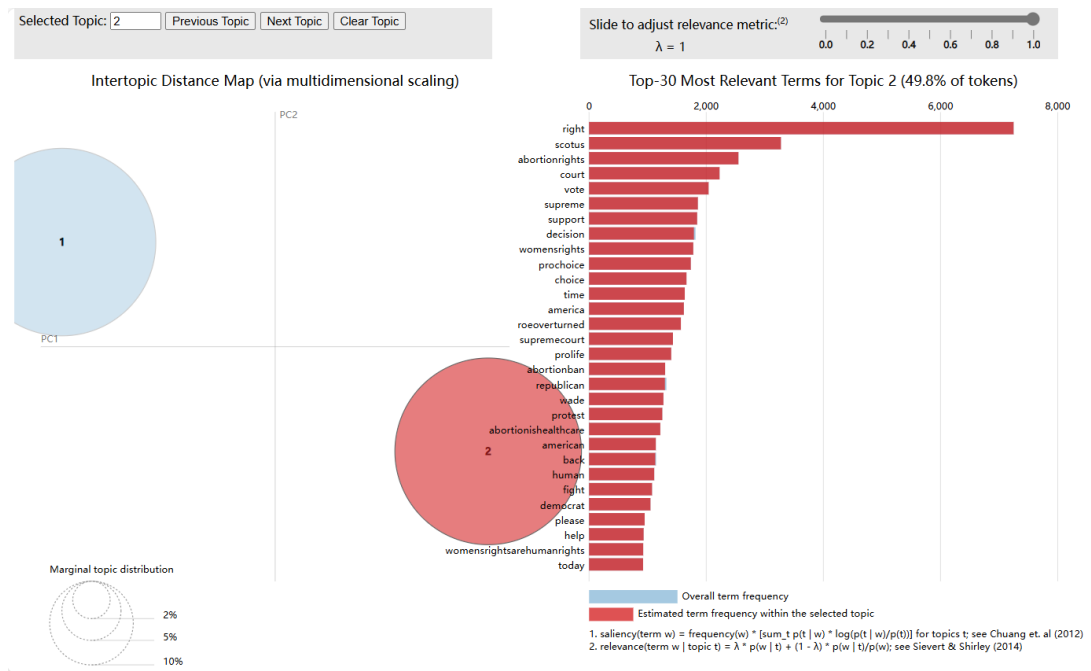


Figure 5: Intertopic Distance Map and Top-30 Most Relevant Terms for Theme 2.

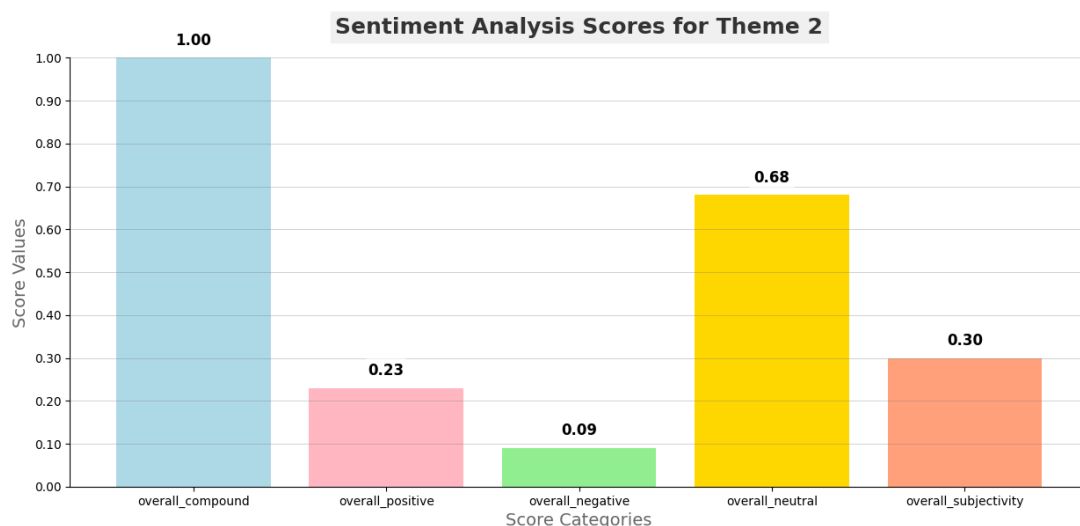


Figure 6: Sentiment Analysis Scores for Theme 2.

After the sentiment analysis, the composite scores for Theme 2 are as follows in Figure 6. “Right”, “scotus”, “court” and decision indicate that the core of the discussion centres the nature to end a

pregnancy and the relevant Supreme Court judgement. The constitutionality of abortion as an option was addressed. “Republican”, “democrat” and “prolife suggest that the issue of abortion rights is a highly antagonistic topic at the political level. “Womensrights”, “abortionishealthcare”and “womensrightsarehumanrights”, are indications of the fact that much of the discourse treats the issue to access abortion service is recognized as a key legal rights matter. Compound Score of Theme 2 reflects that the discussants expressed a more positive or neutral attitude. As 30% of the content is subjective, that is, it contains personal views, emotions or evaluations. The remaining 70% are more objective content. A considerable part is based on factual statements, not subjective emotional expression.

4. Discussion

The tweet with a “relative_text_contribution” value of 1 in this theme 1 are as follows, representing the text with the highest contribution to the theme and the strongest relevance:

“Abortion saved my life. In medical terms, I had an ectopic pregnancy, in 2019. Look it up. It is always fatal for the woman without medical intervention. Always requires an abortion to save the woman life. Abortion is health care. This is a war on women. #RoeVsWade”

The statement “Always requires an abortion to save the woman life” associates abortion to saving of life, making it not just a moral or legal issue, but a fundamental choice of health issue. Therefore, when abortion is framed as an issue of women's health and life preservation, it generates greater public empathy and support, while mitigating some of the controversy surrounding the debate.

When it is emphasised that “Abortion is health care”, it takes the issue of abortion out of moral and political controversy, emphasising its legitimacy and necessity as a medical service, effectively challenging those who view abortion as an immoral or illegal act. Users can enhance feminist discourse by sharing personal health experiences (e.g., the impact of abortion on health). These experiences are not only individual expressions, but also form the basis for collective memory and social action.

Here is another content with “relative_text_contribution” value of 1 as for theme 2:

Women’s Rights, Pro Choice, Feminists Masks, Women’s rights clothing, No uterus no opinion, Pro Roe <https://t.co/8jXobE3QRW>. WOMENS RIGHTS SHOULDN’T BE DETERMINED BY POLITICIANS. WE SUPPORT HUMAN RIGHTS. STAY SAFE! #RoeVsWade

The entitlement to life and health is fundamentally inherent to being human [31]. Abortion, beyond being a question of women's well-being and survival, abortion should be esteemed as a core human right. As the tweet suggests, legal rights, which including specific right to women, should be depoliticised. Abortion, understood as an aspect of bodily integrity, aligns with a feminist perspective that connects citizenship to physical autonomy, asserting that the legal system should protect this foundational condition [32]. It is worth noting that this piece of content is repeated 135 times with various mentions, where the users who are mentioned can be classified into 5 groups, as shown in Table 1.

Table 1: Categorization of Mentioned User.

Category	Users
Political Figures	@POTUS @AOC @SenWarren @BetoORourke @RepAdamSchiff @KamalaHarris @SpeakerPelosi @JoeBiden @BernieSanders @ewarren @JDVance1 @AdamKinzinger @JohnCornyn @SenSchumer
Media	@CBSNews @nytimes @washingtonpost @latimes @thehill @MacFarlaneNews @PoliticusSarah @OccupyDemocrats @Acosta @MuellerSheWrote @RpsAgainstTrump
Celebrities	@AndrewYang @ChrisEvans @Pink @MarkHamill @BetteMidler @Rosalia @MollyJongFast @Amy_Siskind @NikkiFried @ImSpeaking13

Table 1: (continued).

Activists	@ davidhogg111 @ DavidCrosss @ glennkirschner2 @ funder @ JohnFugelsang @ HelenFi95425438 @ ReallyAmerican1 @ TrendingLiberal @ AmyAThatcher @ PalmerReport @ JoJoFromJerz @ duty2warn
Organizations	@ TheDemocrats @ BNNBreaking @ JoyceWhiteVance @ WalshFreedom @ RBReich @ LakotaMan1 @ SaintHoax @ JDCocchiarella @ Millions @ WhiteHouse @ USATODAY

The high rate of repetition of this tweet and the large number of users mentioned in different fields, suggest that the users may be intentionally expanding the reach of this content. By mentioning different politicians, media organisations or public figures, users attempted to make the content visible to and potentially retweetable by these influential accounts and whoever tend to follow these accounts or keywords, thus further extending its reach. The variety of different types of accounts through mentions shows that users attempt to maximise the impact of the topic through a multi-channel, multi-level communication strategy. This strategy encompasses both traditional political avenues, but also involves media communication, entertainment industry influence, and social campaign mobilisation. The unique advantages of social media were used to broaden the theme's audience and increase attention to roe v. wade, to engage in effective public mobilisation and topic expansion through digital media. Such widespread mentions can be seen as a form of collective action in digital space [33], generating resonance and support on a wider scale. Digital platforms are not only a place to express opinions but also play an important role in mobilizing efforts, evoking hope and awareness of what should be recognized [34,35].

5. Conclusion

This study has demonstrated the significant role that digital platforms, particularly social media, play in shaping public discourse and mobilizing social movements, especially in the context of the Roe v. Wade ruling. The immediate study of #RoeVSWade reveals that the social media discussion centers on two themes: In Theme 1, the discussion centered around abortion as an issue related to healthcare. Sentiment analyses showed that the subjectivity scores were relatively low, although the sentiment tendency of the discussion was positive. This may be due to the fact that healthcare-related

discussions often involve medical facts and personal experiences, leading users to describe their perspectives using objective language. This objectivity lends a rational tone to the discussions, making them more likely to resonate with a broader audience.

In contrast, Theme 2 focused on the legal rights and political controversies over abortion. Sentiment analyses showed that tweets under this theme were relatively subjective and more strongly emotional. Considering it usually involves deep-rooted values and ideologies when it comes to legal and political topics, users tend to express strong personal emotions and subjective views due to struggles and value conflicts. The differing emotional tones between the two themes highlight the way in which the framing of abortion—either as a healthcare issue or as a matter of legal rights—elicits distinct public reactions.

Furthermore, digital platforms do not merely function as spaces for expressing opinions; they also serve as critical tools for mobilizing collective action. This was particularly evident in Theme 2, where many tweets were directed at politicians and media figures, with users actively seeking to extend their influence and advocacy through targeted social media engagement.

While this study offers a focused examination of the public's immediate reactions to the *Roe v. Wade* ruling, there are inherent limitations that should be acknowledged. Data collection for this study focused on tweets from a specific period (24 June) following the *Roe v. Wade* decision. Although this period has the largest amount of data and reflects the most immediate public reaction, it may not fully reflect the broader and evolving discourse that developed in the weeks and months afterward. Consequently, future research could extend the timeframe of data collection, which would lead to a fuller understanding of changes in public sentiment and its manifestation on social media. Given that this issue is closely related to politics, discussion on abortion with hashtag is likely to continue in the future as political campaigns evolve and party policies change. Considering the diversity and global reach of social media platforms, there are other factors that may influence the discussion, such as cultural background, ethnicity, and socio-economic status, future research could compare the digital feminist movement across cultures, policies and examine how different factors have different views acted and influenced the digital movement.

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