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Technology-Assisted Social Reforms and Online Hate Content: Insights from India

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HIGHLIGHTS

- Analyzation of social-reforms.

- Cohesiveness of Hate and Harassment.

- Comparison of Reform Movements.

- Implications to Policy.

Abstract: In the current scenario while everything seems digitalized, we often spend more time scrolling across various social platforms as compared to what we spend in any other real life activities. It becomes a matter of great concern when it comes to analyze what we see and how it is interpreted. Through this paper we aims to identify the influence of technology assisted social-reform initiatives on gender-based hate content generation. With the help of Twitter API, 112577 government-initiated and 58370 citizen-initiated movement(s) tweets have been extracted. This collected data is examined for hatred nature content in terms of emotions using a software programmed in R programming language, the scores for each emotion is counted and a comparison between both the moments is made. The study clearly shows that the Citizen-initiated moments shares comparatively more hate content than the Government-initiated movements as the scores particular to specific emotions like anger, disgust, and sadness is more. This cognitive study can be helpful in policy making, promoting gender based equality, defining strategies to rebuild citizen initiatives in a hate-free environment and controlling hate content generation.

INTRODUCTION

In India, most of the social reforms took place between the late 19th and early 20th centuries. The majority of reforms were formed against the devaluing of Indian societal culture. The social reforms exist to maintain liberty, freedom, and equality of human beings by overcoming the differences between gender, religion, race, or caste. The modernity of social reforms can be achieved with a cost of degraded tradition. Social reforms prefixes with increased grievances and ideology development [1]. In India, the social reform movements created a positive image, and the reformers are accepted as great contributors to the betterment of women [2].

In 1987, after the immolation of a woman, several reform movements occurred in India, which got support as well as opposition by the people [3]. Based on the initiators, social reforms can be classified as citizen-initiated and government-initiated reforms. Both the reforms take place for the betterment of society, to protect individual's rights, and to maintain societal equality among the citizen.

Irrespective of the location and status, the users can interact with each other through social media sites [4,5]. Use of social media may affect human behavior leading to antisocial activities [4,5], depression [6] and generation of problematic content such as harassment, pornography, hate content [7], flaming and fake news [8].

The hate is connected to motive, emotion, and an attitude [9]. Based on the situation, hate can be expressed through disgust, anger, and devaluation [10]. The anger emotion may cause intergroup conflicts [11]. The hate content can be expressed against the persons belonging to identities such as gender, religion, race, or disability [12]. Hate content, which is expressed with gender difference, is referred to as gendered hate content.

Social movements make concerned authorities to work for the welfare of disadvantaged people [13]. Neo social movements focus on life-related acts rather than class-related. Neo social movements struggle for human rights, such as women's rights and unlike traditional movements, neo social movements are less involved in politics [14]. Often, contemporary social movements are initiated and controlled by social media. The current study identifies and analyses the movements for human rights through social media.

Online hate can be reduced by considering the approaches which belong to "technological, legal and Internet literacy" [15]. Upon receiving the complaint from the users on hate content, the intermediaries review the content and try to block it if identified as hate content. This violates the freedom of expression of perpetrators. As an ethical approach to control hate content, the quarantining method can be used to temporarily block the content and alert the receiver like malicious software reporting [16].

Passing of hate content law from the legislation to authorize intermediaries to moderate content by maintaining the freedom of expression is difficult. Instead, a regulation on consumer protection can be formed and passed by the legislations [17]. Moreover, policing for hate content by a single social media worsens the situation [18]. When policing at one platform takes place, online hate groups may move to other platforms. Therefore, a simultaneous global policing is essential by all social media platforms. The hate content can be controlled by identifying and blocking the hate groups, creating anti-hate groups and allowing counter-speech to neutralize it [18].

With this background, the purpose of the study is set to identify the impact of social-reform initiatives on gender-based hate content generation. Social media content for government and citizen-initiated movements are extracted through Twitter API. The collected Twitter contents are analyzed for hatred nature in terms of emotions using a software in R programming language. Related literature on gender-based hate content and social reform movements is carried out in the next section.

The rest of the article is organized as follows. Section 2 reviews the literature on gender-based hate and social reform movements. In section 3, the methodology and the datasets are discussed. Section 4 presents an analysis of Twitter content on social reform movements and discussion of results. Some of the policy implications are listed in section 5. Finally, section 6 concludes the findings and directs the future work of the study.

LITERATURE REVIEW

A literature review on gender-based hate content and social reform movements is made to understand their nature, existence, and impact. Gender-based hate violence results in the presence of expectations from one gender over the other and unequal power of two genders in a societal environment [19]. This kind of hate is prevalent against women and girls [20]. The harassment with hate content affects the personal as well as professional lives of women [21]. Online hate/harassment is more prevalent against women and minorities [22]. Being online may be unsafe for a woman or an academician belonging to the least populated religion in a country [23].

With the ability to post, share, re-post, and like the messages, social media platforms are popularizing for communication among the citizen. Social media platforms play a major role in political reforms by uniting against the government [24]. In 2009, social media helped in joining against the accused of murdering of a person [25].

The MeToo movement is a social mass movement and an important phenomenon to end "sexual harassment and assault" [26] as a platform to share stories by the victims. Even though the movement is initiated in 2006 on MySpace by a woman, it went viral and popularized in October 2017 when a Hollywood actress in the USA wrote a tweet on sexual harassment expecting the response as MeToo [26]. MeToo, as online activism or reform, is more effective and largely accepted by the victims for fighting against injustice. The MeToo movement raises voice against sexual harassment irrespective of gender, race, religion, and disability, but the responses to it are biased based on these identities [27].

In India, during 1920 and 1930, the temple entry movements succeeded in providing entry to lower caste people into the temples [28]. The citizen-initiated movement, such as the anti-corruption (Lokpal) bill, is initiated in anticipation of overall social good [29]. Recently, the MeToo movement has been launched by victims in Bollywood and supported by millions of change seekers in society. The coverage of the MeToo movement is not limited to the film industry; it has been covered by media, government, and workplaces also [30]. According to search giant Google, India is shining to the brightest for the trending of #MeToo searches [31].

Social reforms play a significant role in framing hate crime laws [32]. The justice system is improved to control hatred against immigrants through reforms [33]. Reforms can be formed by governmental or non-governmental organizations. Many times, the non-governmental organizations supported the framing of the legal reforms through communities to address hate incidents.

The existing research indicates that there exist online gender hate content and social reforms assisting in bringing changes in the society by favoring marginalized people. The citizen support towards social reform movements can be analyzed through social media sites. Therefore, a research question, how social reform movements impact the generation of gender-based hate content is framed. To address this question, an objective to study social reform movements and propagation of online hate content is set. The hatred shared through social reform movements can be accessed with different emotions using Twitter content.

METHODOLOGY

The methodology to analyse both the movements is presented in the following subsections.

Data Collection

As the study is intended to analyze social reform movements and gender hate content, the data is collected from Twitter social media on different social reform movements favoring equality among the genders. The government and citizen-initiated reforms are considered for the study. As a case for the government-initiated reform movement, the emphasis is made on a pilgrimage site (the divine place) in the Southern part of India. On the other hand, the MeToo movement in India is considered as a citizen-initiated reform movement.

To query Twitter social media, the trending words were identified through the search engines when the reforming movements initiated. The keywords/hashtags pertinent to women and equality in temple case context such as "Lord and Ayyeppa" are used to extract tweets on government initiated reforming movement. Similarly, the "#Metoo" hashtag is used to collect data for citizen initiated reforming movement. The extraction of tweets on Metoo movement is limited to Indian geographical area by providing latitude and longitude global positioning system (GPS) coordinate values (latitude: 21.0000 longitude: 78.0000) with the search query. The data collection is initiated immediately after the birth of reforming movements and continued for 45 days spanning over October and November months in 2018. The Twitter data collected for government and citizen-initiated reform movements are 112577 and 58370 tweets, respectively.

Data Analysis

A methodology used for the analysis of social reform movements is shown in Figure 1. The extracted tweets are analysed using a software implemented in R. Each tweet contains values for 16 different attributes like text, created, id, etc. As the opinions are conveyed through the text part of the tweet, the study considered only the values of text attributes for analysis. The collected tweets are pre-processed to eliminate non-contributing information such as punctuations, and digits. The National Research Council (NRC) emotion

lexicon [34,35] is used to obtain sentiment and emotions of the tweets. After knowing the emotions involved in the content of both the reform movements, comparison, and the policy guidelines are made.
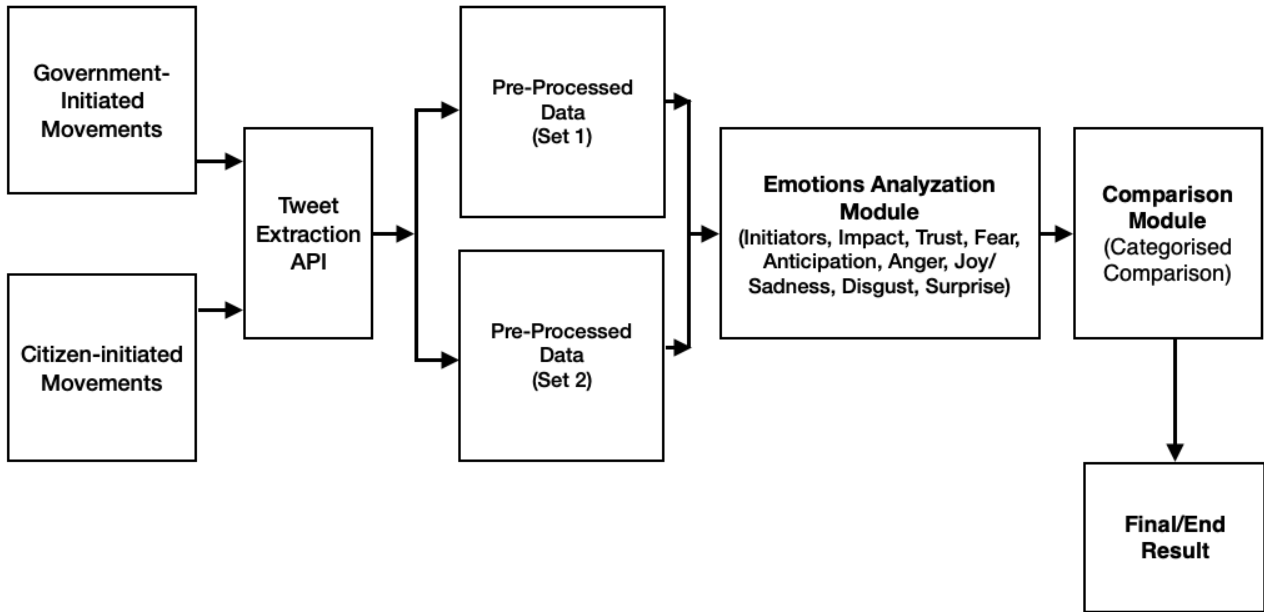

Figure 1. Methodology to analyze social reform movements.

RESULTS AND DISCUSSION

All the results are obtained using the software designed for the purpose. The results of both the reforms are discussed separately, and in the end, a comparison between the reforms is made.

Government Initiated Social Reform

In government-initiated social reform, an attempt will be made to provide justice to the disadvantaged section of the society by incorporating appropriate changes in the existing system. The verdict on the divine place in Southern India is considered as a case for this reform movement. The NRC lexicons are used to analyse collected tweets and the emotional scores for respondents opinions are shown in Figure 2.
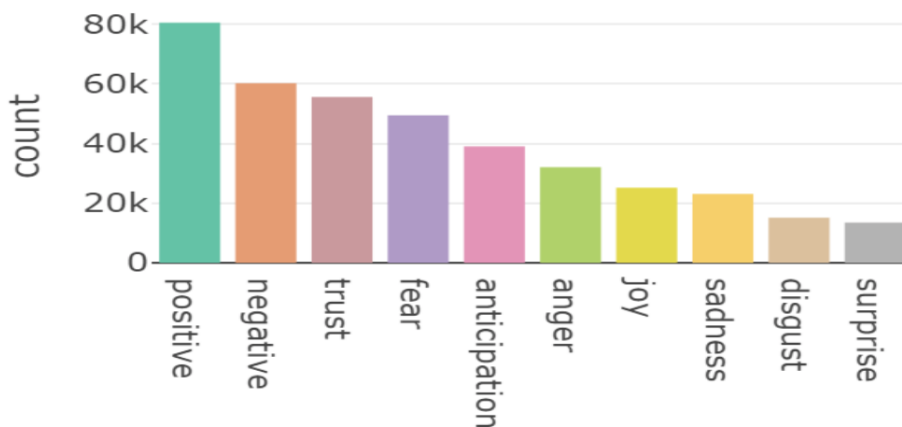

Figure 2. Emotions on a government-initiated social reform movement.

The tweets shared within the social media on the shrine verdict, contain more positive sentiments. This shows that majority citizens are accepted the judgment on the shrine entry case. Among the other eight emotions, the trust is exhibited with a greater number of tweets and indicates that the people believe or trust in this movement towards gender equality.

Fear results when some danger occurs with the living bodies and may lead to behavioural changes. The next highest impacting emotion is fear and depicts that the people are fearful of the implementation of a system for change. The presence of anticipation indicates that even with a lot of trust and fear still, people

have some expectations from the movement. The anger is associated with a negative feeling and less exhibited compared to trust, fear, and anticipation.

Joy and sadness emotions are opposite as the former belongs to a positive feeling and later belongs to a negative feeling. The scores for joy and sadness from the analysis are almost the same. This reveals that one portion of the citizen is happier, and another portion is not happy with the movement. Overall, the movement results in neutrality regarding joy and sadness. The disgust emotion's score value shows that part of the citizens is unpleasant with the movement and trying to reject it. The score of surprise indicates that few citizens considered this movement as unexpected.

Every emotion is expressed using words. The wordcloud for different emotions is shown in Figure 3. As the anticipation is concerned with the future events, expressed with the words like time, temple, wait, long, etc. The anger emotion being aggressive in nature, expressed with the words like court, supreme, fight, attack, etc.
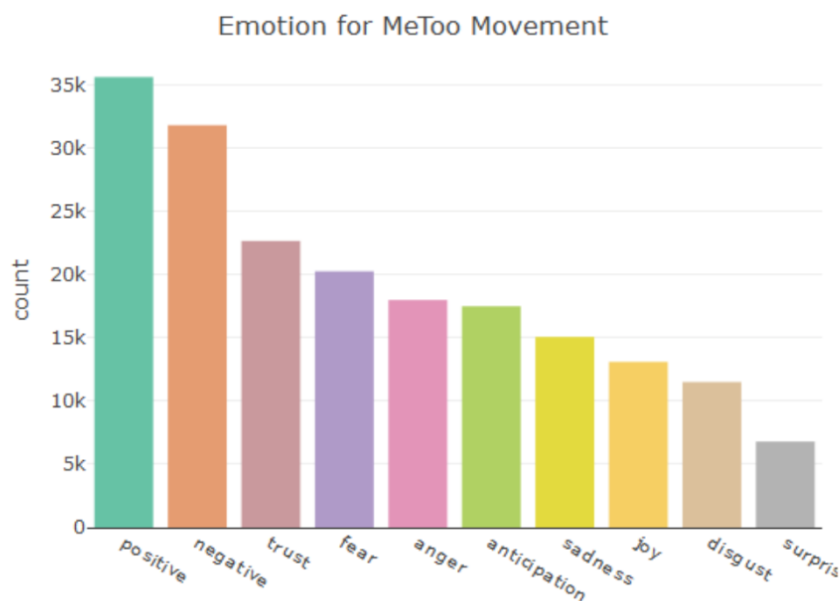

Figure 3. Word-cloud of emotions for a government-initiated social reform movement

The trust is an emotion of positive feeling and expressed using words like the leader, support, sir, religion, etc. The words good, hope, pray, judgment, etc. can be used to represent surprise in case of unexpected incidents. The sadness emotion dealing with negative feelings can be expressed using words like a case, violence, problem, hurt, etc. Joy being opposite to the sadness emotion, can be exhibited through the words save, faith, god, respect, etc. The frightened response is expressed using the words police, verdict, hear, petition, etc. The disgust emotion being unpleasant expressed through the set of words such as shame, discrimination, hell, insult, etc.

Citizen Initiated Social Reform

Citizen initiated social reform will attempt to raise the voice against the injustice that occurred to the marginalized section of the society. The initiators of this movement expect that justice will be provided to the weaker section from governing authorities by introducing appropriate laws and punishing the perpetrators. The MeToo movement, which is initiated in the United States of America in 2017 and currently in India, is

considered as a case for this type of movement. The tweets are analysed like government-initiated movement and the scores for different emotions are shown in Figure 4.

Figure 4. Emotions on a citizen-initiated social reform movement.

The tweets collected through social media on the MeToo movement in India contain more positive sentiments than the negative. This indicates that most of the citizens are accepted the MeToo movement initiation. The higher score value of the trust emotion reveals that the citizen believes or trusts in the movement towards gender equality. After the trust, fear emotion is having more count value than the other emotions and indicates that some people are afraid of the initiation of movement for changes in society. The next highest scored emotion anger is associated with a negative feeling and exhibited as a response to their perceived threat or hurt or harassment. The score value of anticipation indicates that people have some expectations from the movement.

Sadness emotion score value indicates that some people are not happier with the incidents they faced and expressing the worst time they had in the past. As the movement is intended to bring some changes in society, some people feel joy about it. The score of disgust emotion shows that some citizens are unpleasant with the incidents they faced and trying to reject it. The surprise emotion's score shows that a part of the citizens is considered the incident/movement as unexpected.

The word-cloud for different emotions is shown in Figure 5. The anticipation emotion is expressed through the set of words like time, come, start, thought, etc. The words such as accuse, assault, fight, harass, and attack are used to represent anger emotion by the citizen in the movement. The trust emotion is expressed with the words like support, truth, show, real, law, and justice. The words good, hope, inspire, young, surprise, resignation, and India are used to represent surprise emotion for unexpected incidents.

The sadness represents negative feeling and expressed with words like the case, violence, problem, the victim, prison, black, and lost. Joy is exhibited through the words sex, love, white, share, respect, and music. The words used for representing the fear emotion are sexual, change government, and fire. The disgust emotion is expressed through the set of words such as rape, abuse, misconduct, power, shame, and disgust.

One of the tweets involving MeToo hashtag is "In the wake of the #MeToo movement, more sexual harassment scandals on college campuses have come to light". The nature of tweet reveals the positive opinion about the MeToo movement. The victim of the incident may feel happy as it could been possible to expose the incident in anticipation of justice. Another tweet "I was eating tonight and the waiter poured me a glass of water WITHOUT my consent! I am so tired of patriarchy and…" is clearly represents gender based hate.

Figure 5. Word-cloud of emotions for a citizen-initiated social reform movement.

Comparison of Reform Movements

Even though both government (Shrine verdict) and citizen-initiated movements (MeToo) are intended to provide justice to the marginalized section of the society, there exist some similarities and differences between them. The percentage of different emotions for government and citizen-initiated movements are shown in Figure 6 and Figure 7, respectively. Based on the preceding discussions, some comparisons are made, as shown in Table 1.
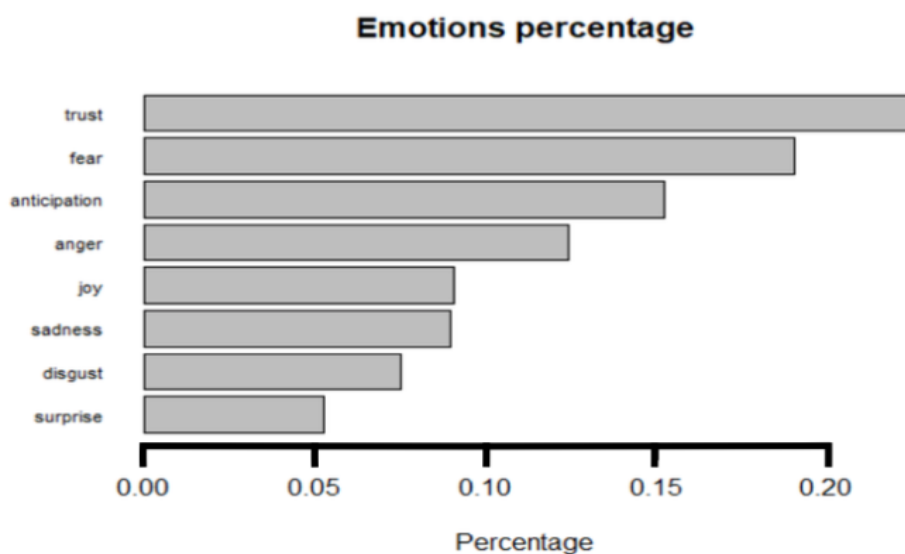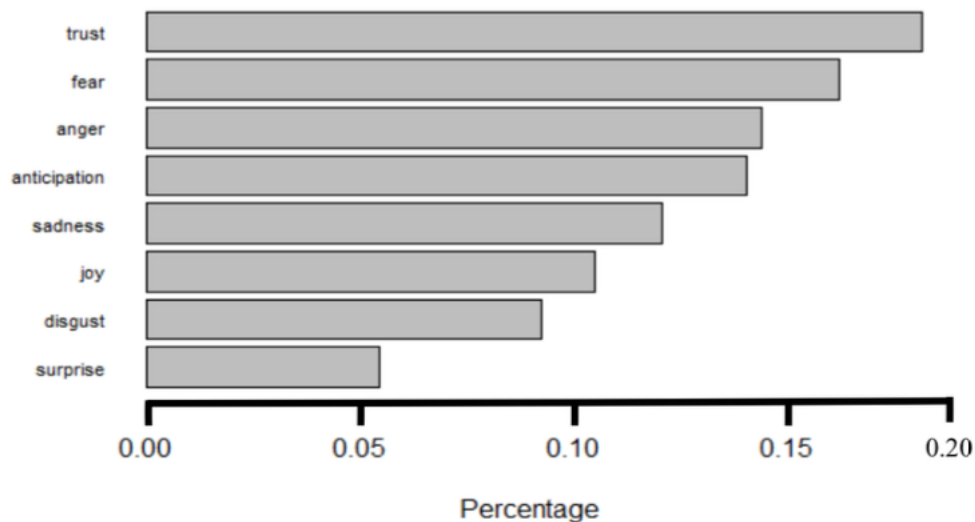

Figure 6. Percentage of emotions for a government-initiated social reform movement.

Figure 7. Percentage of emotions for a citizen-initiated social reform movement.

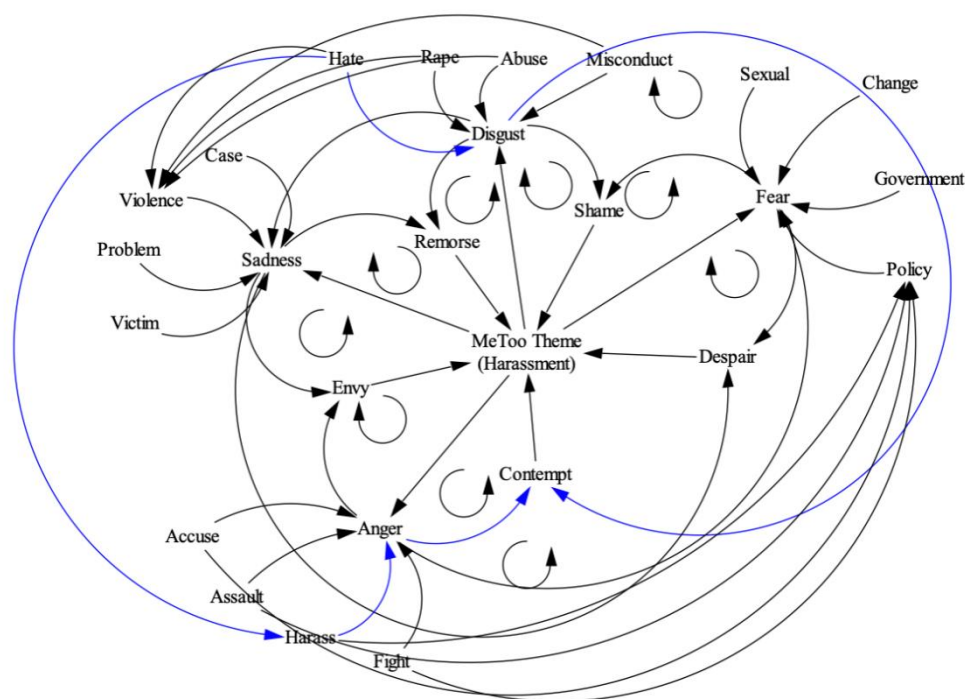**Table 1.** Government-initiated movement vs. citizen-initiated movement.

Feature/Emotion	Govt.-initiated movement (Shrine verdict)	Citizen-initiated movement (MeToo)
Initiators	Initiators are lawmakers	Initiators are victims
Impact	The positive impact is more than the negative	The positive impact is more than the negative
Trust	As the movement is initiated by the government and lawmakers, trust is more (25 percentage)	Trust is less (18 percentage) as the citizen think more for trusting each other
Fear	As the movement is supported legally, fear is more (19 percentage)	Fear is less (17 percentage) to tweet as the movement is not yet covered under the legal framework
Anticipation	As the people expect more from the government and lawmakers, the anticipation is more (15 percentage)	Comparatively, the anticipation is less (14 percentage) as the lawmakers, and the government is not involved in the movement
Anger	Anger is less (12 percentage) as no particular citizen is victimized	As the people (victims) are harassed, the anger is dominating (15 percentage)
Joy/Sadness	As the movement is initiated by the government, without the effort of citizen and making changes in the society, the citizens have more joy than the sadness	Being the victims of harassment or well-wishers of the victims, the people expressed more sadness than the joy
Disgust	Disgust is less (7 percentage) as no hostile or unpleasant behavior towards a particular person	Act as a platform to share their worst experiences in life, hence, content possess more (9 percentage) disgust than in government-initiated movement
Surprise	As the movement is planned and implemented, there is less surprise	As the movement is not planned and suddenly occurred, the surprise emotion is more

Hate content is influenced by the scores of emotions such as anger, fear, disgust, and sadness [36]. Hate can be expressed through disgust, anger/fear, and devalue [10]. Table 1 reveals that there are many of words for these emotions in both the movements. In general, these recorded emotion values indicate that there exists some hatred in the content exchanged over both the movements. The exchange of hatred emotions is more in the citizen-initiated social reform movement.

The cohesiveness of Hate and Harassment

The relationship between hate and harassment is identified by examining citizen-initiated movement MeToo. The causal loop diagram for the results of the MeToo movement is shown in Figure 8. The emotions which contribute more to the hate content such as anger, fear, disgust, and sadness [36] are considered to examine this relation. Representing the magnitude of harassment and urging the action against the harasser is the central theme of the MeToo movement. The harassment is originated from different dyads and the dyads from different emotions. The words or acts contributing to different emotions, emotions contributing to dyads, and dyads contributing to the MeToo theme are shown as loops in figure 9. The theme of the Metoo movement "harassment" is identified by observing the text part of the tweets. The existing studies revealed that there is a relationship between the different emotions and dyads such as contempt, remorse, despair and shame [37-39].

Figure 8. Causal loop diagram of MeToo movement.

Based on the frequency of occurrence, the most occurring words related to different emotions such as anger, disgust, sadness, and fear are identified from the word-cloud of citizen-initiated reform. Frequently occurring words are connected to their respective emotions, emotions are connected to different dyads, and dyads are connected to the theme of MeToo reform. The connections between the related words of different emotions and from the MeToo theme to different dyads are drawn to a complete causal loop diagram using the Vensim software tool.

Contempt, a strong dislike feeling, is a dyad and originated from the combination of anger and disgust emotions [40,41]. The anger emotion is contributed by words such as accuse, assault, fight, and harassing. Similarly, words such as abuse, hate, misconduct, and rape are contributors to disgust emotion.

As the citizen-initiated movement- MeToo is initiated in extreme situations (after being the victims of severe hatred), the movement carries more hatred expressions against their harassment in the fast. This reform movement acts as the platform to express hatred against the haters. The government-initiated movement, the divine place verdict, is initiated to maintain equality in society (to avoid severe hatred). Therefore, it carries fewer hatred expressions. Hence, the research question, of how social reform movements impact the generation of online hate content, is addressed.

IMPLICATIONS TO POLICY

Results

The gender-based hatred analysis is made with the help of social reform movements. The emotions such as anger, disgust, and sadness are expressed more through the MeToo movement to express the feelings of victims against the harassment faced. The results show that technology act as a vehicle for disseminating sentiments into society. The acceptance level of government-initiated movements is more than that of citizen-initiated. Both the movements have shared the grievances, a bit more in the citizen-initiated movement.

Implications

Based on the discussion of results, the following policy implications are drawn.

- As the hate content can be expressed through emotions like anger, disgust, fear, and sadness, yoga can be adopted in schools and colleges as curricular and co-curricular activity to control these emotions.
- The content which shares through social reforms on social media can be considered important for policymaking on a particular act.
- While preserving the freedom of expression, the quarantining approach (temporarily blocking hate content and alerting the recipient of the content) to reduce hate content can be encouraged.
- As the passing of hate content law contradicts freedom of expression, the consumer protection law can be easily passed by the legislation.
- Every device which connects to the Internet may be equipped with hate detection applications to alert users.
- As the hate groups move from platform to platform, the globalized simultaneous policing by all the platforms is advisable than the policing by a single platform.
- Formation of anti-hate groups and encouraging them to neutralize hate content can reduce online hate content.
- If a division of citizen is made based on gender, it results in larger groups than any other identity-based divisions such as religion, race, and disability. Therefore, law enforcement to punish the perpetrator of hate content against gender is helpful.
- Online social networks and the Internet, in general, should be given some freedom to the moderation of content flowing through their networks. The activities of these organizations can be monitored by some concerned Government authorities to ensure the proper use of rights given to them.

CONCLUSION

The study presents gender-based hatred analysis through social reform movements. Hatred-associated emotions such as anger, disgust, and sadness are expressed more through the MeToo movement. This indicates that the citizen-initiated movements encourage more to express feelings of victims against the harassment or the worst situation they faced than the government-initiated movements. As the social reforms are assisted by information and communication technology, it can be concluded that technology acts as a vehicle for disseminating sentiments or emotions deeper into society at a faster rate.

Though the impact of both the government and citizen-initiated movements is positive, the acceptance percentage of the former one is more than the latter. The sharing of hatred and grievances is present in both the movements, but more with the citizen-initiated movement. The sharing of information on harassment or injustice by individuals with high magnitude acts as a mechanism to counter hate content. In the future, this may result in reduced hate content. Both hate and harassment are cohesive and combined as contempt feelings.

As policy implications for controlling hate content, the social reforms, yoga, quarantining approach, consumer protection law, hate detection apps, simultaneous policing across all platforms, anti-hate groups, gender-specific sections under IPC, and social media can be considered adequate. The study collected and analyzed only Twitter social media content for two different cases. In future work, the study can be enhanced to analyze the content of other social media platforms such as Facebook and a greater number of cases to produce a more generalized outcome for policy implications.

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