Twitter and Social Movement: An Analysis of Tweets in Response to the #metoo Challenge

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Abstract

Twitter as a social tool is helpful to measure the sentiments of people, be it the death of any personality, a mass protest, epidemic or natural calamity. The current study observes how effective Twitter to assess the sentiments of people amidst the #metoo campaign. Twitter users were found to be very vigorous and highly responsive during #metoo campaign. There has been overwhelming participation of media and online websites as well as individuals on this movement. With the participation of diverse Twitter handles, #metoocampaign was conversed in 400 tweets during study period. Along with these hash tags #withu, #resist, #womenpower, #believewomen, #womensmarch, #womeninstem, #feminism, #imwithher also used. All these hash tags convey messages related to women empowerment and feminism. The major sentiment involved in the movement is related to sexuality. Rehab, abuse Justice and harassment are also the most common emotion shared in these tweets. There is not much tweets about Men and kids.

Keywords: Twitter, social media analysis, metoo campaign, social media metrics, sentimental analysis, NVIVO, hashtags

1. Introduction

"Social media gives public a platform to share in real time their experiences, views, information, or to express their opinions on specific subjects, political issues or social events. Facebook and Twitter, the most popular social media platforms with huge user bases have remained instrumental in this regard" (Gul et al., 2016).Twitter.com is a popular micro blogging website. Tweets are generally used to express a tweeter's sentiment on a subject or an issue. There are organizations which surveys twitter for studying sentiment on a particular subject. The challenge is to collect all such significant data, identify and encapsulate the overall emotion on a topic. "Twitter as a social tool is helpful to gauge the emotions of people, be it the death of any personality, natural calamity or activities of political figures during different political processes" (Gul et al., 2018).

Hash tags helps in identifying the relevance by identifying the degree of activeness to particular context or incident and thus gives hints to reader's inferential process. Me too campaign started in 2017 when allegations raised against the Hollywood producer Harvey Weinstein. Later personal stories started reporting from women in all industries around the world. The hashtag #metoo came to front page as rallying cry against the Sexual harassment and assault (The Guardian, 2017). The movement commenced on social media after a call to action by the actor Alyssa Milano, one of Weinstein's most vocal critics, who wrote: "If all the women who have been

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sexually harassed or assaulted wrote 'Me too' as a status, we might give people a sense of the magnitude of the problem" Within hours, millions of women and men too disclosed their harassment story through twitter, Facebook and Instagram. People started talking about the abuse they have confronted in their lives.

Fig. 1. The first tweet with regarding to the metoo challenge

Around 68,000 people have until now responded to Milano's tweet and the #MeToo tag has been used more than 1million times in the US, Europe, Middle East and outside. The French people used #balancetonporc, the Spanish #YoTambien, and in Arab countries the hash tags وأنا_كمان# and وانا_ايضا# were leading. Facebook reported that 4.7 million people around the world engaged in the #metoo conversation, with over 12million posts, comments, and reactions inside 24 hours. Social media open a large platform for people especially women for democratized feminism, it helps women to share the trauma of sexual violence. The hashtag also inspired some other hashtags used by men such as #IDidThat and #HowIWillChange, in which men have admitted inappropriate behavior' (The Guardian, 2017).

Kouloumpis and Wilson (Kouloumpis, Wilson, 2016) published a paper on Twitter sentiment analysis and examined the helpfulness of linguistic features for identifying the emotion of Twitter messages. The researchers assessed the utility of existing lexical properties as well as features that capture information about the informal and creative language used in micro blogging. In another study by Verger (Vergeer, 2015) on Semantic sentiment analysis of Twitter, presented a fresh method of adding semantics as supplementary features into the preparation set for sentiment analysis. Twitter as a political communication and campaigning tool during the period of Indian election 2014 has been studied by Ahmed et al. (Ahmed et al, 2016).

Gender-Based Violence (GBV) in India was discussed by Tilly, Catherine, and Elyssa (Tilly et al., 2018) based on the English language tweets posted from 3rd September to 1st October 2013. The result shows that women challenged the norm which blamed women for GBV more often than men. Also pointed out the importance to encourage women to participate more in the Twitter discussion. In India, women are facing a significant dishonor related to victim - blaming and treating as behaved immorally than supporting after undergoing GBV (Easteal et al, 2015).

The Twitter analysis was also used to analyze the strategies. The marketing strategy of ten sports gamblers of the UK was examined based on 3375 Tweets posted during 2018–2019. Surprisingly there was no responsible information on gambling in the large majority of these tweets (Killick, Grifths, 2020). Four hundred tweets on '#secondcivilwarletters' were analyzed to find out the authorization, moral value, rationalization, and mythopoesis (Ross, 2019). During the Indonesian Presidential election, Budiharto and Meiliana (Budiharto, Meiliana, 2018) predicted the results based on the tweets gathered from March to July 2018. Analysis using R language gave reliable results. Bruns and Stieglitz (Bruns, Stieglitz ,2013) discussed the importance of standard metrics to improve the comparability across twitter hashtags. Ontology based analysis of hashtags #smartphone resulted in a detailed analysis of opinions related to a topic (Kontopoulos et al., 2013). Analysis of the twitter hashtag #MPNSM shows the diverse mix of terms that include "MPN" (myeloproliferative neoplasm), social media, "pts" etc. (Pemmaraju et al., 2016). Based on demographics, there is a significant difference in the tweets of users on journal articles of psychology and political science (Zhou, Na, 2019). How to use twitter for learning and to connect with people are discussed by Taylor and Weigel. (Taylor, Weigel, 2016). The #NHI related to

"The South African Health Insurance Bill" was analysed by Struweg (Struweg, 2020) indicates the importance of "social media during critical events". Emotion detection on twitter was studied by Strapparava and Mihalcea (Strapparava, Mihalcea 2007).

2. Materials and methods

The study was conducted on the tweets related to #metoo campaign and data was collected from Twitter amidst August 2020. The study was conducted on tweets that were posted in English. Tweets that were translated from other languages were also excluded. The tweets extraction and analysis of the data has been done with the help of Quantitative data analysis software NVIVO. NVivo is the foremost software for analyzing unstructured data. Its powerful terminal helps people conducting research to organize, analyze and visualize qualitative data, so they can spotlight on finding new insights and making better conclusions. NCapture Plug - in was also used to extract the data from Twitter. NCapture enables to rapidly and effortlessly capture content like web pages, online PDFs, Twitter tweets and Face book posts and import into NVIVO 10 for Windows.

Tweets analysis has been conducted in different phases. The diagrammatic representation of the analysis is given in Figure 2. The beginning the input keyword identified and fed into the system and tweets retrieved in the second stage. Data processed using Nvivo. Stop words are removed and noises are avoided. Analysis of the tweets has been conducted in this stage. Tweets were classified in the next stage. Analysis has been conducted after this. The results of the analysis represented graphically in the final stage.

Fig. 2. Diagrammatic representation of the overall tweets analysis

The study was conducted to examine: how Twitter can be used to measure the expressions of public during the #metoo campaign and to determine how people use twitter to express and communicate their opinions, feelings, and experiences with reference to #metoo campaign.

3. Discussion

The present study analyses the use of Twitter to discover how people reacted to #metoo campaign. With 140 - character briefness, Twitter makes posting easier and convenient. In twitter, length is limited to a sentence or a headline (Nakov, 2017). Twitter users were found to be very vigorous and highly responsive during #metoo campaign. Earlier studies show that online forums are considered as a place to securely express viewpoints and experiences (O'Neill, 2018). The study conducted by Andalibi, et al (Andalibi et al., 2016) found that "most posts were from those who had experienced sexual abuse and were seeking support, nine percent of the topics focused on providing support to others". In a similar study Moscatelli et al (Moscatelli et al, 2021) analysed the criticism against #MeToo in Italy. Bogen et al (Bogen et al, 2018) pointed out that Twitter is a platform to describe and discuss to others on "sexual violence experiences". Palmer et al (Palmer et al, 2021) conducted a survey among the students of a private university in U.S. to identify the sexual assault revelation before and after #MeToo. Students from Asia and non LGBQ community are not much interested in revealing the sexual assault.

In order to express his/her view or opinion, users have created 95 different hash tags related to "metoo" in their tweets. There has been overwhelming participation of media and online websites as well as individuals on this movement. The major sentiment involved in the movement is related to sexuality. Rehab, abuse Justice and harassment are also the most common emotion shared in these tweets.

4. Results

If the tweets contain at least one word #metoo, then the tweet is considered as it has some degree of polarity with the subject. The results of the study can be summarized as follows:

Involvement

With the participation of diverse Twitter handles, #metoocampaign was conversed in 400 tweets during study period of 6months. The word cloud exported from NVIVO is given in the diagram. The size of the words represents the frequency of use of the word. #metoo, movement, women, https, times up are some of the most frequently used words.

Fig. 3. Word cloud exported from NVIVO

Top hash tags

With 140 characters, a Twitter user can construct any number of hash tags to express his/her outlook or opinion' (Gul et al, 2016). Other than the studied hash tags, users have created 95 different hash tags in their tweets. The top 25 hash tags are shown in the table. #metoo is the most commonly used hash tag times up is the second most widely used hash tag. Along with these hash tags #withu, #resist, #womenpower, #believewomen, #womensmarch, #womeninstem, #feminism, #imwithher also used. All these hash tags convey messages related to women empowerment and feminism. #womeninstem mention the women in science technology, engineering and math and that is women in higher education. These hash tags can be classified as has tags related to women empowerment and another category if hash tags include #trumplies, #votethemout, #resign, #modiinuae, #impeachtrump can be considered as another category called political category. This shows the impact of #metoo movement in the political circles.

Table 1. The top 25 Hashtags

Hashtag	Number
#metoo	598
#timesup	41
#withyou	8
#resist	8
#incredibleindia	4
#womenpower	3
#votethemout	3
#trumplies	3
#sexualharassment	3
#resign	3
#nobannowall	3
#modiinuae	3
#indivisible	3
#india	3
#imwithher	3
#impeachtrump	3
#feminism	3
#dreamers	3
#democrat	3
#believewomen	3
#art	3

#wonderwoman	2
#womensmarch	2
#womeninstem	2

Tree Map

Text analyses extracts meaningful pattern from unstructured text. This text analysis helps to analyze the sentiments in text. The area allotted for each text is directly proportional to space allotted for the key term.
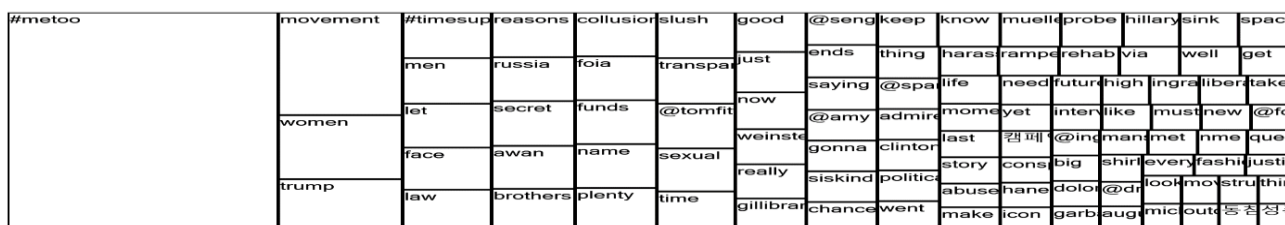

Fig. 4. Tree Map exported from NVIVO

Participation and type of Twitter profiles

There is no limit on creating a Twitter profile. It can be generated by an individual, group, organization, institution, agency, etc. For the purpose of study, we analyzed the individuals who posted more than 10 tweets. As evident from Table, there has been overwhelming participation of media and online websites as well as individuals on this movement. The following groups/individuals posted more than 10 tweets.

Table 2. Groups/individuals posted more than 10 tweets

Word	Length	Count	Weighted Percentage
@tomfitton	10	35	0.35
@sengillibrand	14	23	0.23
@amy	4	22	0.22
@sparklesoup45	14	19	0.19
@ingrahamangle	14	12	0.12
@foxnews	8	12	0.12
@drpyo	6	11	0.11
@realdonaldtrump	16	10	0.10

Expression of tweets

Term frequency extracts the mostly used meaningful words and their count. Sometime the most frequent words are not exactly meaningful. Articles, conjunctions, adverbs etc. in the tweets has to be removed before extracting and counting. These words are called stop words. Stop words removal has to be done at preprocessing stage. Here the software removes the stop words and the extracted words give detailed account on what the content is about. In order to identify the sentiments involved in the tweets, an analysis has been done using some most frequently used terms as the key term. The key terms have been selected after studying the tree map. Abuse, harassment, justice is the most commonly used word along with me too hash tag. It is shows that the hash tag tweets mainly disclose the issues related to abuse and harassment and justice. It's also shows along with the discussion of sexual abasement the tweets also discuss about the rehabilitation process also. Rehab, abuse Justice and harassment are also the most common emotion shared in these tweets.

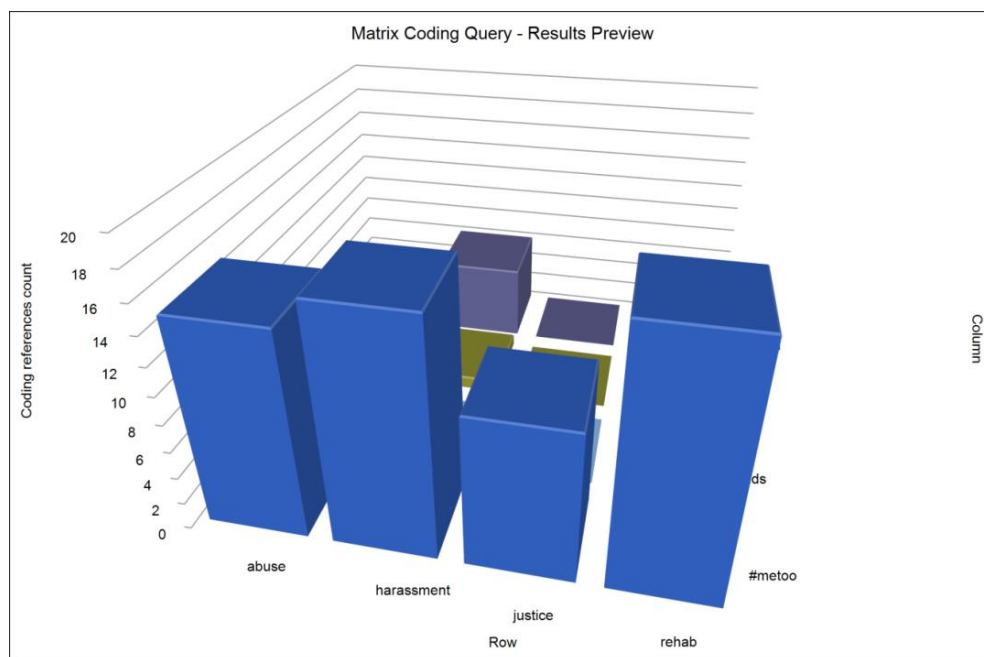The most widely used terms are: *Abuse, Harassment, Justice, Men, Movement, Rehab.*

Fig. 5. Most frequently used terms in the tweets

Correlation between the selected Key terms and #metoo campaign

To analyze the content of the tweets in more detail, an attempt has been made to identify the correlation among the mostly used key terms. It is clear from the Table 3 that #metoo is highly correlated with the key terms Abuse, Harassment, Justice, Rehab and the term Sexual. That is #metoo movement handles mainly with sexual abuse and harassment. Men and Kids does not show any correlation with these terms. That does not mean kids or men are free from sexual abuse whereas #metoo movement does cover child abuse or men's sexual harassment experiences. Scope of #metoo movement is beyond that. That's why when it comes to women, it shows a good correlation. Correlation between women and the term Sexual is comparatively high.

The table clearly shows that the major sentiment involved in the #metoo movement is related to sexuality. Rehab, abuse Justice and harassment are also the most common emotion shared in these tweets. There is not much tweets about Men and kids.

Table 3. Correlation between the selected Key terms and #metoo campaign

	Abuse	Harassment	Justice	Rehab	Sexual
#metoo	15	17	11	18	33
Kids	0	0	0	0	0
Men	1	1	0	0	1
Women	1	6	0	0	7

4. Conclusion

Micro blogging has now become a very particular communication tool. Millions of people share their views, opinions on various topics in their sites. Hence twitter is a rich source of opinion and view of different people around the world. The present study reveals how Twitter can be used to assess the sentiments of people. The study can further developed by measuring the sentiments of Twitter users from geographical and gender perspective.

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