

## **Users' Reactions to Rape News Shared on Social Media: An Analysis of Five Facebook Reaction Buttons**

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### **Abstract**

This study investigated 3.50 million Facebook reactions collected from 9,429 Bangladeshi news items about rape shared on social media from 2016 to 2021. The primary aim of this study was to understand users' different reaction patterns based on the five major Facebook reactions (i.e., *love*, *haha*, *wow*, *sad*, and *angry*). Based on the theories of emotion, we quantitatively answer one research question: How do social media users react to rape with the five major Facebook reactions? The results suggest that users are more likely to express disdain toward rape and sympathy toward the victims using Facebook reactions by using the *angry* button, along with the *sad* button. In rape news, both reactions are consistent and maintain a strong positive correlation, meaning they increase and decrease together. Although many users tend to mock and laugh at rape incidents and the victims, trend lines suggest that such expressions may not be consistent with time. Despite contextual relevance, we presume that in socially and morally unacceptable events like rape and war, the valences of reactions alter to some extent: *angry* and *sad* usually become positive, while *love*, *wow*, and *haha* become negative. Some strengths and limitations of the study are discussed as well.

*Keywords:* rape news; social media; Facebook reaction; reaction analysis; Bangladesh.

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This study analyzed 3.50 million users' reactions collected from 9,429 rape news shared on the Facebook pages of ten Bangladeshi news media. The relevant previous studies mainly investigated Facebook reactions, rape news, reactions to rape news, rape news in social media, and the role of social media in a rape culture (Badache & Boughanem, 2017; Brunell et al., 2019; Check & Malamuth, 1983; Eberl et al., 2020; Freeman et al., 2019; Giuntini et al., 2019; Han, 2021; Ikizer et al., 2019; Jost et al., 2020; Kilgo & Midberry, 2022; Molina et al., 2020; Navarro & Coromina, 2020; Orth et al., 2021; Smoliarova et al., 2018; Tian et al., 2017; Tran et al., 2018; Turnbull & Jenkins, 2016; Varanasi et al., 2018; Woodruff et al., 2020; Zaleski et al., 2016). However, no particular study focused on the social media users' reaction to rape and rape news. In Bangladesh, *rape culture* has been becoming more prevalent in the last two decades (Odhikar, 2018; Mrenmoi, 2021), and social media has a considerable contribution to it (Al-Zaman, 2017). With the idea of rape culture, we are indicating the extreme form of online misogyny that is partly dominating the Bangladeshi social media space, which is arguably an attempt to exclude women from the public. However, no mentionable attempt from the scholars has been observed to date that explains such phenomena. In this regard, the present study is interested to understand how social media users react to rape using the five major Facebook reaction buttons. The findings suggest that social media users are not likely to express much *support* to rape and *antipathy* toward rape victims as the previous studies presumed. However, such emotional expressions may be altered so their meaning is the opposite of the usual meaning.

This paper is divided into four main sections. In the following section, some relevant literature has been reviewed, along with a conceptual framework for this study. The methodology section illustrates the data collection and analysis process. Some major and minor results are discussed with relevant insights in the next section. Lastly, some strengths and limitations along with recommendations have been included in the conclusion.

## **Background**

### **Social Media Users' Emotional Reactions**

An increasing number of social media users are expressing their emotions using emojis. As a result, social media users' emoji-based reaction analysis is receiving more attention from researchers around the world. The analysis of these emotional

reactions is also highly effective to understand what types of content are more and less popular on social media, how users react to a particular type of content and topic, and what are the meanings and purposes behind using the reaction buttons (Freeman et al., 2019; Larsson, 2018). Emoji-based emotion analysis, including the analysis of Facebook reaction buttons, has now become an interdisciplinary field, allowing researchers from different fields to analyze users' reactions about topics such as politics (Jost et al., 2020), law (Brunell et al., 2019), marketing and finance (Han, 2021), media advocacy and campaign (Turnbull & Jenkins, 2016), and social services and management (Molina et al., 2020). Despite the growing scholarly interest in social media users' emotional reactions, most of the previous studies in this area were on textual analysis instead of emoji-based reaction analysis (Freeman et al., 2020; Varanasi et al., 2018).

Clicking a reaction button on Facebook gives users satisfaction in expressing themselves. However, users' preferences and topical interests may vary. For example, sensational posts receive more responses (Kilgo & Midberry, 2022). In another account, posts that represent social outrage or any feminist activism tend to receive more attention from users (Navarro & Coromina, 2020). However, the types of reactions these posts receive the most frequently are not clear. Other studies found that topics related to gender, genetics, agriculture, and the environment receive mixed responses from users, but scientific research articles receive mostly positive responses (Freeman et al., 2020). Instead of issue-specific reactions, some studies focused on content-specific reactions. For example, Geboers et al. (2020), following a mixed-method analysis, explored social media users' reactions to social media images pertaining to the Syrian war. They found that certain visual images were correlated with the dominant reaction buttons. It is true that sometimes more than one reaction can be dominant for a particular post, leaving room for multiple interpretations (Geboers et al., 2020).

How are the users leveraging the major reaction buttons to express their emotions? Do such digital emotional reactions correspond to their actual emotions? How do such expressions change over time, and what are the influencing factors? Such questions are significant in the analysis of users' emotional reactions. According to Larsson (2018), the practice of pressing the *like* button is slowly decreasing, while

using other reaction buttons is increasing with time, because the versatile reaction buttons can help users express more nuanced emotions about what exactly they are feeling (Stinson, 2016). However, it becomes a contesting idea whether an emotional button can express the users' actual emotions since previous studies produced contradictory results (Tian et al., 2017). Previous studies also indicated the complexities of attributing specific meanings to specific reactions. That means not every reaction always corresponds to its conventional or perceived meanings. For example, the *love* button is often used instead of the traditional *like* button (Smoliarova et al., 2018). Also, with the *like* button, users can express different reactions, such as happiness, sadness, fear, disgust, anger, positivity, and negativity. Interestingly, due to *like's* ambiguous nature it was excluded in many previous studies (e.g., Geboers et al., 2020; Jost et al., 2020; Al-Rawi, 2020). Again, in terms of emotional polarity, Giuntini et al. (2019) found that *love* and *haha* are mostly positive, while *angry* and *sad* are mostly negative; *wow* expresses surprise that can be positive, negative, or neutral. It is also found that while *sad* is mostly negative, *angry* can express positive expressions ironically (Tian et al., 2017). Geboers et al. (2020) categorized the reactions into three types: positive (*love, haha*), negative (*sad, angry*), and neutral (*wow*). Thus, previous studies suggest that Facebook reactions may or may not be the actual index of users' real-life reactions and can vary widely as well. Apart from this, it might be equally interesting to observe the positions of the buttons according to their valence: *sad* and *anger* are placed on the right side that might take more effort for the user, while *love* and *haha* are placed on the left, which demands less effort (Freeman et al., 2020). It could be Facebook's policy to make the platform more positive, placing the positive buttons nearby (Al-Rawi, 2020).

Some studies analyzed the correlation between the reactions in various contexts. For example, Geboers et al. (2020) conducted a Spearman's Rho correlation test to identify the correlation between the five major reactions (i.e., *love, haha, wow, sad, angry*) on Syrian war images. The result suggests that *love* is positively correlated with *wow* ( $r = .419, p < 0.01$ ) and *haha* ( $r = .444, p < 0.01$ ), and negatively correlated with *sad* ( $r = -.145, p < 0.01$ ) and *angry* ( $r = -0.350, p < 0.01$ ); *wow* is positively correlated with *haha* ( $r = .469, p < 0.01$ ) and *angry* ( $r = .099, p < 0.01$ ); *haha* is negatively correlated with *sad* ( $r = -.152, p < 0.01$ ) and *angry* ( $r = -.001, p < 0.01$ ); *sad*

is positively correlated with *angry* ( $r = .738, p < 0.01$ ). In a similar study, Smoliarova et al. (2018) identified the correlation between the reactions collected from the news media's Facebook pages. However, unlike Geboers et al. (2020), the results of this study demonstrated all positive correlations with moderate degrees.

## Reactions to Rape

In relation to the present study, we want to understand social media users' reactions to rape and rape news from previous studies. In particular, we are interested to know about users' attitudes toward rape culture and how they promote or discourage it. In many cases, as previous studies demonstrated, social media have been used for anti-rape campaigns, to support rape victims, or to share the stories of the victims (Harp et al., 2018). It even made some prominent anti-rape protests, such as #sendeanlat, #nakedprotest; #MeToo, #YoTeCreo, and #Endrapeculture possible (Belair-Gagnon et al., 2014; Ikizer et al., 2019; Orth et al., 2021; Anastasia Powell, 2015; Prendergast & Quinn, 2021). Interestingly, social media was used as a rape witness to identify the perpetrators and give justice to the victims (Pennington & Birthisel, 2016). Despite its important role in anti-rape initiatives, social media is frequently used as a tool to nourish sexual violence and rape culture (Dodge, 2016). For example, a Canadian teenager named Retaeh Parsons was sexually assaulted at a party, and those images went viral on social media platforms. She experienced intense online shaming and humiliation and committed suicide afterward. The cases of Jane Doe and Audrie Pott were similar (Dodge, 2016). In many countries, including Bangladesh and India, two South Asian countries where rape culture is intense (Al-Zaman, 2017), many girls and rape victims committed suicide after their secret videos were leaked by the perpetrators and went viral, which later triggered online shaming (e.g., Mohanty, 2018; Mrenmoi, 2021). From these cases, we infer that social media is somewhat normalizing and legitimizing rape culture around the world.

A few studies investigated users' reactions to rape. Orth et al. (2020) analyzed public comments on shared news regarding #Endrapeculture, an anti-rape online hashtag movement. They found two dominant reactions from the public: victim-blaming and trivializing rape culture. According to the victim-blaming narrative, many users believed that the protesters were provoking the potential rapists, and women's

dress can either bring attention to or prevent them from being sexually assaulted. It seemed to “perpetuate the notion of the aggressive male sexual desire” (Orth et al., 2021, p. 1). On the other hand, trivializing rape culture suggests that “rape culture is pervasive in society and continues to be re(produced) through discourse on social media platforms” (Orth et al., 2020, p. 243). More studies explored how victim-blaming has been a common reaction of social media users (Wellman et al., 2017; Zaleski et al., 2016). Like the study of Orth et al. (2020), Zaleski et al. (2016) also analyzed users’ comments posted on rape news shared on social media and forums. They found users’ four dominant reactions: victim blaming and questioning; survivor support; perpetrator support; trolling statements about law and society. In many cases, users do not believe rape stories or think that there might be a hidden agenda behind rape accusations. Many comments they found on rape were in fact sarcasm, prejudice about gender, and support toward the perpetrators (Zaleski et al., 2016). The reason could be that men are more likely to support pro-rape attitudes, who adopt rape myths more than women do (Brady et al., 1991; Check & Malamuth, 1983). According to Allison and Risman (2013), men are socialized to believe that achieving patriarchy-driven masculinity is the only way to establish their manhood. However, while most of the users’ comments on the rape issue contained covert support of rape, many comments were supportive comments towards the survivors as well (Zaleski et al., 2016).

These studies are limited in a few ways: theories of emotion were not applied to understand social media users’ reaction to rape; studies on users’ reaction to rape were mostly based on textual or content analysis of public comments; emotional theories from psychology and rape news from communication and journalism disciplines were barely bridged. Therefore, in the present study, we ask the following research question: How do social media users react to rape with the five major Facebook reactions?

### **(Re)framing Users’ Reactions to Rape**

In this study, we examined Facebook reactions to understand users’ reactions to rape news: what were the more and less prevalent reactions, how the reactions were correlated with each other, and how their reactions changed over time. We prepared a conceptual framework to frame users’ reactions using the selected five Facebook

reaction buttons. Previous studies used different reactions for analyzing different issues. For example, Al-Rawi (2020) analyzed *love*, *sad*, *wow*, and *angry* to mainly understand how users express different emotions toward different types of news. Therefore, the study excluded the *haha* and *like* reactions. On the other hand, Geboers et al. (2020) preferred *love*, *wow*, *haha*, *sad*, and *angry* for social media image analysis, which we found more logical and suitable for our study. The reason why the *like* button was excluded in many studies was its emotional ambiguity (Geboers et al., 2020; Al-Rawi, 2020), though some studies found its inclusion more suitable than exclusion (Freeman et al., 2019; Geboers et al., 2020; Smoliarova et al., 2018). Facebook introduced *love*, *haha*, *wow*, *sad*, and *angry* buttons in February 2016 (Dewey, 2016), and a care button in April 2020 amid the coronavirus disease (COVID-19) pandemic hoping it “helps people feel ‘a bit more connected’ with their friends and family during the pandemic” (Lyles, 2020). However, we excluded this button as well, because it was not available for most of the period of our study. Similar to the previous studies (e.g., Geboers et al., 2020), our study also analyzed five reactions but in a more comprehensive way. Attributing highly precise meaning to each reaction could pose the problem discussed earlier, and previous studies to some extent had a lack of proper and adequate explanations of the reactions (Smoliarova et al., 2018).

Considering these limitations, we deliberated how to attribute a broad range of emotional meanings to each reaction in this study. For that reason, we borrowed basic emotion theory (Ekman, 1992) and circumplex model of affect (Russell, 1980), and combined and synthesized them for producing more inclusive and suitable meanings (Dewey, 2016; Sarraipa et al., 2016). In that way, *love* indicates positivity, affection, empathy, support, kindness, liking, happiness, amusement, pride, confidence, satisfaction, contentment, and comfort; *sad* indicates empathy, grief, tragedy, support, misery, guilt, and depression; *haha* indicates happiness, laughter, fun, mockery, and rejection; *wow* indicates muted disdain, surprise, shock, skepticism, interest, confusion, and arousal; and *angry* express denial, aggressiveness, strong and overt disdain, dislike, disturbance, restlessness, and affliction (Al-Rawi, 2020; Dewey, 2016). In terms of valence, *love*, *haha*, and *wow* are usually considered positive, while *angry* and *sad* are considered negative. As the meanings of these reactions are context-based, their valence should be different in terms of rape news, meaning *negative* reactions should

express positivity (e.g., disliking rape, sympathy to the victims), and *positive* reactions should express negativity (e.g., mocking the victims, expressing happiness about a rape incident). For example, users' *angry* reaction to a piece of news that describes a rape incident should mean dislike of the act of rape; users' *haha* or *love* reaction to such news would mean the opposite. However, we also suspect that some individual cases might violate this assumption, which may complicate the interpretation and generalization of the results.

### Materials and Method

Facebook (86.73%) is the most popular social media platform in Bangladesh compared to other platforms such as Twitter (7.73%) and YouTube (3.58%) (StatCounter, 2021). A study found at least 41.4% of students in Bangladesh who use Facebook are highly addicted to this platform (Raisa, 2018). Also, its sociopolitical, economic, cultural, and other impacts in society are intense. For these reasons, we chose the platform as our data source. For data collection, we legally operated and utilized CrowdTangle (<http://crowdtangle.com>), a public insights tool owned and operated by Facebook. To answer our research question, we used a keyword search to find rape news shared on Facebook by Bangladesh news media's official Facebook pages. For this purpose, we used one Bangla keyword: "dhorshon" (rape). The CrowdTangle platform gives access to the interaction data of Facebook public pages, groups, and verified profiles (see Fraser, 2022 for more information about the data sharing policy of CrowdTangle); we chose only the public pages of news media. Collection and utilization of publicly available social media data for research purposes are free from any ethical prohibitions, so we did not need any ethical approval (Franzke et al., 2020; Mancosu & Vegetti, 2020).

With the predetermined keyword, we searched for the available news stories shared by the ten most popular Facebook pages of Bangladeshi news media: *Prothom Alo*, NTV, BBC News Bangla, Rtv, *Daily Jugantor*, *Daily Naya Diganta*, *bdnews24.com*, *independent24.live*, *Somoynews.tv*, and *Kaler Kantho* (see Table 1).



**Table 1**

*Descriptions of the Data*

Facebook page	Page link (fb.com/)	Media type	Total page likes*	Total news n (%)	Total interactions n (%)	M
BBC News Bangla	/BBCBengaliService	Online news portal	13.16	256 (2.5)	2,933,343 (9.29)	11,458.37
bdnews24.com	/bdnews24	Online news portal	9.06	154 (1.5)	219,541 (0.69)	1,425.59
Daily Jugantor	/DainikJugantor	Newspaper	6.70	2,262 (22.2)	4,588,515 (14.53)	2,028.52
Daily Naya Diganta	/nayadiganta	Newspaper	9.78	663 (6.5)	1,635,193 (5.18)	2,466.36
independent24.tv	/IndependentTVNews	Television channel	8.14	106 (1.0)	385,525 (1.22)	3,637.03
Kaler Kantho	/kalerkantho	Newspaper	7.36	1,955 (19.2)	1,920,128 (6.08)	982.16
NTV	/ntvdigital	Television channel	13.16	1,160 (11.4)	5,879,613 (18.61)	5,068.63
Prothom Alo	/DailyProthomAlo	Newspaper	15.30	685 (6.7)	6,429,732 (20.35)	9,386.47
Rtv	/rtvonline	Television channel	12.01	1,517 (14.9)	2,094,283 (6.63)	1,380.54
Somoynews.tv	/somoynews.tv	Television channel	7.48	1,433 (14.1)	5,502,996 (17.42)	3,840.19
Total			102.15	10,191 (100)	31,588,869 (100)	3,099.68

\* The data were collected on 14 April 2021 from Socialbakers. Values are in the millions.

The popularity of these pages was determined based on their numbers of followers according to Socialbakers (<http://socialbakers.com>), a social media marketing company. Of the selected pages, four were newspapers, four were television channels, and two were online news portals. In these pages, we searched only the links because the media's Facebook pages share their news as links (Baresch et al., 2011). While searching, we set the language to "Bangla" and the time range to "2 April 2011 to 1 April 2021", a 10-year span. However, rape news was first shared on Facebook on 29 October 2013, approximately 2.5 years after the beginning date of our data collection. The search yielded 10,191 news with 31.59 million interactions ( $M = 3099.68$ ). *Daily Jugantor* had the highest number of news items ( $n = 2,262$ ; 22.2%), followed by *Kaler Kantho* ( $n = 1,955$ ; 19.2%) and Rtv ( $n = 1,517$ ; 14.9%). *Prothom Alo* had the highest percentage of interactions (20.35%), followed by NTV (18.61%), and Somoynews.tv (17.42%). However, BBC News Bangla had the highest average interaction per news ( $M = 11,458.37$ ), followed by *Prothom Alo* ( $M = 9,386.47$ ) and NTV ( $M = 5,068.63$ ). In this study, we analyzed five major reactions: *love*, *haha*, *wow*, *sad*, and *angry*. But before February 2016, Facebook had only one reaction button, i.e., the *like* button. For that reason, we excluded the pre-2016 news. After filtering, our final dataset included 9,429 news articles about rape, with 3.50 million reactions for the five buttons (see Table 2). Figure 1 visualizes the aggregate interactions along with post counts. With the number of shared articles about rape, users' engagement also fluctuated and increased throughout the time. However, their upward tendencies were not equal, which means, as the trend lines suggest, post counts were increasing more likely than interactions.

**Table 2**

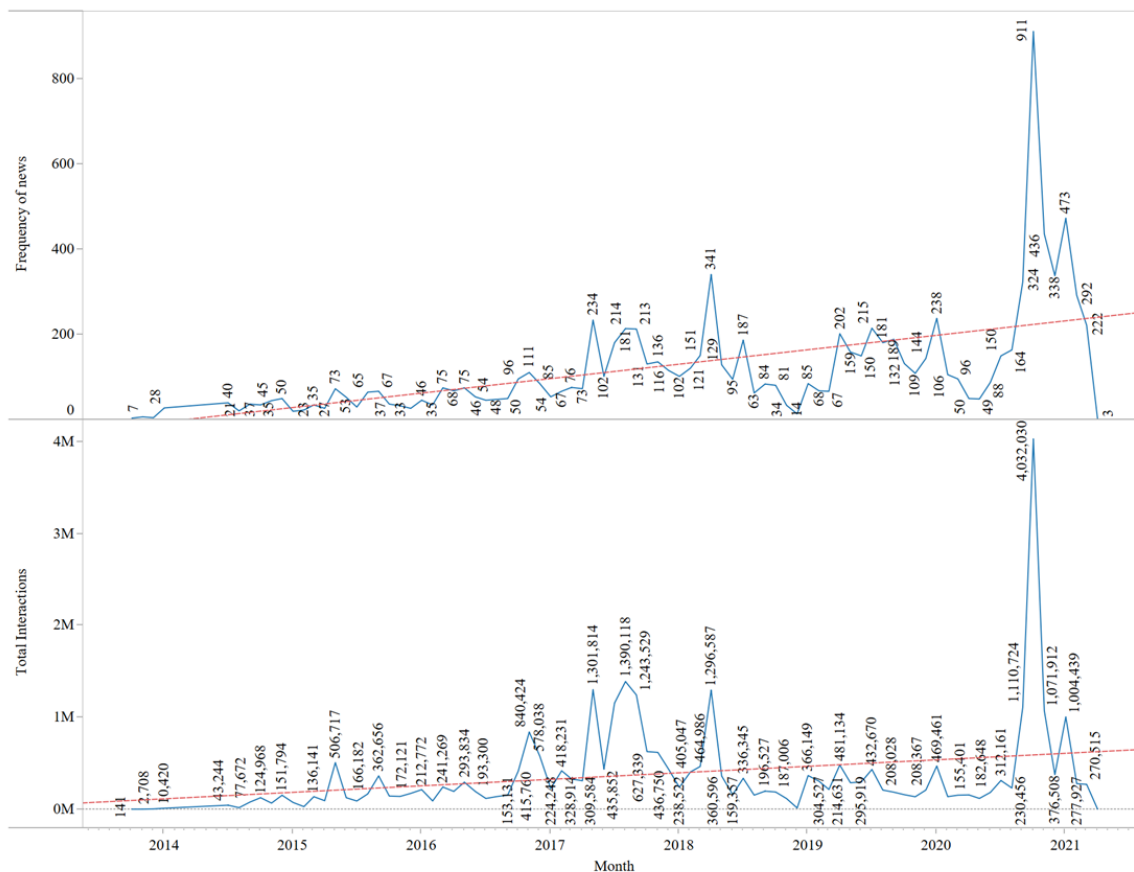
*Descriptions and Correlations of the Five Major Reactions (N<sub>reaction</sub> = 3,502,761).*

	Total, n (%)	M	SD	love	wow	haha	sad	angry
love	273,780 (7.82)	26.86	427.09	1				
wow	63,679 (1.82)	6.25	28.25	.464**	1			
haha	893,931 (25.52)	87.72	1,237.63	.037**	.506**	1		
sad	757,359 (21.62)	74.32	287.70	-.010	.182**	.052**	1	
angry	1,514,012 (43.22)	148.56	597.87	-.065**	.200**	.109**	.658**	1

\*\* Correlation is significant at the 0.01 level (2-tailed).

**Figure 1**

*Frequency and Total Interactions to Bangladeshi Rape News 2016-2021*



We used a combination of quantitative methods to answer the research question. With descriptive statistics (i.e., frequency and percentage analysis), we explained the dominant and secondary expressions of the users. With Pearson correlation coefficient analysis, we described which reactions are correlated and how users' reactions change over time. Trend analysis is defined as the "futurists look at

trends of the past to predict the future” (Allen, 2017, p. 169). This statistical method is common in social sciences and humanities (Hess et al., 2001). For example, Sakaki et al. (2011) analyzed tweets about the Great Eastern Japan Earthquake following a trend analysis to understand users’ actions and reactions during and after an emergency. In our case, we measured the monthly aggregate counts for each reaction from 2016 to 2021 following a linear trend analysis and tried to identify patterns within the lines. The statistical analyses and visualizations for this study were conducted and prepared using IBM SPSS Statistics 25 and Tableau 2020.4. they explain their cumulative changes. We also applied trend analysis to observe how

## Results and Discussion

This study analyzed 9,429 pieces of news about rape shared on Facebook from 2016 to 2021 to understand users’ emotional reactions to rape. Following a combination of quantitative methods, we analyzed five major Facebook reactions to rape news.

The results show that *angry* was the users’ most frequent reaction (43.22%) to rape news, followed by *haha* (25.52%) and *sad* (21.62%) (Table 2). It suggests that social media users have a considerable amount of anti-rape sentiment. In contrast, a large share of *haha* reaction also suggests their happiness, mockery, or denial, which suggest their supportive attitude toward rape culture. This finding is somewhat consistent with the previous findings that emerged from textual analysis of users’ comments (Orth et al., 2021; Zaleski et al., 2016). A significant percent of sad reactions indicates users’ empathetic attitude toward victims. However, *angry* ( $SD = 597.87$ ) and *sad* ( $SD = 287.70$ ) reactions seem more consistent than *haha* ( $SD = 1,237.63$ ), meaning *haha* was more unequally distributed. On the other hand, *wow* was the least frequent expression (1.82%), followed by *love* (7.82%), which suggests that rape is not much of a shocking phenomenon. One reason for this might be because rape incidents are commonplace in Bangladesh. From 2001 to 2018, 13,638 women were raped; 1,467 of them were killed (Odhikar, 2018). The situation was exacerbated in subsequent years. For example, at least 975 women were raped and 40 were killed from January to September 2020, which triggered protests afterward and led to the death penalty for raping (Ellis-Petersen, 2020). Like *haha*, *love* was also relatively more unequally

distributed ( $SD = 26.86$ ). It again suggests that social media users' positive and empathetic reactions to rape seem more consistent than negative and anti-rape sentiment. This inference is somewhat contradictory to the previous findings received from textual analysis, which implied that users show a negative attitude toward rape victims and they are supportive of rape culture (Orth et al., 2021; Wellman et al., 2017; Zaleski et al., 2016).

In the emotional polarity, *love* was more correlated to *wow* ( $r = .464, p < .01$ ), while *angry* was more correlated to *sad* ( $r = .658, p < .01$ ) (Table 2). Among other correlations, *wow* was relatively more correlated to *haha* ( $r = .506, p < .01$ ); of *sad* and *angry*, *haha* was more correlated to *angry* ( $r = .109, p < .01$ ). There was no correlation between *love* and *sad*, and a negative correlation between *love* and *angry* ( $r = -.065, p < 0.01$ ). These results suggest that correlations between *sad* and *angry*, *wow* and *haha*, and *love* and *wow* were strong, while other correlations are either weak, negligible, or nonexistent (Akoglu, 2018).

Among the three significant correlations, the correlations between the two negative reactions, *angry* and *sad*, were the strongest, meaning users are more likely to react both *angry* and *sad* to rape news at the same time. These results suggest that both *angry* and *sad* reactions are consistent in most of the rape news: if one increases, the other will increase too. It is true for the *wow* and *haha* reaction as well. It further suggests that the two groups of reactions maintain two different valences in rape news: positive and negative, like the previous studies suggested (Geboers et al., 2020; Giuntini et al., 2019; Tian et al., 2017). While we interpret this result for rape news, *angry* and *sad* reactions express the disliking of the rape incidents and sympathy to the victims, which is a positive and expected expression. On the other hand, *love*, *wow*, and *haha* are the expressions of mockery, happiness, and enjoyment mostly at the rape incidents and toward the victims. The positive correlations between *wow* and *haha* and *love* and *wow* also indicate their proximity. These results are consistent with the study of Geboers et al. (2020) in which they explored a strong correlation between *angry* and *sad* reactions ( $r = .738, p < .01$ ), *love* and *haha* ( $r = .444, p < 0.01$ ), and *love* and *wow* ( $r = .419, p < 0.01$ ) based on the analysis of users' reactions to Syrian war content on social media. Again, like our findings, Geboers et al. (2020) found either weak, negligible, or negative correlations between positive and negative reactions. These findings suggest

that when it comes to the news regarding tragedy or socially-morally unacceptable events, such as war and rape, reactions maintain the opposite valences as described earlier (i.e., *angry* and *sad* are positive, while *love*, *wow*, and *haha* are negative), and maintain significant correlations among themselves inside their valences.

There might be some confusion in determining the valence of *wow* since it does not apparently express any valence. If we look at Table 2, the correlation of *wow* to *haha* was strong, and to *angry* ( $r = .200, p < .01$ ) and *sad* ( $r = .182, p < .01$ ) were negligible. It suggests that *wow* is more correlated to positive reactions than negative reactions. Therefore, in terms of rape news, *wow* might not be neutral and could express a slight acceptance of rape culture, which is similar to the previous studies related to similar topics (Geboers et al., 2020).

**Figure 2**

*Distributions of the Five Facebook Reactions to Rape News 2016-2021*

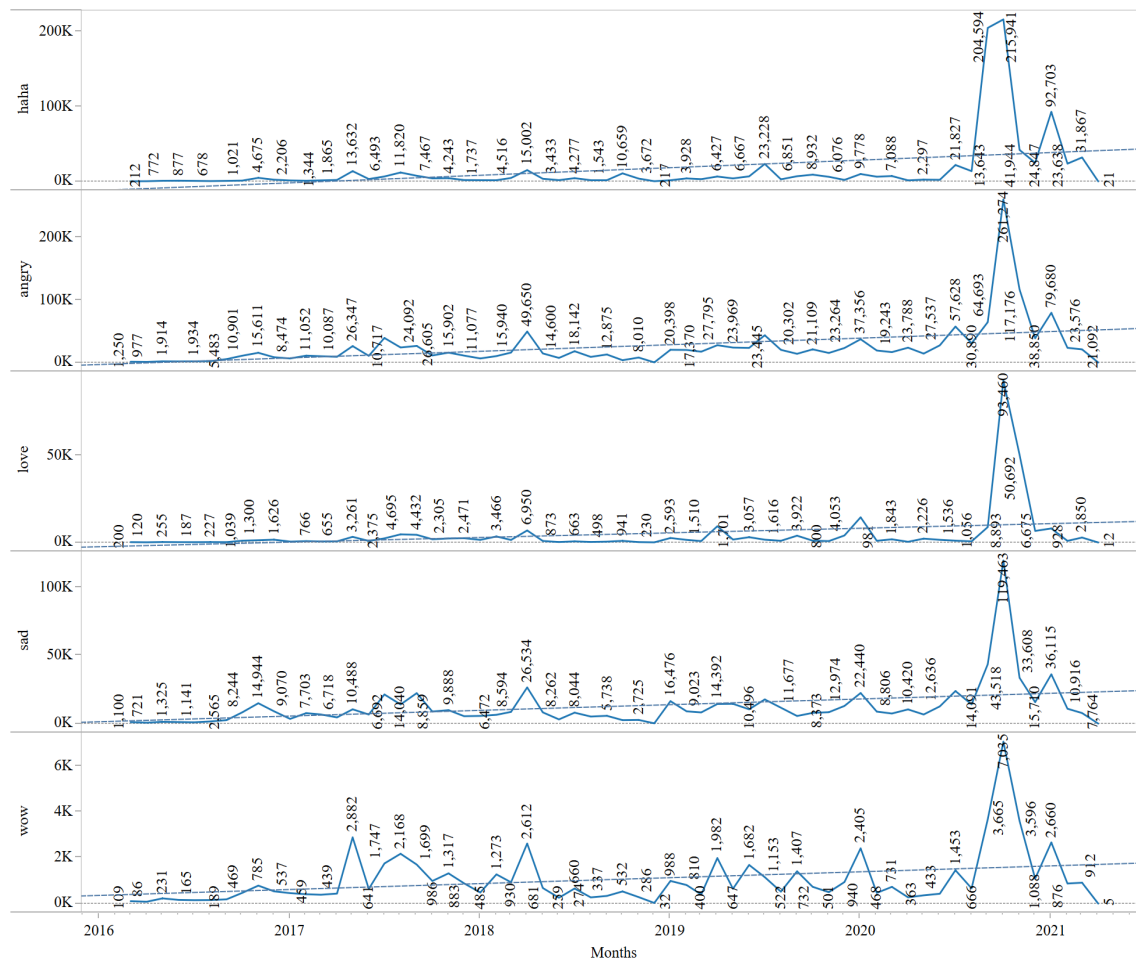


Figure 2 shows how users' reactions change over the period. Until September 2020, no surge in *haha* can be observed. However, the *haha* reaction increased in October and November 2020. The number decreased in the subsequent months. An almost similar pattern can be observed for the *love* reaction as well. *Angry* and *sad* experienced some frequent but minor fluctuations throughout the time. On the other hand, unlike other reactions, the *wow* reaction was relatively more consistent throughout the time with a few remarkable surges in June and August 2017, April to July 2019, December 2019 to January 2020, and September 2020 onward. These results suggest that users have been negatively reactive to rape news throughout the time, which might indicate their disapproval of rape and instances of empathy to the victims.

### **Strengths and Limitations**

In some specific ways, this study and its results are significant. First, to the best of our knowledge, this is the first study in which users' reactions to rape have been analyzed based on Facebook reactions. While many previous studies have examined Facebook reactions (Brunell et al., 2019; Freeman et al., 2019; Jost et al., 2020; Molina et al., 2020; Smoliarova et al., 2018) and reactions to rape news (Check & Malamuth, 1983; Ikizer et al., 2019; Navarro & Coromina, 2020; Orth et al., 2021; Zaleski et al., 2016) separately, the present study has bridged these two topics. Also, the communicative use of Facebook reaction buttons is highly contextual according to previous studies, and our study has tried to introduce users' emotional valence and expressivity toward rape. In that regard, this study may have theoretical contributions to understanding emoji communication in the studies of gender-based violence. Second, the results offer some novel insights regarding social media users' emotional attitudes toward rape: how they view rape, how their views change over time, and if it has any consistency. Rape culture is prevalent in societies around the world, including

in Bangladesh, and most of the previous studies demonstrated users' psychopathic and unbecoming attitudes toward rape and rape victims (Orth et al., 2021; Wellman et al., 2017; Zaleski et al., 2016). In contrast to the previous findings, the results of this study suggest that users' reactions to rape have been empathetic in the past, or, put another way, users were and are more likely to express empathy using the reaction buttons. Third, rape culture is a worrisome issue in Bangladesh (Mrenmoi, 2021), social media penetration in the country is much higher in recent years (StatCounter, 2020), and social media can play an impactful role in the rape issue. Therefore, this study would inspire more scholars to focus on this area, offering some methodological insights and guidance; would benefit the social and cyber psychologists and psychology enthusiasts to better understand social media users' reactions to rape; would provide social workers and policymakers some insights to take proper measures to reduce the extent of rape culture.

This study has two major limitations as well. First, it analyzed only the reaction emojis to rape news, not the written expressions of the users in the form of comments. If a textual analysis of the comments were included, the results could have been more in-depth. Further, as mentioned earlier, the meaning of a reaction can vary from context to context and issue to issue due to its fluidity and subjective nature, which we found problematic while interpreting the results. Therefore, the way reaction buttons have been interpreted in this research may not be completely accurate in some cases. Also, as this study only focused on users' reactions, it does not provide much in-depth insights regarding the news contents (e.g., which aspects of rape a news story contains). Second, this study only utilized news from Bangladeshi media. If cross-cultural news items from other countries could be incorporated, the results would be more comprehensive and generalizable. Therefore, we caution against



overgeneralizing these results. Also, we would recommend future researchers consider these limitations while conducting research in this area.

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