

Original Research

Can Social Media Be a Place for Women? Effects of Aggressive Comments on User Engagement in Collective Action for Gender Equality in China

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ABSTRACT

Although social media have been the major platform for discussing gender issues and feminist activities in China, female users have often been subjected to incivility and aggressiveness as a backlash against feminist activities. This study examined the effects of being exposed to aggressive online comments on female online users' gender identity salience, emotional reactions, and collective action, based on the social identity model of deindividuation effect (SIDE) model and gender identity. An online experiment was conducted using a 2 (level of aggressiveness: aggressive vs. non-aggressive) x 3 (target: against female vs. against male vs. against both) between-subjects factorial design. Although our analysis did not show the expected pattern that exposure to incivility against female online users' gender group in online comments would make their gender identity salient, female online users still experienced negative emotions. Our analysis also showed only a marginal effect of being exposed to aggressive comments on engagement in corrective actions, but it revealed that female online users support corrective actions via social media page moderators and the government after being exposed to aggressive comments against their gender group. There was no significant effect on online and offline activism.

KEYWORDS

aggressiveness, China, comments, feminism, gender, incivility, online, social media, corrective action, engagement

Social media have been the major platform for discussing gender issues and feminist activities despite strict online censorship in China (Yang & Zhou, 2023). Like other countries, however, social media have been used for backlash and the stigmatization of feminist activities (Yang, 2014). Despite widespread societal concerns over gender issues and aggressiveness in online posts and comments in China, little is known about how exposure to aggressive comments on

Chinese online users impacts their reactions and behaviors.

According to the social identity model of deindividuation effect (SIDE model), with a high level of anonymity in online and social media environments, online users have a lower level of self-awareness but an increasing level of identification with their social groups (Spears, 2017). Especially when individuals are exposed to signals that emphasize their belonging to a particular social group (Wang & Dovidio, 2017), they view themselves as a group member and behave following the norms of the social group (e.g., Chung, 2019; Rösner & Krämer, 2016; Seiter & Brophy, 2022). Previous studies have shown that being exposed to aggressive comments or posts targeting individuals' social groups online would lead them to experience group-based emotions and behave in ways that advocate and defend their in-groups (Lee, 2021; Postmes & Spears, 2002). The social identity model of collective action (SIMCA) also proposed that identification with individuals' social groups would affect their engagement in collective action (Brügger et al., 2020; Eisner et al., 2022; Lee et al., 2022; Simon et al., 1998; Uluğ et al., 2020; Van Zomeren et al., 2008).

As uncivil and aggressive posts and comments have frequently appeared in online and social media environments, scholars have discussed the effects of being exposed to aggressive online comments on user perceptions and behaviors, including negative emotions, engagement in corrective actions, and participation in certain forms of activism. However, limited research exists regarding the effects of being exposed to aggressive online comments targeting women on female online users' emotional and behavioral reactions toward gender issues based on the SIDE model. Additionally, there has been no research examining differences in the effects of aggressive content targeting different social groups in an intergroup situation on users' emotions and behaviors. To fill this research gap, the current

study examines how being exposed to aggressive comments against a specific gender group affects female users' gender identity, emotional reactions, and collective action (e.g., corrective actions, including flagging hate speech or counterarguing in user comments, and online and offline activism related to gender equality issues), based on previous literature on gender identity and the SIDE and SIMCA model. By conducting an online experiment with female online users in China, the results shed new light on how Chinese online users perceive and react to aggressive online comments against women. Given that women are more easily targeted by online harassment and hate speech than men (Meyer & Cukier, 2006), this study can help social media platforms and governmental organizations better support female users in dealing with the negative impact of aggressive online comments, especially in the context of China.

In this article, we review feminist activities in China, previous literature on social (and gender) identity, and the SIDE model related to its effect on gender identity activation, as well as the roles in group-based emotional reactions and collective action. Then, drawing from the SIDE framework, we report the results of an online experiment on Chinese female users' emotional and behavioral reactions after being exposed to aggressive comments targeting different gender groups.

Feminism Activities in China

With the emergence and popularity of social media, female online users (especially the younger generation) have opportunities to exchange information with other users, express their thoughts, share their perspectives and personal experiences of gender discrimination, and challenge stereotypes against females. For feminist activities in China, social media have become an important channel for discussing women's rights, drawing attention to feminist activities, and avoiding the strict censorship of feminism

from the government. Feminists in China have also engaged in collective action to criticize media content that reproduces stereotypes and prejudices against females (Mao, 2020; Wang & Driscoll, 2019; Wu & Dong, 2019). Recently, as in Western countries, #MeToo movements were popular on Chinese social media such as WeChat and Weibo. Female online users and feminists have actively engaged in this grassroots movement (Zeng, 2020). After the #MeToo movement, women have had more chances and are more willing to speak up and defend their rights, thereby raising awareness of gender issues in China among the public (Lin & Yang, 2019). Afterwards, various movements against gender discrimination have become popular and widely shared among social media users (e.g., the Naked Chest against Domestic Violence movement and the housewives' empowerment movement (Hou, 2020; Ling, 2022)).

However, feminist activities have often been regarded as a threat to the stability of the social system and national security by government authorities in China (Yang, 2014). As a result, censorship of feminism has been intensified. When social media posts include radical perspectives on gender issues, they have been removed without notice, and sometimes the accounts have become suspended (Mao, 2020). In addition, there has been a backlash against feminist activities in the form of attacks on the principles of feminism and gender equality on social media and female online users being exposed to harassment (Turley & Fisher, 2018).

Specifically, social media have enabled the circulation of sexist and misogynistic narratives and humiliation against women, thus reproducing the power inequalities in society (Boynton, 2012). Female users have been frequently harassed by other users when sharing their viewpoints and experiences related to sexism and injustice online (Turley & Fisher, 2018). Meyer and Cukier (2006) have found that using female usernames significantly increased the chance of

getting messages that include threats or sexual harassment, meaning that female online users tend to face online harassment and hatred more than male users.

In the comment section, women have often been subjected to incivility and aggressiveness. For instance, female politicians are targeted more frequently for uncivil online comments than male politicians (Rheault et al., 2019). Moreover, female journalists have reported that they often receive sexist comments when interacting with their audiences online (Chen et al., 2020). As female users are more likely than men to be harassed online and attacked due to their gender, Van Duyn et al. (2021) employed a survey of commenters and comment readers. They found that women are less likely than men to comment on news sites. Proust and Saldaña (2023) discovered that male users tend to leave more uncivil comments than female users. Thus, there exists a gender gap in the comment section. However, there has not been much research on how female users perceive and react to uncivil comments. Thus, we examine how the current situation affects the identity of gender groups and other consequences among female online users. The next section discusses gender identity based on the social identity theoretical framework.

Gender Identity

Social identity theory has been developed to examine intergroup relations (Hogg et al., 2004). According to Tajfel (1972), social identity is defined as an individual's knowledge that he or she is a member of certain social groups, along with the value and emotional significance of that membership. When individuals embrace their identity as members of a social group, they categorize themselves as a member of the group rather than as a unique individual (Turner, 1999). Depending on the importance of a particular group membership in one's self-concept, the strength of social identity can be different.

However, with situational signals, one's group identity would become more subjectively important (Haslam et al., 1999). Specifically, self-categorization as a group member can be activated when one is exposed to signals that emphasize his or her belonging to a particular social group (Wang & Dovidio, 2017). When social identity becomes activated or salient, people tend to describe themselves based on the attributes of their identity group, highlight intragroup similarities, and emphasize differences from other group members (Turner et al., 1987). In addition, a salient social identity motivates individuals to uphold and improve the standing of one's group. As a result, members are more likely to become involved in collective action against events that threaten their group's reputation (Tajfel & Turner, 1979).

Among different types of social identities, this study focuses on gender identity. Different from biological sex, gender is the cultural definition of conduct, which has its own culturally constructed group norms and stereotypes as females or males (Lerner, 1986). When individuals have strong gender identities, they understand themselves as being related to the culturally ascribed feminine and masculine meanings attached to their gender group and act in accordance with these gendered aspects of themselves (Wood & Eagly, 2015). In this context, gender identity as a group identity is a self-conceptualization derived from acknowledging oneself as a member of one's gender group and all meanings and values associated with that gender group (Maldonado et al., 2003).

Similar to other social identities, when gender identity becomes activated, individuals' judgments, attitudes, and behaviors all tend to align closely with the stereotypes of their gender group (White & Gardner, 2009). Given that conflict and inequality situations might increase the salience of social identity (Abrams & Hogg, 2010) due to the relative minority position of females in society, females tend to identify more

strongly with their gender group. This salient gender identity might lead them to take part in coordinated social action to overcome their group-based disadvantages, including feminist causes (Van Zomeren et al., 2008).

With the emergence and popularity of online media, scholars have examined how individuals' identification with social groups might change, and how it could affect their participation in collective action to advocate for their social groups in online and social media environments (e.g., Dai & Shi, 2022; Mikal et al., 2016; Triwibowo, 2018). To understand how Chinese online users' collective action changes based on their identification with gender groups, this study employs the SIDE model (Reicher et al., 1995; Spears & Lea, 1994; Spears & Postmes, 2015).

The Social Identity Model of Deindividuation Effects (SIDE) Model

The SIDE model proposes that, in (particularly anonymous) computer-mediated communication environments, individuals have a tendency to identify themselves as a group member, while generalizing others as representations of a specific social group. As personal details are unidentifiable in online environments, increasing levels of anonymity would minimize individuals' self-awareness and increase their awareness of the salient norms of a social group. In this process, individuals not only have a high level of identification with their social groups but also see others as social group members instead of unique individuals due to the blurring of individual differences (Spears, 2017). By going through this process, individuals have a strong shared social identity in online and social media environments, and view themselves as a group member, which refers to the "depersonalization" process in the SIDE model (Mikal et al., 2016; Spears, 2017). Previous studies have consistently shown positive relationships between anonymity and group identification (Postmes et al., 2001).

The SIDE model also explains that online users show a tendency to rely heavily on a few cues that are available, considering that there are not many social cues they can use in an online environment.

Concerning the strategic dimensions of the SIDE model, scholars have argued that online users would consciously manage and strategically choose to express or conceal their identity (i.e., identity performance), depending on context and power dynamics (Klein et al., 2007; Spears et al., 2002, 2011). For example, when the discussion topic was relevant to males, it was dominated by males, and vice versa (Postmes & Spears, 2002). In addition, women showed a tendency to hide their gender identity when the discussion topic was related to male expertise (Flanagin et al., 2002; Spears et al., 2011).

Thus far, scholars have applied the SIDE model to understand how online users identify themselves with social groups and behave in certain ways based on the norms of social groups (e.g., Chung, 2019; Rösner & Krämer, 2016; Seiter & Brophy, 2022). For example, Seiter and Brophy (2022) conducted a content analysis of posts uploaded on Reddit, YouTube, and Facebook and found that Reddit users showed less aggressive and more supportive communicative behaviors. They explained that Reddit users identify themselves as representatives of the platform, with a higher level of anonymity than other platforms; thus, they are more likely to follow the norms of the platform. Similarly, based on an experiment by Rösner and Krämer (2016), they found that online users showed more aggressive wording in the comment section when other users' comments were aggressive. The anonymity did not have a direct effect on aggressiveness here; rather, they found that users showed a tendency to conform to aggressive social norms of commenting in the anonymous condition. Chung (2019) also revealed that when comment readers identified themselves with those who posted comments, the comment readers showed a strong tendency

to adjust their attitudes and perceptions following those of the commenters. Thus, these three studies show that online users would identify themselves as users when using the same platform and would follow other users' behaviors.

Additionally, several studies have used the SIDE model to explain how comments or posts targeting individuals' in-groups would affect their group identification as well as their emotional and behavioral reactions (e.g., Lee, 2021; Rösner & Krämer, 2016). Individuals' identification with their social groups, and their emotional and behavioral responses based on identification would be enhanced when conflict and inequality occur (Abrams & Hogg, 2010). For instance, Postmes and Spears (2002) showed that identification with one's gender group was stronger when a gender-related stereotype was provided, and when group members were depersonalized (i.e., anonymous). Lee (2021) conducted an experiment and found that exposure to hate messages on social media targeting White people triggers negative emotions among White participants. Interestingly, the effect was reduced when personal information regarding the source was provided.

Based on the social identity and SIDE models, people would identify themselves with their social groups in (especially anonymous) online environments. Particularly when people interact with their in- or out-group members, or with other situational signals (e.g., stereotype information or hate speech to their in-group), their group identity becomes activated. Given that female online users are oftentimes subjected to abuse in online comment sections due to incivility and aggressiveness against their gender group, gender identity might be activated in online and social media environments, especially when female users read or become exposed to aggressive comments against females. Thus, this study proposes the following hypothesis:

H1. When women are exposed to aggressive online comments against their gender group, their gender identity becomes salient.

The next section discusses the effect of being exposed to aggressive online comments on female users' emotional reactions and behaviors.

Effects of Being Exposed to Aggressive Online Comments on Emotional Reactions

Having negative emotional reactions, such as anger or fear, has been one of the most common reactions when encountering aggressiveness (Lee, 2021; Phillips & Smith, 2004). In the online environment, previous studies have found that being exposed to aggressive online comments tends to evoke negative emotions among social media users (e.g., Kim & Kim, 2019; Lee, 2021; Nadal et al., 2013).

Emotion has been regarded as crucial for understanding intergroup relations (Mackie & Smith, 2018). Previous studies have found that individuals' emotions in an intergroup situation would be related to a group with which they identify, and the intensity of identification with the group would be positively related to their group-based emotions (Kim & Kim, 2019; Lee, 2021; Mackie & Smith, 2018). For example, Kim and Kim (2019) conducted an online experiment and found that participants who were exposed to uncivil disagreeing comments reported higher levels of negative emotions, compared to those who were exposed to civil disagreeing comments. Lee (2021) also discovered that seeing hateful tweets directed at White people on Twitter caused unpleasant feelings such as anger and fear.

With respect to the gender group, when individuals faced aggressive behaviors against their gender group, they also showed negative emotional reactions (Nadal et al., 2013). Nadal et al. (2013) conducted focus group interview studies to examine how women reacted to gender

microaggressions; they found that women reported feelings of anger, guilt, humiliation, and discomfort.

Based on previous studies on emotional reactions in an intergroup situation, we can assume that when online female users see uncivil comments related to a gender issue, they may feel negative emotions. In addition, this study examines whether this pattern would be stronger when the incivility is targeted at their gender group. Although there is no research comparing the effect of targeting different groups in aggressive comments on individuals' emotional reactions and behaviors, previous studies have suggested that individuals' group identity is activated when their in-group is attacked and targeted (e.g., Lee, 2021). Thus, the following hypothesis and research question are proposed:

H2. When women are exposed to aggressive online comments, they show negative emotional reactions, compared to those who are not exposed to aggressive online comments.

RQ1. When women are exposed to aggressive online comments against their gender group, do they show negative emotional reactions more, compared to those who are exposed to aggressive comments against males?

Effects of Being Exposed to Aggressive Online Comments on Corrective and Collective Action

With the emergence of social media and the popularity of online feminist activism, gender issues have been actively discussed online. Users not only consume online content and discussion but also actively engage in discussion and different types of collective action (Majumdar et al., 2022). In this process, gender identity has been regarded as an important factor leading to online collective action. By extending the

SIDE model, Klein et al. (2007) proposed that social identity performance strengthens group identity and mobilizes group members to engage in supporting certain actions in the pursuit of group goals. Previous research using the SIDE model has already shown that individuals' group identity could affect their behaviors in supporting and defending their in-group (Mikal et al., 2014; Täuber & Van Zomeren, 2012).

As another theoretical framework, this study uses the Social Identity Model of Collective Action (SIMCA) to examine the relationship between social identity and collective action (Van Zomeren et al., 2008). Collective action, as a socio-psychological phenomenon, refers to any action performed by individuals who identify as group members for the goals of the group, including social change (Van Zomeren, 2016). SIMCA proposes that perceived injustice, perceived efficacy to make changes, and a sense of social identity would contribute to individuals' engagement in collective action (Van Zomeren et al., 2008). Previous studies have argued that identifying with a disadvantaged group would generate emotional reactions to perceived injustice (e.g., group-based anger), and thus would solidify their commitment to collective action (Adra et al., 2020; Chan, 2016; Hercus, 1999; Reicher, 2001; Smith et al., 2008; Thomas et al., 2012). More importantly, identifying with their social group or with those sharing the same opinion would strengthen their dedication to collective action (Brügger et al., 2020; Eisner et al., 2022; Lee et al., 2022; Simon et al., 1998; Uluğ et al., 2020). For example, Lee et al. (2022) conducted an online survey with Asian Americans; they found that Asian Americans' group identity increased their perceived injustice, efficacy, and situational motivation and was positively associated with their willingness to engage in online activism (via social media) in regard to antiracism, which also fostered offline activism. Uluğ et al. (2020) conducted a survey with protesters and also discovered that

protesters' identification with women's rights defenders affected their willingness to engage in collective action.

By examining actions that advocate and show support for one's in-group, this study focuses particularly on corrective action in the comments section and in online and offline activism. First, corrective action refers to people's attempts to correct the influence of what is presumed wrong in the public sphere when they see media as being biased and influential (Barnidge et al., 2020). Although no research has found that identification with a group would be related to their corrective actions, a few scholars have focused on how users put effort into stopping contagious behaviors by focusing on corrective actions taken by online users (Naab et al., 2021; Ziegele et al., 2020).

Specifically, Naab et al. (2021) found that being exposed to uncivil comments encouraged online users to engage in corrective actions (e.g., disagreeing in the reply comments, sharing a video that disagrees with the previous comment, etc.) and show support for restrictive actions by the authorities, such as censorship or regulation. Ziegele et al. (2020) examined factors that influenced online users' intention to engage in the social movement #ichbinhier as a collective corrective action against uncivil comments. They discovered that feelings of personal responsibility and perceived group efficacy were important factors for engagement in corrective action. Although they did not find the effect of a shared social identity as a member of the #ichbinhier movement, they explained that this might be due to the notion that identifying as a member of social activity might not be as strong as other group categories, such as race or gender. Still, the activation of a social identity would be likely to lead female online users to engage in collective action against threats to their social group (Hogg et al., 2004; Tajfel & Turner, 1979). Thus, when female online users were exposed to aggressive comments (especially those attacking their

gender group), they might engage in corrective actions by themselves and support actions by social media platforms or the government. Thus, we posit the following hypotheses and research questions:

H3. When women are exposed to aggressive online comments, their engagement in corrective actions is higher, compared to those who are not exposed to aggressive online comments.

RQ2. When women are exposed to aggressive online comments against their gender group, is their engagement in corrective actions higher, compared to those who are exposed to aggressive comments against males?

H4. When women are exposed to aggressive online comments, their support for corrective actions by (a) social media moderators and (b) the government is higher, compared to those who are not exposed to aggressive online comments.

RQ3. When women are exposed to aggressive online comments against their gender group, is their support for corrective actions by (a) social media moderators and (b) the government higher, compared to those who are exposed to aggressive comments against males?

As another behavioral reaction against aggressive online comments, this study examines online and offline activism. Online activism (i.e., collective action that relies on online platforms such as social media) and offline activism (i.e., attempts to resolve controversial problems through communication and collective action in physical locations) can be regarded as forms of collective action (Margetts et al., 2015). Examples of online activism include a range of activities including commenting, passing on the received information, “liking” information, joining an online group, and uploading materials,

which are typically done on social media. Due to the ease of sharing information and connecting with others, online and social media platforms enable individuals to galvanize the public (Bennett & Segerberg, 2011). Thus, engaging in online action would help create a sense of collective identity, solidarity, and belonging among participants (Ghobadi & Clegg, 2015). In contrast, offline activism behaviors, such as attending protests or signing a petition, require a higher level of commitment in terms of time and effort (Nekmat et al., 2015).

Prior research on SIMCA has suggested positive relationships between identification and online and offline collective action (Brügger et al., 2020; Eisner et al., 2022; Lee et al., 2022; Simon et al., 1998; Uluğ et al., 2020); yet, little research exists in terms of how exposure to aggressive comments targeting a specific group affects engagement in online and offline activism. However, being exposed to aggressive comments would enhance identification with individuals’ social groups, which would raise their willingness to engage in group-based collective action. Thus, we posit the following hypotheses and research questions:

H5. When women are exposed to aggressive online comments, their engagement in online activism behaviors is higher, compared to those who are not exposed to aggressive online comments.

RQ4. When women are exposed to aggressive online comments against their gender group, is their engagement in online activism higher, compared to those who are exposed to aggressive comments against males?

H6. When women are exposed to aggressive online comments, their engagement in offline activism behaviors is higher, compared to those who are not exposed to aggressive online comments.

RQ5. When women are exposed to aggressive

online comments against their gender group, is their engagement in offline activism higher, compared to those who are exposed to aggressive comments against males?

METHOD

An online experiment was conducted using a 2 (level of aggressiveness: aggressive vs. non-aggressive) X 3 (target: against female vs. against male vs. against both) between-subjects factorial design.

Participants

Students at a Sino-foreign cooperative university in China were invited via an online announcement on WeChat Moment (social media feed) to share their opinions about social media. They voluntarily participated in the online experiment through the link or QR code to access the survey in which our stimulus material was embedded. The data were collected from May 2 to May 16 in 2023. A total of 169 students who identified as female completed the survey. The mean age was 20.19 ($SD = 1.93$). All survey questionnaires were in English and Chinese. The present study was approved by the Institutional Review Board at the Singapore Institute of Technology.

Procedure and Stimulus Material

Depending on the experimental condition, participants were randomly assigned to view one of six fictitious Weibo web pages (See Figure 1).

The Weibo pages include one non-aggressive post from a hypothetical news organization about marriage in China, followed by five online comments from different Weibo users. The post from the hypothetical news organization delivered factual information about the decreasing number of people getting married

in China, which was adapted from social media posts published by news organizations. Regardless of their condition, participants read the same post from the news organization. Participants then read comments from different Weibo users presented in a social media post format. Depending on the condition to which they were assigned, they received different types of comments. All posts and comments were in Chinese, and the profile pictures and names of all user accounts were gender neutral.

Figure 1. *Example of Stimuli (Aggressive Comments against Women)*



For the manipulation of aggressiveness of comments, those assigned to the non-aggressive conditions were shown comments that did not include any aggressive words, whereas participants assigned to the aggressive conditions were shown comments with a more aggressive and uncivil style, which included words in capital letters to illustrate shouting, attacks toward specific gender groups, offensive language, and sarcasm. This manipulation is based on Rösner et al. (2016). Except for the level of aggressiveness, the non-aggressive and aggressive versions of the comments were equal regarding the contents. We conducted pilot studies twice with 65 students to make sure that each comment was regarded as non-aggressive or aggressive before designing the stimulus.

Regarding the manipulation of the target group mentioned in the online comments, those assigned to the “against women” conditions were shown comments that attacked the female gender group [a pair of three comments against men and two comments with no specific target group], while those assigned to the “against men” conditions were shown comments that attacked the male gender group [a pair of three comments against women and two comments with no specific target group]. Those assigned to “both” conditions received comments that attacked both male and female gender groups [a pair of two comments against women and two comments against men and one comment with no specific target group]. After viewing the post and comments, participants completed the questionnaire measuring their gender identity perceptions and engagement behaviors with regard to the comments.

Measures

Unless noted otherwise, all variables were measured on seven-point scales ranging from ‘1 = strongly disagree’ to ‘7 = strongly agree’.

Identification with a Gender Group

We used four items adapted from Doosje et al. (1995) and Van Breen et al. (2017) to measure participants’ identification with their gender group, including “I identify with my gender group” and “Being a member of my gender group is an important part of my self-image.” These four items were averaged to create a composite scale (Cronbach’s $\alpha = .87$). The average score is 5.87 ($SD = 1.04$).

Emotional Reactions

Based on Gross (2008) and Kim and Kim (2019), this study measured participants’ negative emotions after reading the comments. First, the participants were asked to what degree (from 1 = not at all to 7 = very much) the comments they had read made them feel irritated, angry, and anxious (Cronbach’s $\alpha = .84$). The average score is 4.60 ($SD = 1.51$).

Willingness to Engage in Corrective Actions

Adapted from Naab et al. (2021) and Ziegele et al. (2020), willingness to engage in corrective actions was measured by eight items. On a scale from 1 = *very unlikely* to 7 = *very likely*, participants indicated how likely they were to carry out the following actions: respond with supportive comments, rebuke the author’s comment in a private message, rebuke the author’s comment in a public reply, write balanced comments on the post (e.g., providing different viewpoints, etc.), report the comment with a flagging button, report the comment to law enforcement or a government agency, make other users aware of the comment, and report the comment in a private message to the social media page moderators ($\alpha = .77$, $M = 3.86$, $SD = 1.17$).

Support for Actions by Social Media Moderators and the Government

Based on Naab et al. (2021), this study measured participants’ support to engage in further actions via social media page moderators and the

government. On a scale from 1 = not at all to 7 = fully support, participants indicated their support for the following actions in case they found similar comments on social media. Their support for actions via social media page moderators was measured with six items, such as Moderators should “delete this comment,” “block the account of the author’s comment,” and “check future comments of this author prior to publication” ($\alpha = .91$, $M = 4.69$, $SD = 1.68$). Regarding support for actions by the government, five items were used: The government agency should “prosecute the author of the comment,” “force social media moderators to block the account of the author of the comment,” and “force social media moderators to delete the comment” ($\alpha = .95$, $M = 4.28$, $SD = 1.77$).

Online and Offline Activism

Participants’ willingness to engage in online and offline activism was assessed on the items adapted from Lee et al. (2022), Nekmat et al. (2015), and Van Zomeren et al. (2004). We measured online activism with seven items. Participants indicated their willingness to do the following actions on social media regarding the issue of gender equality: post personal comments about the issue, pass on the received information to others, “like” messages that support women in China, join an online group page that advocates for women in China, “like” or follow an online group page that advocates for women in China, upload other materials such as photos or videos that support women in China, and provide links to other information pertaining to the issue. These items formed a reliable scale ($\alpha = .95$, $M = 4.28$, $SD = 1.77$). In addition, participants indicated their willingness to engage in offline activism behaviors related to gender equality issues: participate in raising a collective voice to stop this issue, do something together with fellow friends and family to stop this issue, sign a petition to improve the current situation, and participate in a project to improve conditions for women in China ($\alpha = .88$,

$M = 5.26$, $SD = 1.28$).

Manipulation Check

After reading the post and comments, participants were asked to indicate how civil they had perceived the comments displayed in the post (1 = *not at all civil* to 7 = *very civil*).

The manipulation succeeded. Those in the non-aggressive conditions viewed the comments as significantly more civil than those in the aggressive conditions (See Table 1).

RESULTS

A two-way analysis of variance (ANOVA) with both aggressiveness and gender group mentioned in the online comments as between-subjects factors was used to test the hypotheses and research questions.

H1 predicted that the effect of being exposed to aggressive online comments against females would make their gender identity more salient than those against males. The ANOVA model did not find a significant main effect of evidence on gender identity, $F(1, 163) = 0.25$, ns. Moreover, the gender group targeted in the comment did not have any impact on gender identity, $F(1, 163) = 1.20$, ns., and there was no significant interaction effect, $F(2, 1643) = 0.05$, ns. Thus, H1 was not consistent with the data.

H2 predicted that participants would experience emotional reactions after being exposed to aggressive comments. RQ1 proposed that the effect of being exposed to aggressive online comments against females would make them have strong emotional reactions, compared to those who were exposed to comments against males. The ANOVA results showed that being exposed to aggressive comments made participants feel negative emotional reactions, $F(1, 163) = 31.04$, $p < .001$, $\eta_p^2 = .16$ ($M_{\text{aggressive}} = 5.11$, $SD_{\text{aggressive}} = 1.35$; $M_{\text{non-aggressive}} = 3.97$, $SD_{\text{non-aggressive}} = 1.47$). Thus, H2 was consistent with the data. In addition,

Table 1. Manipulation Check Results

	Aggressive	Non-aggressive	<i>t</i> (<i>df</i>)
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
Against women	1.32 (0.95)	5.14 (1.59)	-9.97 (28.84)***
Against men	2.69 (1.58)	5.04 (1.78)	-5.23 (54)***
Against both	1.75 (1.04)	4.97 (1.67)	-8.73 (49.02)***

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 2. Means and Standard Deviations from 2×3 ANOVAs

		Gender identity	Emotion	Corrective actions	Support for moderator	Support for government	Online activism	Offline activism
Aggressive comments	Against women ($n = 34$)	5.95 (.90)	5.63 (0.97)	4.22 (1.08)	5.67 (1.57)	5.15 (1.73)	5.56 (1.28)	5.68 (1.14)
	Against men ($n = 32$)	5.77 (1.25)	4.16 (1.43)	3.71 (1.15)	3.84 (1.86)	3.50 (1.98)	5.11 (1.21)	5.04 (1.51)
	Against both ($n = 28$)	6.06 (0.86)	5.57 (1.04)	4.15 (0.89)	5.45 (1.12)	4.92 (1.05)	5.51 (1.26)	5.48 (1.16)
Non-aggressive comments	Against women ($n = 21$)	5.92 (1.15)	4.27 (1.54)	3.93 (1.43)	4.38 (1.52)	4.03 (1.46)	5.44 (1.07)	5.42 (1.10)
	Against men ($n = 24$)	5.71 (1.32)	3.68 (1.71)	3.54 (1.23)	4.40 (1.67)	4.18 (1.63)	4.92 (1.42)	4.79 (1.44)
	Against both ($n = 30$)	5.90 (0.58)	3.99 (1.18)	3.56 (1.17)	4.21 (1.45)	3.75 (1.63)	5.20 (0.81)	5.27 (1.16)

Note. The numbers present the mean scores for each condition; standard deviations are in parentheses.

there was a main effect of which gender group was targeted in the online comments, $F(2, 163) = 9.67, p < .001, \eta_p^2 = .11$. The Bonferroni post-hoc analysis revealed that when women were exposed to online comments against women ($M = 5.11, SD = 1.38$) and both gender groups ($M = 4.76, SD = 1.36$), participants showed stronger emotional reactions, compared to those who were exposed to online comments against men ($M = 3.95, SD = 1.56$). The interaction between the aggressiveness of the comments and the gender group targeted in the comments was marginally significant, $F(2, 163) = 2.77, p = .066, \eta_p^2 = .03$.

H3 proposed participants would be more willing to engage in corrective actions after being exposed to aggressive comments. RQ2 examined

the effect of being exposed to aggressive online comments against females on their willingness to engage in corrective actions. The results showed that there was only a marginally significant effect of the aggressiveness of online comments, $F(1, 163) = 3.82, p = .052, \eta_p^2 = .02$ ($M_{\text{aggressive}} = 4.03, SD_{\text{aggressive}} = 1.07$; $M_{\text{non-aggressive}} = 3.66, SD_{\text{non-aggressive}} = 1.26$). There was no main or interaction effect of the gender group targeted in the online comments.

H4 predicted that participants would support corrective actions via (a) social media page moderators and (b) the government after being exposed to aggressive online comments. RQ3 examined the interaction effect with the gender group targeted in the online comments. The

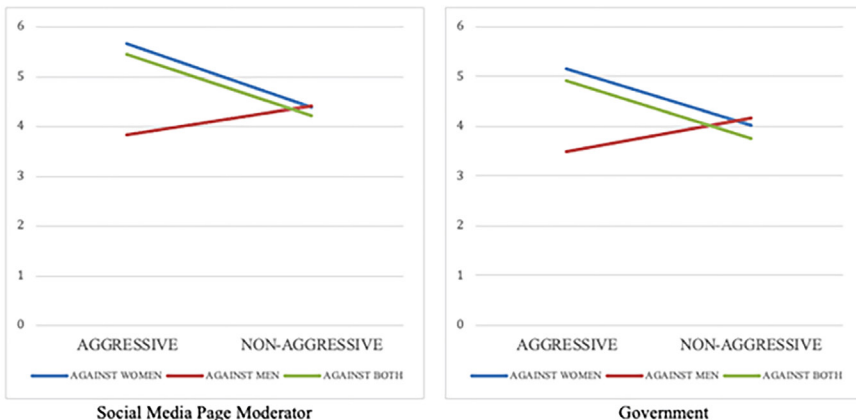
ANOVA results showed that the participants who read the aggressive comments were more likely to support corrective actions via social media page moderators than those who did not read the aggressive comments, $F(1, 163) = 7.18$, $p < .01$, $\eta_p^2 = .04$ ($M_{\text{aggressive}} = 4.98$, $SD_{\text{aggressive}} = 1.76$; $M_{\text{non-aggressive}} = 4.32$, $SD_{\text{non-aggressive}} = 1.53$). In addition, the participants who read comments against women ($M = 5.18$, $SD = 1.66$) or both gender groups ($M = 4.81$, $SD = 1.43$) were likely to support corrective actions via social media moderators, compared to those who read comments against men ($M = 4.08$, $SD = 1.79$), $F(2, 163) = 5.07$, $p < .01$, $\eta_p^2 = .06$. Interestingly, there was an interaction effect, $F(2, 163) = 6.27$, $p < .01$, $\eta_p^2 = .07$ (see Figure 2). Participants were more likely to support corrective action via social media page moderators when the comments were aggressive and against women.

Regarding support for corrective actions via the government, there was a main effect of the aggressiveness of online comments on participants' support for corrective actions via the government, $F(1, 163) = 4.23$, $p < .05$, $\eta_p^2 = .03$ ($M_{\text{aggressive}} = 4.52$, $SD_{\text{aggressive}} = 1.80$; $M_{\text{non-aggressive}} = 3.97$, $SD_{\text{non-aggressive}} = 1.69$), while there was only

a marginal effect of the gender group targeted in the online comments, $F(2, 163) = 2.74$, $p = .07$, $\eta_p^2 = .03$ ($M_{\text{women}} = 4.73$, $SD_{\text{women}} = 1.71$; $M_{\text{men}} = 3.79$, $SD_{\text{men}} = 1.99$; $M_{\text{both}} = 4.32$, $SD_{\text{both}} = 1.49$). Similar to participants' support for social media moderators, there was a similar pattern of an interaction effect, $F(2, 163) = 5.40$, $p < .01$, $\eta_p^2 = .06$ (see Figure 2). Thus, H4 was supported.

H5 and H6 predicted that participants would be willing to engage in online and offline activism after being exposed to aggressive comments. The ANOVA results showed that there was no effect of aggressiveness [$F(1, 163) = 1.25$, n.s., $\eta_p^2 = .008$] or the gender group targeted in the online comments [$F(2, 163) = 2.31$, n.s., $\eta_p^2 = .03$] for online activism. Similarly, the results indicated that there was no effect of being exposed to aggressiveness on engagement in offline activism, $F(1, 163) = 2.42$, n.s., $\eta_p^2 = .02$. Therefore, H5 and H6 were not consistent with data. However, there was a significant effect of the gender group mentioned in the online comments on participants' willingness to engage in offline activism behaviors, $F(2, 163) = 3.39$, $p < .05$, $\eta_p^2 = .04$ ($M_{\text{women}} = 5.58$, $SD_{\text{women}} = 1.12$; $M_{\text{men}} = 4.93$, $SD_{\text{men}} = 1.48$; $M_{\text{both}} = 5.27$, $SD_{\text{both}} =$

Figure 2. The Interaction Effect of Aggressiveness and Gender Groups targeted in the Online Comments on Support for Corrective Actions



1.16). Participants were more likely to engage in offline activism behaviors when the comments were against women, compared to when the comments were against men. Regarding RQ4 and RQ5, there was no interaction effect.

DISCUSSION

This study examined the effects of being exposed to aggressive online comments on female online users' gender identity salience, emotional reactions, and collective action, including the willingness to engage in corrective actions, and online and offline activism behaviors, based on the SIDE model and gender identity.

Regarding gender identity, our analysis did not show the expected pattern that exposure to incivility against female online users' gender group in online comments would make their gender identity salient. The gender identity among participants was already salient ($M = 5.87$), regardless of the aggressiveness and gender group targeted in the online comments (See Table 2). This result contradicts our predictions and findings from previous studies showing that one's social identity would be salient when he or she faces conflict and inequality against his or her social group (Abrams & Hogg, 2010). The results might be due to the fact that the social media post from the hypothetical news organization involved marriage in China. Even though the post did not include any aggressiveness or information about gender conflict, the topic of marriage may have reminded participants of the potentially unfair disadvantages in marriage (e.g., domestic violence inflicted by spouses), thereby activating their gender identity. In addition, given previous studies (Postmes & Spears, 2002) showing that sentences with gender-stereotyped traits and behaviors would produce gender-stereotypic behavior, upon the mere mention of the gender-related topic, young Chinese females may have already had a strong identification with their

gender group in their daily lives.

Although female online users' gender identity did not become more salient after being exposed to aggressive comments against their gender group, our results show that female online users experienced negative emotions such as irritation, anger, and anxiety when the online comments were aggressive against their gender group, which is consistent with the findings from previous literature (e.g., Chen & Lu, 2017; Chen & Ng, 2017; Kim & Kim, 2019). Previous research has suggested that negative emotions driven by uncivil comments would reinforce pre-existing attitudes (Kim & Kim, 2019) and satisfaction with the platform (e.g., message board) (Gervais, 2015). More importantly, negative emotions could be contagious among group members and increase the emotional intensity (Lu & Hong, 2022). Therefore, it would be necessary to have a collective awareness or an intervention to stop the continuous spread of negative sentiments triggered by aggressive comments targeting women.

Our analyses also showed only a marginal effect of being exposed to aggressive comments on engagement in corrective actions; in addition, there was no significant effect on online and offline activism. These results differ from the findings of previous literature (e.g., Naab et al., 2021; Roden & Saleem, 2022; Ziegele et al., 2020). Our sample involved Chinese participants living in an authoritarian country, where the risks associated with engaging in collective action are high, and the possibility of success is low (Kuang & Göbel, 2013). Especially in the online environment, the Chinese government has censored both the publication and viewing of online content and has used proactive and preventive methods to inhibit critical speech (Yang, 2018). Thus, being exposed to aggressive comments against their gender group might not be sufficient in encouraging participants to engage in corrective actions and online and offline activism. Still, the effect of being exposed

to online comments targeting participants' gender group on their willingness to engage in offline activism could be a hint that participants focused more on whether their in-group was attacked instead of the aggressiveness of the comments.

Interestingly, our study revealed that female online users support corrective actions via social media page moderators and the government after being exposed to aggressive comments against their gender group. The findings indicated that online users in China still have the desire to take further actions to prevent aggressive behaviors against their gender group; however, they preferred an indirect way, perhaps due to the risk of engaging in collective action. In addition, Chinese people tend to trust the government and be satisfied with its performance (Yang & Tang, 2010); thus, they may prefer to rely on the government's corrective actions.

These findings expand our knowledge regarding the effect of being exposed to aggressive comments against a specific gender group on users' emotional reactions and their willingness to engage in corrective actions. First, once one's social identity becomes salient, it would affect the experience of feeling negative emotions and support via moderation by social media page moderators and the government after being exposed to aggressive comments against one's social group. Second, engagement in corrective actions might differ, depending on the level of commitment from users and the cultural context. Even though online users support corrective actions via social media page moderators and the government, they may not be willing to take corrective actions that require their time and effort.

For practical implications, to encourage Chinese females to engage in collective corrective actions, further support from social media platforms and institutional agencies is needed. Even though social media platforms give the option to report aggressive comments against their gender group, female online users in China

tend not to engage actively in corrective actions. Given that female online users tend to remain anonymous, they frequently avoid using certain platforms or engaging in communication with others because of online harassment (Koirala, 2020; McLean & Griffiths, 2019). Thus, social media platforms should develop a strategy to encourage active corrective actions to avoid any further gender gap in participation in online platforms. In addition, considering that negative emotional experiences in online space could be intense, contagious, and persistent (Bortolan, 2022), the government or social media platforms need to provide support for females who have been exposed to aggressive comments against their gender group. Because female Chinese users tend to rely on corrective actions via a third party such as social media page moderators and the government, their active involvement in online content moderation may be necessary. Given the large volume of online posts and comments, the government might also consider getting help from nongovernmental organizations (NGOs) to manage aggressive posts and comments posted online.

Our study has limitations, including a small sample size and the lack of generalizability with regard to our experimental setting. Our participants were students from a Sino-foreign cooperative university in China; as a result, the sample may not faithfully reflect females in China in general. Additionally, our study examined a particular online context, Weibo. It is possible that our experiment activated participants' existing perceptions of Weibo. Future studies should adopt the context of other social media platforms with a representative sample of Chinese online users to extend the findings of this study. A third limitation stems from the topic of the post: female online users' gender identity might be activated once they read a post related to marriage, or their gender identity may already be strong before the experiment. Thus, a wider range of issues, including less gender-related issues,

could be tested in future research to understand how the findings may differ, depending on the strength of the gender identification resulting from the aggressiveness and gender group targeted in online comments. Researchers would benefit from adopting a cross-cultural perspective to understand the effect of social systems and cultural contexts on online users' engagement in corrective actions against aggressive posts and comments (e.g., Zhang et al., 2023).

As another limitation, this study only analyzed female users' identification with their gender group and their emotional and behavioral reactions after being exposed to aggressive comments. Given that female and male online users have shown different reactions toward comments about men and women (Haines et al., 2023), future research would benefit from investigating identification with gender groups and reactions from both male and female participants.

In sum, the current research offers new insights into the effects of being exposed to aggressive comments against one's gender group on a user's emotional reactions and behaviors. Our study provides evidence that exposure to aggressive comments leads online users to experience feelings of negative emotions and support corrective actions via social media page moderators and the government; however, such exposure does not necessarily lead them to engage in corrective actions by themselves or in online and offline activism. These findings can help communication scholars as well as social media platforms and the government understand user behaviors with respect to aggressive comments on social media platforms.

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