

How “Shouting Bot” Usage Shapes Community Participation in Chinese Online Fandoms

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Abstract

In recent years, a distinctive form of anonymous online fandom interaction known as “shouting bots” has emerged on Chinese social media platforms. These accounts accept anonymous submissions from fans and post them publicly without filtering the content. Although often labeled as “toilets,” they remain highly popular. To examine the functions that shouting bots play within fandom communities, this study investigates how shouting bot usage influences fandom participation through two mechanisms: perceived voice (perceived freedom of speech and perceived diversity of speech) and perceived solidarity (perceived norms and group identification). Through a survey of online fandom community users ($N = 213$), this study shows that shouting bot usage significantly increases perceived freedom and diversity of speech, but these factors do not predict community participation. Instead, group identification emerges as the only significant mediator linking the bot usage to participation. These findings suggest that community participation in Chinese online fandoms is driven less by perceived opportunities for expression and more by identification with the group.

Keywords: online community, fandom, participation, social media

How “Shouting Bot” Usage Shapes Community Participation in Chinese Online Fandoms

In recent years, “shouting bots” (隔空喊话bot) have emerged as a new form of anonymous interactions within Chinese fandom communities, especially those involving mostly female members and focusing on animes, comics, video games, novels, celebrities, and sports. These “bots” are social media accounts run by real people who accept anonymous submissions from fans and post them publicly without filtering or editing the content. In these spaces, fans send private messages to the bot, and the bot then posts their words publicly while keeping their identities completely hidden. A particularly noteworthy feature of communication surrounding shouting bots is that they foster conflicts—and many fans even refer to shouting bots as “toilets.” Despite such a controversial reputation, shouting bots persist in many fandom communities. Even if a bot is reported and deleted, new ones quickly reappear.

The persistence of shouting bots in Chinese online fandom communities suggests that these bots may serve important functions within these communities. For most online communities, voluntary participation and contribution are critical to community survival, yet people often lack the motivation to do so (Kollock, 1999). This raises a question of how online communities features, such as shouting bots, may shape individuals’ willingness to participate—and hence the goal of this project: examining the functional roles that shouting bots play in community participation in Chinese online fandoms. Moreover, beyond the context of shouting bots as anonymous platforms for fans, this study provides a deeper understanding of how online fandom communities operate and organize themselves.

Similar forms of anonymous online community engagement have been studied outside Chinese contexts, for example, Yik Yak, a platform built around anonymous communication among college students (Black et al., 2016). Existing studies on Yik Yak have emphasized

individual-level mechanisms such as psychological safety or fear of self-presentation through which this form of anonymous engagement contributes to participation (Bayne et al., 2019; Clark-Gordon et al., 2017). However, less attention is paid to community-level mechanisms.

To identify the functional roles, this study focuses on two community-level mechanisms, *voice* (Hirschman, 1970) and *solidarity* (Hechter, 1988)—especially users’ perceptions of them—through which shouting bot usage may influence community participation. Voice refers to the act of attempting to change an organization from within by expressing dissatisfaction or concern (Hirschman, 1970). In the context of online fandom communities, perceived voice involves members’ perceptions about expressing concerns or dissatisfaction about the original work’s plot or conflicts within fan communities, and there are at least two aspects: perceived diversity and freedom of speech. These perceptions may indicate members’ willingness to engage with the group, including joining discussions and coordinating activities. At the same time, solidarity refers to members’ shared understanding to achieve collective obligations (Hechter, 1988), and this study focuses on two aspects of perceived solidarity: individuals’ perceptions of unspoken rules and expectations within the fandom community (perceived norms), and their sense of belonging and identification with the group (group identification). Shouting bot usage may increase the psychological salience of group norms and identification, thereby making users feel more obligated to participate.

The following sections first briefly describe shouting bots and review relevant research on online fandom communities, followed by an examination of potential mechanisms connecting shouting bot usage and community participation in Chinese online fandoms through freedom of speech, diversity of speech, norms and group identification. A survey study is then reported to test these mechanisms. The findings suggest that among these four mechanisms, group

identification is the only one which plays the role in linking shouting bot usage to community participation. The implications of the findings are discussed.

Shouting Bots in Chinese Social Media Fandom Communities

Shouting bots are particularly prevalent in Weibo, a Chinese counterpart of [X.com](#) and one of the major Chinese social media platforms (Wang & Ge, 2023). On Weibo, fans can send private messages to a shouting bot in a format such as “[submission] + content,” and the bot will post the message publicly while keeping the contributor’s identity hidden. The names of original works and characters are often written covertly to prevent outsiders from finding the bot. Each community may have its own bot, such as a Harry Potter Shouting Bot, and even sub-bots for specific pairings or characters. This structure creates a unique communication dynamic: contributors express opinions on controversial topics, while commenters usually avoid direct confrontation since comments on bot posts display usernames and IP addresses, whereas the submissions themselves remain anonymous.

Despite the controversial reputation of shouting bots (e.g., some users referred to them as “toilets”), they are highly popular in Chinese online fandom communities. To understand such controversial popularity, it is necessary to understand a key feature of fandom communities: they are susceptible to conflict. *Fan conflict* refers to tension, disagreement, or antagonism that arises among members within or outside fan communities, often centering on issues of interpretive authority (Hubbard et al., 2024), moral boundaries (Sundet & Peteresen, 2021), identity politics (Wang & Ge, 2023). There are three sources of fan conflict. One lies in the typical, hierarchical structures within fandom communities, where tensions emerge between “core” and “peripheral” members who hold differing views about the authority to interpret the fandom’s object (Hubbard et al., 2024). Another source of conflict derives from interactions between fans and outsiders or

among competing groups, due to differing norms and cultural backgrounds as fandoms expand across transmedia environments (Sundet & Peteresen, 2021). Still, anonymity—a characteristic of the Internet—is a third source of fan conflicts, as it can weaken trust and identification within groups (Scott et al., 2011) and easily lead to hostile behavior (Lapidot-Lefler & Barak, 2012; Rost et al., 2016).

On top of the above three sources of fan conflicts, Chinese online fandom communities involve additional exacerbating factors of fan conflict. For example, Chinese fans often organize and engage in a practice called “data-ization,” which translates emotional devotion toward idols or original works into quantifiable metrics such as likes, reposts, and streaming counts (Yin, 2020, p. 475). These numerical performance metrics make it easier for fans to track their community’s solidarity and loyalty, turning such comparisons into weapons during inter-fandom conflicts. The visibility of data intensifies competition and increases the frequency of disputes. Scholars also highlight how fandom intersects with China’s tightly regulated online environment, where fans internalize censorship norms and engage in “fandom policing” (Wang & Ge, 2023, p. 1). Within this environment, fans act as informants who report, monitor, and discipline one another’s behaviors. Many fans have been attacked through reporting and cyberbullying, forcing them to delete their accounts, which in turn reduces fandom participation.

The potential of conflicts in many Chinese online fandom communities, might have driven users to seek spaces where they can express themselves freely without fearing for their safety. Shouting bots might have created such a space where fans can truly express their thoughts, develop a sense of belonging, and/or negotiate with community norms and standards, thus increasing participation and contribution within their communities. The following sections

elaborate on such potential functions of shouting bots through two distinct mechanisms of group/organizational processes: voice and solidarity (also see Figure 1).

Voice, Solidarity, and Community Participation in Chinese Online Fandoms

Fandom communities blur the boundary between media consumption and production, as fans shift from passive audiences to active creators (Jenkins, 1992). Fans participate online in a variety of ways, including creating fan works through drawing or writing, imitating characters' language, or interacting with other fans through likes, comments, and discussions. As discussed below, voice and solidarity are two important factors that shape community participation in Chinese online fandoms.

Voice is the act of trying to change conditions in a community rather than staying silent or withdrawing, playing an important role in the basic function of organizations and communities that require a maximally active and vocal public (Hirschman, 1970). Voice plays an important role in an organization because it can be a substitute for exit when members feel their benefits are threatened. Voice influences their willingness to engage in a group or exit (Hirschman, 1970). In online communities, when participants perceive their voice is effective, they are more likely to continue participating rather than exit (Frey & Schneider, 2023). These perceptions function not only as an important antecedent of voice—because fear of social sanctions may discourage individuals from speaking (Weeks et al., 2023)—but also as a consequence of voice, since individuals may feel heard and develop a stronger sense of perceived voice after successfully expressing their opinions (Frey & Schneider, 2023).

Prior research above has emphasized the role of voice in encouraging participation in online communities (Frey & Schneider, 2023; Ognyanova et al., 2013). However, most studies have focused on specific contexts, such as political or institutional settings, where topics are

consequential, while less attention has been paid to fandom communities (Frey & Schneider, 2023; Ognyanova et al., 2013; Weeks et al., 2023). Chinese online fandom communities, in which members use shouting bots, differ from these contexts in several important ways. First, these communities are primarily organized around entertainment and shared interests. Also, shouting bot users are predominantly female, and they discourage male participation, which contrasts with many other online communities that do not impose gender-based boundaries. These distinctions may lead the mechanism of voice to function differently in shaping participation.

To better capture how individuals perceive voice in online fandom communities, this study conceptualizes perceived voice as a multidimensional construct, operationalized through two aspects: perceived diversity of speech and perceived freedom of speech. Both dimensions may provide members with a sense of safety in a community and then encourage them to participate. Perceived freedom of speech refers to individuals' perceived ability to express opinions, concerns, or dissatisfaction in a community without fear of domination by power control (Frey & Schneider, 2023; Habermas, 1993; Weeks et al., 2023). People choose between using voice or exiting a group depending on the cost of expression (Hirschman, 1970). When the cost of speaking freely within a group is lower, members are more likely to engage rather than withdraw. Similarly, in online environments, perceiving a lack of freedom of speech, combined with fear of punishment for speaking out, can lead members to disengage from online participation (Weeks et al., 2023), as postulated below:

H1a. Perceived freedom of speech positively influences community participation in Chinese online fandom.

Another aspect of perceived voice is perceived diversity of speech, which refers to the perceived co-existence of different perspectives, rather than a single shared viewpoint within a community. It ensures that speech within a group is not homogeneous, since homogeneity can weaken collective voice by silencing dissatisfaction from minority members (Asch, 1951). When minority members find that their perspectives can be expressed alongside majority opinions, they are less likely to exit from the group (Hirschman, 1970). In online environments, when fewer diverse opinions are perceived, users experience greater frustration and are more likely to disengage if they feel their voices are ignored (Frey & Schneider, 2023), thus reducing their participation as postulated below:

H1b. Perceived diversity of speech positively predicts community participation in Chinese online fandom.

In addition to voice, perceived group solidarity may be another mechanism through which shouting bot usage promotes community participation in Chinese online fandom. Group solidarity refers to the unity and cohesion within a group, which generates a commitment to collective obligations, motivating members to make sacrifices for the community (Hechter, 1988). Perceived solidarity is highly associated with individuals' well-being and stronger sense of belonging (Bekalu et al., 2021). The importance of group solidarity in shaping participation in online communities has been widely highlighted (Hechter, 1988; Ruiu & Ragnedda, 2022), suggesting that shouting bot usage may influence community participation through perceived solidarity. There are two factors that influence perception of group solidarity: perceived norms (Hechter, 1988) and group identification (Tajfel, 1974).

Norms are rules within societies or groups and are a key factor in establishing social order and shaping members' behavior within a group (Otten et al., 2024). Norms constitute an

important aspect of group solidarity, as they encourage peer monitoring and sanctioning to reduce free riding and orient group members to collective goods (Hechter, 1988). In online communities, norms also shape group specific experiences by informing individuals about their past contribution behaviors and motivating future contributions (Cheshire & Antin, 2008). Rather than objective norms themselves, it is individuals' perception of community norms that affect their actual behavior (Rothman et al., 2019). Therefore, this study proposes the following hypothesis:

H2a. Perceived community norms are positively associated with community participation in Chinese online fandom.

Compared with perceived norms, group identification refers to people's self-concept derived from their knowledge of membership in a social group and their emotional connection to that membership (Tajfel, 1974). The stronger the connection between an individual and the group, the more likely they are to contribute in order to fulfill their obligations to the group (Hechter, 1988). Perceived group identification and a sense of belonging also increase online members' willingness to contribute to communities (Kollock, 1999). Today, online fandom communities have evolved into vibrant participatory ecosystems in which individuals gather to share cultural interests, build identities, foster belonging, and form emotional connections through digital interaction (Groene & Hettinger, 2016). Therefore, this study hypothesizes the following:

H2b. Perceived identification is positively associated with community participation in Chinese online fandom.

Shouting Bots, Voice, and Solidarity in Online Fandom Communities

Shouting bot usage creates a new space that offers fans a sense of freedom and diversity of expression for discussion and interaction, creating a channel for members to show their dissatisfaction. As discussed earlier, online communities, especially those on Chinese platforms such as Weibo may foster reporting and fan conflicts, creating a need for safer places for fans to express. Shouting bots might be created to allow fans to anonymously send various opinions and works. Their existence encourages fans to express opinions they might hesitate to share on their personal accounts. Even if the content is controversial or represents minority views, only the bot accounts are at risk of being deleted, and fans know their personal accounts will not be affected. When fans perceive that they will not be punished if they express opinions they are unsure may be controversial, their perception of freedom of speech of the community can increase. Therefore, shouting bot usage may increase perceived freedom of speech within a given community, as hypothesized below:

H3a. Shouting bot usage is associated with higher perceived freedom of speech in the fandom community.

Also, the strict censorship from members and data-driven comparison in online Chinese fandom communities threaten relationships among fans. The difference between followers and numbers of likes strengthens the hierarchical gap between “core” and “peripheral” members (Hubbard et al., 2024). In a group, members who are in the lower hierarchy often resort to silence or exit instead due to lower impact and higher cost (Hirschman, 1970). Because shouting bots don’t censor fans’ submissions, the cost of expression is equal for all members. In computer-mediated settings, anonymity can encourage disclosure, the expression of minority opinions, and participation from lower-status members (Postmes et al., 2001). Shouting bots

provide a platform that reduces the perception of hierarchy in fandom communities by obscuring contributors' identities, thereby reducing inequalities in visibility and enabling individuals with marginalized perspectives to feel that their opinions are also visible. Therefore, shouting bot usage may enhance perceived diversity of speech, as postulated below:

H3b. Shouting bot usage is associated with higher perceived diversity of speech in the fandom community.

Despite the perceived voice, shouting bot usage can also influence members' perceived solidarity. The lack of censorship in shouting bots can increase peer monitoring because the cost of monitoring becomes lower. For example, one important norm in fandom is rejecting "out of character" (OOC) behavior, meaning that characters in fan works should not act in ways that differ from their original portrayals (Jenkins, 1992, p. 105). Fans can anonymously submit posts about fan works they believe may be "OOC" and ask others for feedback. Because submitters do not face personal risks or threats when making such judgments, peer monitoring and sanction occurs more frequently, which in turn strengthens the enforcement of norms within fandom communities (Hechter, 1988). Repeated monitoring and sanctioning provide individuals with exposure to normative information, which is accumulated and integrated into their perception of norms (Dannals & Li, 2024). Therefore, the bot usage likely reinforces perceived norms within a community, as postulated below:

H4a. Shouting bot usage is positively associated with perceived norms in the fandom community.

Finally, fans also build a collective sense of social identity by categorizing themselves as members of specific fandoms and comparing themselves with other groups (Lee et al., 2020; Maros & Basek, 2022). Shouting bots do not display the titles of their works in the account.

Instead, their account names are often derived from memes or slang within the fandom, which are only recognizable to fans of the work. Additionally, fans repeatedly use slang and nicknames from the original work when submitting posts or commenting on shouting bots, which increases group identity and a sense of belonging (Adams, 2009). This approach creates a secluded “secret base” for fans, highlighting the distinctiveness of this community from outsiders while also serving as an expression of identity:

H4b. Shouting bot usage is positively associated with perceived identity in the fandom community.

Based on the theoretical framework and the associations among variables discussed above, this study further proposes the following mediating mechanisms:

H5. The positive association between shouting bot usage and community participation in Chinese online fandom is mediated through perceived freedom of speech (H5a), perceived diversity of speech (H5b), perceived norms (H5c), and group identification (H5d).

Methods

This study used a survey as the research method to study the correlation between the shouting bot usage and community participation in Chinese online fandom. The survey aims to help explore how bot usage shapes their participation through perceived voice and perceived solidarity.

Participants

Wenjuanxing is the platform to design the survey and was distributed primarily across four Chinese social media platforms: Rednote, Weibo, QQ, and WeChat, from February 7 to March 4, 2026. Participants had a 20% chance of receiving a monetary incentive ranging from

10 to 25 RMB. In total, 2,260 responses were collected, of which 213 were deemed valid. Participants who were under 18 years old or who did not identify themselves as part of any online fandom community were excluded. Additionally, responses that contained identical answers or nonsensical content to the question, “Please use 1–2 sentences to describe an online fandom community associated with the shouting bot you engage with the most,” were also removed.

A total of 213 participants reported having engaged with shouting bots on Chinese social media, and most identified themselves as members of online fandom communities related to K pop, anime, drama, and video games. This usage includes actively submitting posts, commenting through shouting bots, or interacting with other bot users. All participants in this study are female, which may be due to the particular popularity of shouting bots within female-dominated fandoms, where some bots explicitly exclude male submitters. The average age of participants falls within the range of 18–24 years ($SD = 0.311$). The median monthly disposable income is approximately 2,000–2,499 RMB ($SD = 1.952$), and the median educational level corresponds to a Bachelor’s degree ($SD = 0.503$). Among these participants, the average overall frequency of community participation is approximately twice per day ($SD = 2.453$). Specifically, the average frequency of usage of community associated with the shouting bot they engage with most is about twice per week ($SD = 3.125$), and the average exposure frequency of that specific shouting bot is approximately three times per month ($SD = 2.155$).

Measurement

Shouting bot usage was measured using 11-point scale ($M = 4.85$, $SD = 2.289$), ranging from “none” (1) to “more often than three times a day,” (11) with intermediate categories including monthly, weekly, and daily frequencies (e.g., once a month, twice a week, once a day).

Participants were asked, “[t]hinking about the past month, please select the option that best describes how often you engaged with the shouting bot.” The items captured both direct interaction with the shouting bot and interaction with other users, including “[i]n the past month, how often did you post to the shouting bot”, “... how often did you comment on posts from the shouting bot”, “... how often did you like a post from the shouting bot”, “... how often did you forward posts from the shouting bot”, and “... how often did you engage with (comment/like/forward) other users under the shouting bot’s posts?”

Perceived freedom of speech was measured using a 7-point Likert-scale ($M = 4.24$, $SD = 0.861$) to assess the extent to which participants agreed with a series of statements. The statements include: “I feel free to express my true opinions about the fandom through the shouting bot.”, “I am not worried that my content will be censored or deleted when I submit content to the shouting bot.”, “I am not worried that my comment under the shouting bot’s posts will be censored or deleted.”, “People like me are allowed to express their opinions freely through the shouting bot.”, and “Although I may disagree with the opinions that other fans hold, they are allowed to express those views through the shouting bot.” Additional statements capturing fear of social sanctions (FOSSs; Weeks et al., 2023) were also included as reverse indicators of perceived freedom of speech. These statements include: “I am afraid others will judge me if I express my true opinion through the shouting bot.”, “I am afraid of the social consequences if I say something controversial through the shouting bot.”, “I am afraid of being excluded by people I know if I express my true opinions through the shouting bot.”, and “I am afraid about being publicly shamed or attacked for saying the wrong thing online through the shouting bot.”

Perceived diversity of speech ($M = 5.63$, $SD = 1.047$) was measured using a 7-point Likert scale to assess participants' level of agreement with statements regarding the range of viewpoints expressed within shouting bots. The statements include: "[i]n the shouting bot, different viewpoints are welcome.", "... different viewpoints are visible.", and "... discussions show a wide variety of perspectives from different types of fans."

Perceived norms ($M = 4.75$, $SD = 1.109$) were measured using a 7-point Likert scale, with items adapted from prior research on the strength of social norms and tolerance of deviance to better fit the context of online fandom communities (Gelfand et al., 2011). These items capture both participants' perceptions of normative expectations and the extent to that norms are enforced within the community, including "[i]n the fandom community I am part of, there are many social norms that people are supposed to abide by.", "... there are very clear expectations for how people should act in most situations.", "... people agree upon what behaviors are appropriate versus inappropriate in most situations.", "People have a great deal of freedom in deciding how they want to behave in most situations.", "... if someone acts in an inappropriate way, others will strongly disapprove.", and "... people almost always comply with norms."

Group identification ($M = 4.75$, $SD = 1.251$) was measured using a 7-point Likert scale, with items adapted from prior research which has demonstrated the scale's reliability and validity (Postmes et al., 2013). These items include: "I identify with the fandom community.", "I feel committed to the fandom community.", "I'm glad to be a member of the fandom community.", "Being a member of the fandom community is an important part of how I see myself."

Finally, *community participation* in Chinese online fandom ($M = 5.49$, $SD = 2.881$) was measured using survey items adapted from prior research by Fiesler and Dym, assessing the frequency with which participants engage in various online fandom activities (2020). Response

options ranged from “none” (1) to “more often than three times a day,” (17) with intermediate categories capturing seasonal, monthly, weekly, and daily frequencies. These items include: “Post fanfiction,” “Post fan videos or other remixes,” “Post fan art,” “Post fan graphics (like gifs, icons, or photomanips),” “Participate in fan meta-discussion,” “Participate in fan roleplaying activities (e.g., character roleplay chats, posting cosplay photos),” “Trade fan-made or official merchandise,” “Join collective fan campaigns (like changing profile pictures, posting birthday wishes, voting),” and “Commission/take commissions (like writing, art, songs, etc).”

In addition, several control variables were measured, including age, education, income, passive exposure to shouting bots, and passive usage of the specific community, and overall experience of online fandom communities (see Table 1 and Table 2 for descriptive statistics).

Analytical Procedure

The hypotheses were tested using regression analysis. Mediation analyses were performed using Hayes’ PROCESS macro (Hayes, 2022), with 5,000 bootstrapped samples and 95% confidence intervals. Control variables, including age, educational level, income, passive exposure to shouting bots, and specific community usage frequency, were included in the models.

Results

H1a and H1b postulated that perceived freedom of speech and diversity of speech positively predict community participation. Regression analysis indicated that perceived freedom of speech did not significantly predict the participation ($b = 0.147$, $p > .10$), and thus H1a was not supported. Similarly, perceived diversity of speech was not significantly associated with community participation ($b = -0.308$, $p > .05$), providing no support for H1b.

H2a and H2b postulated that perceived norms and group identification positively related to community participation. Perceived norms were also not significantly associated with the participation ($b = 0.046$, $p > .10$), and therefore H2a was not supported. In contrast, group identification was positively associated with community participation ($b = 0.381$, $p < .05$), supporting H2b.

H3a, H3b, H4a, and H4b postulated that usage of shouting bots can increase perceived freedom of speech, perceived diversity of speech, perceived norms and group identification. With regard to predictors of the mediators, usage of shouting bots significantly predicted perceived freedom of speech ($b = 0.086$, $p < .01$), supporting H3a. Usage of shouting bots also significantly predicted perceived diversity of speech ($b = 0.080$, $p < .01$), supporting H3b. However, perceived norms were not significantly associated with usage of shouting bots ($b = 0.073$, $p > .05$), and thus H4a was not supported. Finally, usage of shouting bots significantly predicted group identification ($b = 0.13$, $p < .01$), providing support for H4b.

Finally, H5 postulated that shouting bot usage is positively associated with community participation through perceived freedom of speech (H5a), perceived diversity of speech (H5b), perceived norms (H5c), and group identification (H5d). However, mediation analyses further showed that the indirect effect through perceived freedom of speech was not significant (BootCI [-0.0231, 0.0588]), providing no support for H5a. Similarly, the indirect effect through perceived diversity of speech was not significant (BootCI [-0.0748, 0.0053]), and thus H5b was not supported. The indirect effect through perceived norms was also not significant (BootCI [-0.0254, 0.0351]), providing no support for H5c. In contrast, the indirect effect through group identification was significant (BootCI [0.0066, 0.1118]), supporting H5d. These results suggest that group identification serves as a primary mediator between shouting bot usage and

community participation among the four examined variables, even after accounting for control variables.

Discussion

This study examined the relationship between shouting bot usage and community participation in Chinese online fandoms, with a particular focus on two community-level mechanisms represented by four mediators: perceived freedom of speech, perceived diversity of speech, perceived norms, and group identification. The results indicate that while shouting bot usage was associated with increased perceived freedom and diversity of speech, these voice factors did not translate into higher levels of community participation. Regarding solidarity, perceived norm was not associated with shouting bot usage, nor community participation. Among the four mediators, group identification emerged as the only significant mediator linking the usage to the participation.

These findings challenge the assumption that greater perceived voice necessarily leads to increased participation in fandom communities. Although usage of shouting bots enhances perceived freedom and diversity of speech, such perceptions alone do not appear sufficient to motivate participation. One possible explanation lies in the contextual nature of online fandom communities. The concepts of freedom and diversity of speech are often associated with more formal or political forms of expression, where being heard carries meaningful consequences. In contrast, fandom communities are typically structured around entertainment and affective engagement. As a result, participants may perceive their contributions in an online fandom community as informal and low-stakes, rather than as meaningful acts of expression that require recognition. Under such conditions, perceived voice may be less relevant in motivating participation, as users engage primarily for enjoyment rather than for influencing others or being

heard in consequential ways. This suggests that the role of perceived voice may be context-dependent, playing a more limited role in entertainment-oriented communities compared to political or deliberative settings (Frey & Schneider, 2023; Ognyanova et al., 2013; Weeks et al., 2023).

At the same time, the findings suggest that community participation in Chinese online fandom is driven more by individuals' psychological identification with a community, rather than perceptions of the community's communicative and normative environments. While perceived freedom of speech, diversity of speech, and norms reflect how the community is experienced from the outside, these factors did not significantly predict participation. In contrast, group identification represents an internalized sense of connection with the community.

In response to the goal of this study, these findings help explain why shouting bots continue to exist despite their negative reputation. Across the four variables examined, group identification is the only mechanism that mediates the relationship between shouting bot usage and community participation. In the context of female-dominated and entertainment-oriented fandom communities, shouting bots function not only as platforms for expression, but also as mechanisms that foster collective identity among members, thereby encouraging deeper engagement with the community.

Practically, this study suggests that in the context such as shouting bots, where there is no formal community management or centralized control, participation is not shaped by top-down design or moderation, but rather emerges from members' shared practices and interactions. For fandom communities, this implies that fostering participation may depend less on implementing strict rules and more on creating spaces that build members' identification related to the group. For example, maintaining semi private or insider oriented spaces, such as shouting bots that are

primarily known within the group, and allowing members to interact with one another may gradually strengthen users' sense of identification and belonging, thereby promoting sustained participation.

The first limitation of this study is the inability to establish causal direction among the variables due to the cross-sectional design. Although alternative models were tested that reversed the mediation pathways from group identification to the bot usage and then to community participation, the indirect effect was not significant (BootCI [-0.0001, 0.2101]). However, this does not fully rule out other possible causal relationships among the variables or determine the direction of the relationships. Second, the responses indicate that most participants are from fandom communities related to K pop, anime, drama, and video games, while data from other types of fandoms, such as sports and influencers, are limited. Third, as this study relies solely on survey data, it cannot capture detailed information about how fans interact with one another through shouting bots, or how changes in their perceptions of voice and solidarity influence their participation over time. As a result, it remains unclear whether additional mechanisms beyond voice and solidarity may also play a role in shaping participation.

Therefore, future research could employ longitudinal designs to better determine the directionality of the relationships between bot engagement, group identification, and community participation. In addition, collecting data from a broader range of fandom communities would help address the gaps in the current sample. Finally, qualitative approaches such as interviews with shouting bot users may provide deeper insights into how users interpret and interact with shouting bots in their everyday practices, which may help supplement the mechanisms not captured in this study.

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Figure 1.

Path Diagram of Bot Usage and Community Participation

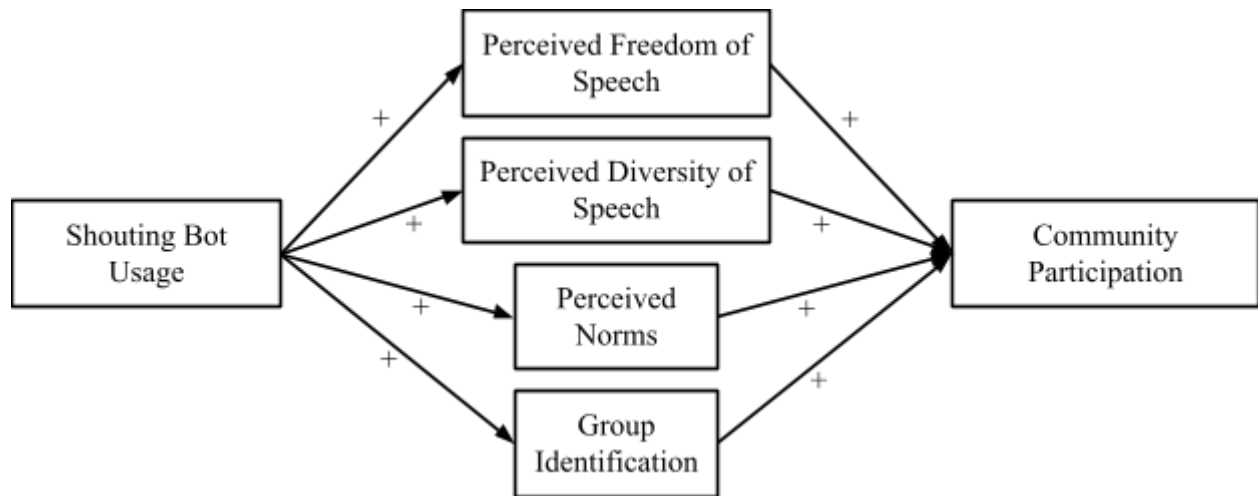


Table 1.*Demographic Information (N = 213)*

Demographic Variable	n	%	Demographic Variable	n	%
Age (M = 2.08, SD = .311)	213	100%	Income (M = 5.14, SD = 2.160)	174	81.7%
18-24 (1)	197	92.5%	Below 500 RMB (1)	2	0.9%
25-29 (2)	14	6.6%	500-999 RMB (2)	7	3.3%
30-39 (3)	2	0.9%	1,000–1,499 RMB (3)	33	15.5%
40–49 (4)	0	0%	1,500–1,999 RMB (4)	36	16.9%
50 and above (5)	0	0%	2,000–2,499 RMB (5)	35	16.4%
Missing	0	0%	2,500–2,999 RMB (6)	20	9.4%
Gender (M = 2, SD = 0)	174	81.7%	3,000–3,999 RMB (7)	15	7.0%
Male (1)	0	0%	4,000–4,999 RMB (8)	10	4.7%
Female (2)	174	81.7%	5,000–5,999 RMB (9)	8	3.8%
Missing	39	18.3%	6,000–9,999 RMB (10)	6	2.8%
Education (M = 3.95, SD = .557)	174	81.7%	10,000–14,999 RMB (11)	1	0.5%
Middle high school or below (1)	0	0%	15,000–19,999 RMB (12)	0	0%
High school / Technical secondary school / Vocational high school (2)	7	3.3%	20,000 RMB or above (13)	1	0.5%
Associated degree (3)	10	4.7%	Missing	39	18.3%
Bachelor's degree (4)	141	66.2%			

Master's degree (5)	16	7.5%
Doctoral degree or above (6)	0	0%
Missing	39	18.3%

Note. Demographic information for 39 participants was missing due to data collection errors.

Table 2.*Descriptive Statistics for Survey Measures (N = 213)*

Variable	<i>M</i>	<i>SD</i>
Overall Experience of Online Fandom Communities (1 - 17)	15.50	2.453
Passive Exposure to Shouting Bots (1 - 11)	8.02	2.155
In the past month, how often did you notice posts from the shouting bot on your homepage?	9.01	2.370
In the past month, how often did you read posts from the shouting bot?	8.95	2.698
In the past month, how often did you read comments on posts from the shouting bot?	8.22	2.822
In the past month, how often did you search for the shouting bot or content from it?	6.50	2.869
In the past month, how often did you visit the homepage of the shouting bot?	7.42	2.869
Passive Usage of the Specific Community (1-17)	12.65	3.125
Read, watch, or view fan creations.	13.48	3.136
Read, watch, or view original work.	11.82	4.078
Shouting Bot Usage (1 - 11)	4.85	2.289
In the past month, how often did you post to the shouting bot?	2.38	2.137
In the past month, how often did you comment on posts from the shouting bot?	5.05	2.971
In the past month, how often did you like a post from the shouting bot?	6.37	3.263
In the past month, how often did you forward posts from the shouting bot?	4.58	3.192
In the past month, how often did you engage with (comment/like/forward) other users under the shouting bot's posts?	5.85	3.347
Perceived Freedom of Speech (1-7)	4.24	0.861
I feel free to express my true opinions about the fandom through the shouting bot.	5.02	1.228

I am not worried that my content will be censored or deleted when I submit content to the shouting bot.	4.61	1.468
I am not worried that my comment under the shouting bot' posts will be censored or deleted.	4.68	1.629
People like me are allowed to express their opinions freely through the shouting bot.	5.16	1.433
Although I may disagree with the opinions that other fans hold, they are allowed to express those views through the shouting bot.	5.54	1.279
I am afraid others will judge me if I express my true opinion through the shouting bot. *	3.65	1.555
I am afraid of the social consequences if I say something controversial through the shouting bot. *	2.92	1.537
I am afraid of being excluded by people I know if I express my true opinions through the shouting bot. *	3.85	1.567
I am afraid about being publicly shamed or attacked for saying the wrong thing online through the shouting bot. *	1.567	1.567
Perceived Diversity of Speech (1-7)	5.63	1.047
In the shouting bot, different viewpoints are welcome.	4.13	1.533
In the shouting bot, different viewpoints are visible.	5.58	1.197
In the shouting bot, discussions show a wide variety of perspectives from different types of fans.	5.67	1.105
Perceived Norms (1-7)	4.75	1.109
In the fandom community I am part of, there are many social norms that people are supposed to abide by.	5.35	1.271
In the fandom community I am part of, there are very clear expectations for how people should act in most situations.	4.70	1.500
In the fandom community I am part of, people agree upon what behaviors are appropriate versus inappropriate in most situations.	5.20	1.328
People have a great deal of freedom in deciding how they want to behave in most situations. *	3.46	1.528
In the fandom community I am part of, if someone acts in an	5.48	1.114

inappropriate way, others will strongly disapprove.

In the fandom community I am part of, people almost always comply with norms.	4.36	1.399
Group Identification (1-7)	4.75	1.251
I identify with the fandom community.	4.90	1.452
I feel committed to the fandom community.	4.41	1.495
I'm glad to be a member of the fandom community.	5.06	1.391
Being a member of the fandom community is an important part of how I see myself.	4.62	1.563
Community Participation (1-17)	5.49	2.881
Post fanfiction	4.07	4.440
Post fan videos or other remixes	5.33	4.320
Post fan art	3.52	3.904
Post fan graphics (like gifs, icons, or photomanipulations)	5.18	4.113
Participate in fan meta-discussion	9.92	4.717
Participate in fan roleplaying activities (e.g., character roleplay chats, posting cosplay photos)	3.28	4.094
Trade fan-made or official merchandise	7.88	4.166
Join collective fan campaigns (like changing profile pictures, posting birthday wishes, voting)	6.27	4.722
Commission/take commissions (like writing, art, songs, etc)	3.94	3.943

Notes. Items marked with * were reverse-coded so that higher values indicate the same direction as other items.

Table 3.*Summaries of Regression Analyses*

Variable	M1 (Community Participation)	M2 (Freedom of Speech)	M3 (Diversity of Speech)	M4 (Norms)	M5 (Identification)
(Intercept)	-.926*** (2.507)	4.027*** (.717)	5.482*** (.867)	3.887*** (.926)	3.068** (1.015)
Shouting Bot Usage	.347*** (.096)	.086** (.031)	.080** (.037)	.073 (.040)	.130** (.044)
Freedom of Speech	.147 (.222)	-	-	-	-
Diversity of Speech	-.308 (.182)	-	-	-	-
Norms	.046 (.180)	-	-	-	-
Identification	.381* (.170)	-	-	-	-
Age	1.691 (.608)	-.258 (.199)	.282 (.240)	.162 (.256)	.432 (.281)
Education	-.768* (.386)	.142 (.126)	-.239 (.153)	.185 (.163)	-.033 (.179)
Income	.058 (.098)	-.032 (.032)	-.016 (.039)	-.015 (.042)	-.049 (.046)
Passive Exposure to Shouting Bots	-.046 (.112)	-.013 (.037)	-.057 (.044)	.006 (.047)	.016 (.052)
Passive Usage of the Specific Community	.099 (.069)	.004 (.023)	.042 (.027)	-.046 (.029)	.023 (.032)
Overall Experience of Online	.139 (.089)	-.001 (.030)	-.008 (.036)	.004 (.038)	.007 (.042)

Fandom
Communities

R2	.243	.049	.061	.044	.098
N	213	213	213	213	213

Note. Standard errors are parenthesized. * $p < .05$, ** $p < .01$, *** $p < .001$.