

Unpacking Negative Feelings and Perceptual Gaps About Social Interactions with Conversational AI

Hui Guan
Social Informatics
Kyoto University
Kyoto, Japan
guan.hui.82i@st.kyoto-u.ac.jp

Ge Gao
College of Information
University of Maryland
College Park, Maryland, USA
gegao@umd.edu

Jack Jamieson
NTT
Yokosuka, Japan
jack@jackjamieson.net

Naomi Yamashita
Social Informatics
Kyoto University
Kyoto, Japan
naomiy@acm.org

Abstract

An increasing number of people engage with conversational AI socially, a practice that has sparked polarized views: users often report positive experiences, while non-users express fear and stigma. These contrasting perspectives can harm social AI users and skew feedback, hindering future designs. However, research is lacking on how and what impressions are formed among people who do and do not use conversational AI socially. Through a survey of 67 participants, we explored the specifics of negative attitudes, the factors that shape them, as well as the perceptual discrepancies among people. The results highlighted non-social-users' negative emotions such as fear and distress associated with this practice, and that social users overestimated the positive impressions of non-social users. Additionally, mass media coverage predominantly plays a negative role in shaping impressions among the non-social user group. This study provides a foundation and insights for future research to understand perceptions about social AI use.

CCS Concepts

• **Human-centered computing** → Empirical studies in HCI.

Keywords

Conversational AI, Social-oriented interactions, Negative perceptions, Social stigma

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1 Background and motivation

Recent advances in AI are rapidly transforming human relationships. One area of growth is people engaging with conversational AIs in a socially oriented manner rather than for task-oriented purposes. People now seek companionship, emotional support, or advice through their interactions with conversational AI [2, 17, 20, 23], and such interactions have been reported by its users as beneficial and helpful [20, 23], with demonstrated positive impacts on alleviating loneliness and improving mental well-being [17].

However, social interactions with conversational AI are still relatively uncommon, accounting for approximately 9% of overall chatbot users [2, 19], and have sparked controversy among the general public. Some hold negative and fearful views, perceiving such interactions as sad and artificial, and considering people who interact with conversational AI in that way to be lonely and lacking social skills [7]. As a result, those who engage in social interactions with conversational AI have described experiencing social stigma related to their human-AI relationships [20]. Such negative perceptions not only contribute to stigma and polarization but may also discourage individuals from adopting conversational AI for potentially beneficial purposes, such as therapy AI [14, 15, 28]. Moreover, with only a subset of individuals—often with specific characteristics—socially engaging with conversational AI, the lack of diverse feedback and usage data risks reinforcing biases and hindering inclusive design.

While existing literature acknowledges this phenomenon [7, 20], there is limited understanding of the specifics of people's attitudes toward conversational AI use, the factors that shape them, and potential perceptual discrepancies between groups. To bridge this gap, we conducted an online survey including people who did and did not identify as socially engaging with conversational AI. Following prior research, "social interaction" was defined as the exchange of social-emotional and affective information, excluding task-induced emotions such as frustration or gratitude during task completion, as well as entertainment-driven behaviors like generating funny responses (see Section 2.2).

Our findings reveal that non-social users predominantly expressed negative emotions toward socially engaging with conversational AI, especially distress and fear. Lacking exposure to social

users within their social circles, non-social users cited mass media as a significant factor shaping their negative impressions of such interactions. By contrast, social users tend to overestimate the positive emotions of non-social users, and this was amplified among those with frequent ingroup interactions with other social users. These findings lay a foundation for future in-depth research and offer insights to address these discrepancies while helping to prevent further polarization and stereotyping of social interactions with AI.

2 Current Study

2.1 Research Questions

In the current study, we conducted an online survey to address the gaps identified in Section 1, focusing on negative attitudes, their shaping factors, and perceptual discrepancies. The specific research questions are:

RQ1: What feelings are evoked when non-social users think of people socially interacting with conversational AI?

RQ2: Do social users' perceptions of how non-social users feel about social interactions with conversational AI align with non-social users' self-reports?

RQ3: If RQ2 identifies a perceptual gap between social and non-social users, what factors shape this discrepancy?

2.2 Defining Social Interaction

In addressing the research questions, we begin by defining social interaction in the context of human interaction with conversational AI. "Socially-oriented interactions" are typically characterized by informal, casual conversations that foster the exchange of social-emotional and affective information between users and conversational AI [4, 5, 8, 12]. Building on the synthesis of the specific scenarios of such interactions identified in prior studies[2, 19, 23, 24], we defined the following three specific scenarios under "social interaction" in our study:

- **Seeking Companionship:** Engaging in casual conversations about everyday topics, such as daily life, hobbies, interests, likes, or dislikes. *e.g. "Good morning!" "What are you up to today?"*
- **Seeking Emotional Support:** Looking for support to address emotional well-being or related needs. *e.g. "I'm feeling depressed." "I've been so tired lately."*
- **Exchanging Views:** Sharing and discussing personal perspectives. *e.g. "I don't think this movie adaptation really captures the essence of the original. What do you think?" "I think this decision is unfair. What's your opinion?"*

Notably, certain behaviors were not classified as "social interaction" in our study. First, expressing polite gratitude or frustration while completing a task does not meet our definition of "social interaction." While these utterances have a social aspect, they are often formulaic and lack genuine interaction or the exchange of social-emotional and affective information. Entertainment-driven behaviors, such as using conversational AI to generate amusing or funny responses, were also excluded, for such behaviors primarily treat AI as a tool for amusement rather than engaging with it

as a social presence. These distinguishments align with existing literature on interaction motivation taxonomy[2, 19].

3 Method

We conducted an online survey with 67 participants: 40 who identified as having socially interacted with conversational AI ("social users"), and 27 who did not ("non-social users"). These groups were identified through a screening survey before the main survey. Survey participants were recruited through Prolific.com, and data was collected between November and December 2024. This study was approved by our institution's ethical review board.

3.1 Recruitment and participants

3.1.1 Screening survey. An online screening survey was conducted to identify social users and non-social users. We targeted participants aged 18–25, residing in the USA, with English as their first language and holding student status. Our decision to control for demographic variables such as age, cultural context, and occupation was informed by prior studies showing these factors influence attitudes toward AI [12, 16, 22].

Screening survey participants reported whether they had used conversational AI in general. They were then provided with a description of "social interaction with conversational AI," as outlined in Section 2.2. Participants indicated which types of interactions they had with conversational AI. Those who engaged in at least one social interaction were categorized as "social users," while those who did not were categorized as "non-social users." In order to compare perspectives from people with social and non-social interaction styles with conversational AI, 5 participants were excluded because they had never used conversational AI. Among the remaining participants, 133 were categorized as "social users," and 61 as "non-social users."

3.1.2 Main survey. We randomly invited 40 social users and 40 non-social users to the main survey. During a double-check of participants' descriptions of their interactions with conversational AI, 13 participants from the non-social user group were removed for changing their responses. As a result, we collected 40 valid responses from the social user group (55% men, $N=22$; 45% women, $N=18$; age range: 18–25, $M=22$, $SD=2.21$) and 27 valid responses from the non-social user group (26% men, $N=7$; 74% women, $N=20$; age range: 18–25, $M=22.22$, $SD=2.29$).

Among social users, the most commonly used conversational AI was ChatGPT ($n = 29$), distantly followed by Meta AI (5), Snapchat AI (4), Alexa (2), Gemini (2), Character.AI (2), Siri (1), and Janitor AI (1).

To confirm the premise of the study, based on prior research indicating that non-social users have negative impressions of social interactions with conversational AI, we measured participants' overall perspectives using an adapted version of the ATTARI-12 scale[22], which measures attitudes towards AI. We modified the scale items by replacing "AI" with "social interactions with conversational AI." The scale measures cognitive, affective, and behavioral dimensions of participants' attitudes, rated on a scale from 1 = *Strongly Disagree* to 5 = *Strongly Agree*, and includes 12 statements like, "Social interactions with AI will make this world a better place." The full scale is described in the Appendix, in Table 1.

The non-social user group scored lower across all dimensions (Cognitive: $M=2.31$, $SD=0.77$; Affective: $M=2.24$, $SD=0.61$; Behavioral: $M=1.68$, $SD=0.64$) compared to the social user group (Cognitive: $M=3.90$, $SD=0.77$; Affective: $M=4.09$, $SD=0.75$; Behavioral: $M=3.76$, $SD=0.88$). A Mann-Whitney U test confirmed that these differences were statistically significant across all dimensions ($p < .01$). The non-social user group consistently scores below the neutral point of 3 (*Neither Agree nor Disagree*) and had particularly low scores on the Behavioral dimension. This suggests that the non-social user group does not merely lack interest in social interactions with conversational AI but instead holds a negative attitude and appears to actively avoid such interactions.

3.2 Main survey design

The main survey had two sections. The first section measured the evoked feelings of non-social users and examined social users' perceptions of those feelings. The second section investigated factors that influenced those perceptions, including personally knowing other people who use conversational AI socially and media influences.

3.2.1 Measuring Evoked Feelings. We used the 20-item *Positive and Negative Affect Schedule* (PANAS) [27] to assess non-social users' feelings about people interacting socially with conversational AI, as well as social users' perceptions of non-social users' reactions. Participants in the non-social user group were asked: "How do you feel when thinking about others socially interacting with conversational AI?" Meanwhile, participants in the social user group were asked: "How do you think people who do not socially interact with conversational AI feel about others who do?"

The *Positive Affect* (PA) words were: 'interested,' 'excited,' 'strong,' 'enthusiastic,' 'proud,' 'alert,' 'inspired,' 'determined,' 'attentive,' and 'active.' The *Negative Affect* (NA) words were: 'distressed,' 'upset,' 'guilty,' 'scared,' 'hostile,' 'irritable,' 'ashamed,' 'nervous,' 'jittery,' and 'afraid.' Responses were rated on a scale from 1 (*not at all*) to 5 (*extremely*).

3.2.2 Factors Shaping Perceptual Discrepancies. Research indicates that people's attitudes toward AI are affected by those around them [21]. Building on this, we investigate whether feelings about social interactions with conversational AI are influenced by the presence of social users in people's social circles. Participants were asked: "Among the people you personally know, how many do you know socially interact with conversational AI?" with response options: No one, A few (*1–3 people*), Several (*4–7 people*), and Many (*8 or more people*).

Additionally, perceptions of AI are influenced by mass media such as news, fictional works, and social media [11, 13]. We propose that media may also shape perceptions of social interactions with conversational AI specifically. To investigate this, we asked an open-ended question to the non-social user group: "Please share specific examples of news articles, social media posts, fictional works, or other mass media sources you have encountered about people socially interacting with conversational AI. What message did this example convey about such interactions, and how did it make you feel?"

4 Findings

4.1 Feelings Evoked Among Non-Social Users

To address RQ1, we compared non-social users' *Positive Affect* (PA) and *Negative Affect* (NA) scores. A Wilcoxon signed-rank test revealed that the non-social user group's PA score ($M = 1.52$, $SD = 0.75$) was significantly lower than their NA score ($M = 1.93$, $SD = 1.16$) ($p = .03$). This suggests that the non-social user group mainly had negative emotional reactions when considering interactions with conversational AI.

To examine this further, we analyzed the intensity of specific feelings reported by the non-social group. The highest mean scores are linked to negative feelings, such as "distressed," "nervous," "afraid," and "scared," which highlight the primary emotions contributing to the overall negative perceptions. In contrast, positive feelings like "enthusiastic," "inspired," "proud," and "determined" have notably lower scores, reflecting minimal or absent positive associations.

4.2 Perception Alignment Between Social and Non-Social Users

To address RQ2, we used a Mann-Whitney U test to compare social users' ratings of others with non-social users' self-ratings of their feelings when thinking about social interactions with conversational AI. For the *Positive Affect* (PA) dimension, social users' out-group ratings had a mean score of $M = 2.57$, $SD = 1.22$. This was significantly higher than non-social users' self-ratings ($U = 218.5$, $p < .01$), suggesting that social users tend to overestimate the positive feelings experienced by non-social users. This highlights that social users overestimate non-social users' positive emotions regarding social interactions with conversational AI.

For the *Negative Affect* (NA) dimension, the out-group ratings by social users had a mean score of $M = 1.88$, $SD = 1.10$. No significant difference was found between the two groups' ratings ($U = 563.5$, $p = .77$). This indicates that social users' perceptions of non-social users' negative feelings closely align with the self-reports of the latter. Such alignment suggests that social users have a relatively accurate understanding of the negative emotional states associated with non-social users within the context of public discourse surrounding their behavior.

A Mann-Whitney U test was conducted for each feeling item's paired scores. To account for multiple comparisons, p-values were adjusted using the Bonferroni correction, setting the significance threshold to $p_{\text{adjusted}} = .0025$. The results revealed highly significant differences in six *Positive Affect* (PA) items: Excited ($U = 219.0$, $p = .000$), Enthusiastic ($U = 228.0$, $p = .000$), Proud ($U = 213.5$, $p = .000$), Inspired ($U = 153.0$, $p = .000$), Determined ($U = 195.0$, $p = .000$), and Active ($U = 273.0$, $p = .000$). In contrast, no significant differences were found in any of the *Negative Affect* (NA) items.

4.3 Factors Influencing Perceptual Discrepancy

To address RQ3, which explores the factors shaping the perceptual gap between social and non-social users regarding social interactions with conversational AI, our findings unveiled the influence of two key factors: the presence of known individuals engaging with conversational AI and exposure to mass media.

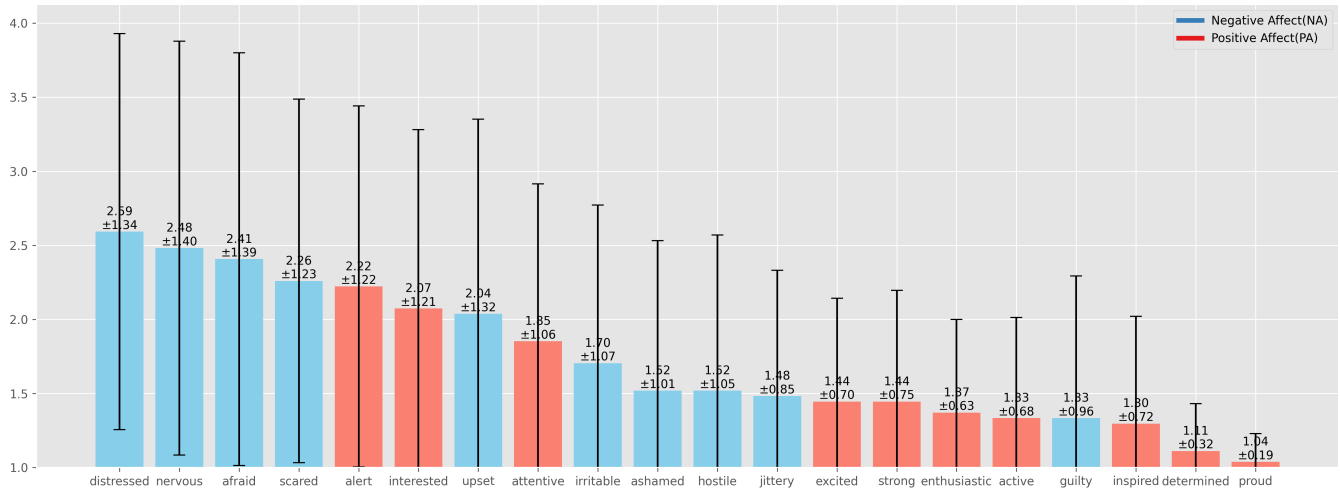


Figure 1: Intensity of feelings evoked among non-social users when thinking about others interacting socially with conversational AI. The items are displayed in descending order of their mean scores. Red bars indicate items from the PA dimension, while blue bars represent those from the NA dimension. The y-axis represents the Likert-scale response options, ranging from 1 (*not at all*) to 5 (*extremely*).

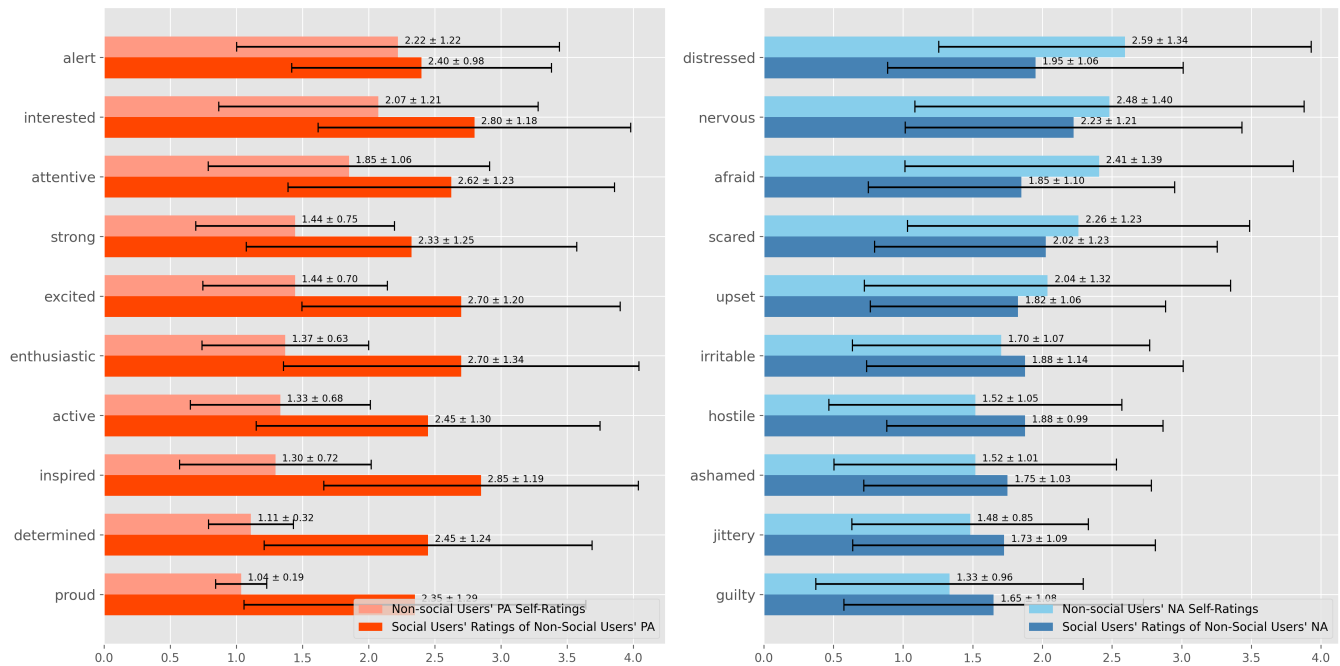


Figure 2: Comparison of social users' out-group ratings of non-social users' feelings with non-social users' self-ratings about others interacting socially with conversational AI. Red bars in the left-hand figure represent *Positive Affect (PA)*, and blue bars in the right-hand figure represent *Negative Affect (NA)*. For each specific feeling, lighter bars, positioned above, indicate non-social users' self-ratings, while darker bars, positioned below, represent social users' out-group ratings of non-social users' feelings.

4.3.1 Influence of Known Individuals. To explore participants' exposure to individuals who socially interact with AI, our survey asked: "Among the people you personally know, how many do you

know socially interact with conversational AI?". Responses were coded as follows: 1 = *No one*, 2 = *A few (1–3 people)*, 3 = *Several (4–7 people)*, and 4 = *Many (8 or more people)*, with higher scores

indicating a greater number of known individuals who socially interact with conversational AI.

A Mann-Whitney U test was performed to compare the number of known individuals between social users ($M = 2.55$, $SD = 1.04$) and non-social users ($M = 1.41$, $SD = 0.57$). The test revealed a strong significant difference ($U = 206.5$, $p < .01$), indicating that social users are more likely to know people who socially interact with conversational AI compared to non-social users. Notably, the majority of non-social users reported knowing *No one* (17 participants), while a smaller number knew *A few* (9 participants), and only one participant reported knowing *Several*. This highlights that a substantial proportion of the non-social group is unaware of anyone who socially interacts with conversational AI in their social circles.

To further explore the impact of the number of known individuals, we analyzed the association between people's feelings toward social interactions with conversational AI and the number of known individuals. A Spearman's rank correlation showed a moderate positive relationship ($\rho = 0.34$, $p = .03$) between the number of individuals indicated by the social users and their out-group ratings of non-social users' PA. The result suggests that, for social users, those who know more individuals who socially engage with conversational AI tend to hold more positive expectations about the emotional experiences of non-social users.

4.3.2 Influence of Mass Media Exposure. We examined non-social users' exposure to mass media and found that nearly all (26 out of 27, or 96.3%) encountered sources such as social media posts, news articles, or fictional works about social interactions with conversational AI at least once a year. Additionally, 63% (17 out of 27) report frequent exposure, encountering such media at least once a month. This suggests that topics related to social interactions with conversational AI are widely covered in mass media, likely influencing people's perceptions and attitudes toward this practice.

To gain deeper insights into how mass media shapes non-social users' impressions, we included an open-ended question: "Please share specific examples of news articles, social media posts, fictional works, or other mass media sources you have encountered about people socially interacting with conversational AI. What message did this example convey about such interactions, and how did it make you feel?" After excluding 7 responses that reported no specific examples, we analyzed the remaining 20 responses, categorizing them into four valence categories: positive, negative, mixed (both positive and negative), or neutral (neither positive nor negative). Among these, 12 responses were categorized as Negative, 0 as Positive, 1 as Mixed, and 7 as Neutral. This pattern reveals that mass media examples predominantly evoked negative impressions among the non-social user group.

The specific types of mass media mentioned included social media (7 examples from platforms like TikTok, YouTube, Reddit, and Snapchat), news (4 references from outlets such as Fox and CNN), fictional works (4 mentions of movies), and commercials (3 examples of TV commercials and commercials on Amazon and Google).

In the negative responses (including the negative aspects of mixed responses), some non-social users described encountering content about general social interactions between humans and AI,

while others highlighted examples of people forming deep emotional connections or discussing relationships with AI. The most frequently reported emotion elicited by these examples was sadness. One participant shared, "It made me feel sad that the only 'person' he felt comfortable talking with was an AI." Additionally, some participants expressed concerns about AI replacing human-human relationships, as one noted, "It kind of makes me feel scared because I think that human-to-human interactions and community are so important, and this might put a dent in that." Others viewed individuals who interact with AI as socially isolated or lonely due to a lack of real-world connections: "It seems that he really relied on this chatbot for social interactions, and it was his way of not feeling alone." Further reactions included perceiving AI as inauthentic—"It made me feel uncomfortable with the fact that people are getting so comfortable with this technology even though it has no human behind it"—and expressing emotions such as fear, discomfort, and unease, describing the interactions as "scared," "weird," "creeped out," and "unsettling."

In addition to the negative reactions mentioned above, a few responses indicated that the news they encountered left them feeling intrigued and motivated to explore the topic of AI-human social interactions further. Some participants expressed indifference and neutral attitude, noting as bystanders that "people tend to really enjoy it," while others felt that such interactions were acceptable as long as they were "used for constructive and intelligent purposes."

5 Discussion

5.1 Reflections on Key Findings

We found that non-social users had predominantly negative feelings towards social interactions with conversational AI. Fear and anxiety-driven emotions, such as "distressed," "nervous," "afraid," and "scared" were the more prominent, which is consistent with psychological literature describing similar reactions to unfamiliar and uncertain phenomena [3, 6]. This suggests that social interactions with conversational AI remain a novel and unfamiliar concept to non-social users.

Further supporting this interpretation, our findings indicate that most non-social users are not exposed to social conversational AI use from anyone in their social circle. Instead, they generally rely on mass media to shape their opinions, which contributes to overwhelmingly negative impressions.

In contrast, social users are embedded in social circles that include significantly more individuals who engage in similar practices. Frequent interactions with similar individuals further contribute to an overly optimistic view of how non-social users feel about these practices. This phenomenon can be described as a positive meta-stereotype [26], where social users assume that non-social users hold more favorable opinions of social interaction with AI than they actually do. Unlike negative meta-perceptions, which can exacerbate intergroup conflict [10], positive meta-stereotypes have the potential to facilitate intergroup interactions by reducing concerns about social acceptance [25]. However, this overly optimistic perception may also create misunderstandings and misalignments in interactions between social and non-social users. Therefore, further research is needed to examine how these imbalanced perceptions

of social chatbot use might shape interactions and dynamics between these two groups, as well as their broader implications for intergroup relations.

5.2 Limitations and Future Work

This study has several limitations. Our sample primarily consisted of U.S. students aged 18–25, but attitudes towards AI may vary significantly depending on factors like age, occupation, and cultural background [12, 16, 22]. Future work should include a more diverse pool of participants.

Additionally, relying on survey data may introduce participant bias. For instance, individuals who strongly avoid social interaction with AI might have been less likely to participate, potentially skewing the results. Surveys are also limited in their ability to capture nuanced contexts or uncover deeper underlying reasons, highlighting the need for complementary methodologies in future research.

Future research can extend this study's results by (1) Employing qualitative methods, such as in-depth interviews, to uncover nuanced insights into the factors underlying negative attitudes and identify opportunities to improve perceptions of social interaction with conversational AI. (2) Investigating ways to reduce stigma and perception gaps between social and non-social users, such as interactions with social users, or AI chatbots [9] representing out-group members, which intergroup social contact theory suggests can reduce stigma toward outgroup members [1, 18]. These approaches could help bridge group divides and foster acceptance. (3) Conducting experiences to examine whether engaging in social interactions with conversational AI mitigates negative attitudes among non-social users. Given their unfamiliarity with such interactions, such experiments could reveal whether direct experience reduces apprehension and improves perceptions.

6 Conclusion

This paper explores attitudes and perceptual discrepancies regarding social interactions with conversational AI. We surveyed 67 participants including 40 social users and 27 non-social users.

Our findings reveal that non-social users predominantly experience negative emotions, such as distress and fear, when thinking about social interactions with AI, and few positive emotions. Social users overestimated the positive emotions of non-social users, exposing a perceptual gap. However, both groups have a similar recognition of negative emotions.

This perceptual gap seems to be shaped by differences in personal exposure to individuals who socially interact with AI. Most non-social users did not know any social users, and among social users, knowing other people who also interact socially with AI was associated with higher perceptions of *Positive Affect (PA)* about this practice. Mass media also predominantly evoke negative feelings among non-social users through depictions in news, fiction, social media, and commercials.

As one of the first studies to examine these issues, our findings expand understanding of non-social users' attitudes, explain factors driving a perceptual gap, and lay a foundation for future work. This work highlights the need for future research to mitigate polarization and stereotyping about social interactions with AI.

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Appendices

A Modified ATTARI-12 Scale Items for Assessing Attitudes Toward Social Interactions with Conversational AI

No.	Wording	Facet	Valence
1	Social interactions with conversational AI will make this world a better place.	Cognitive	Positive
2	I have strong negative emotions about social interactions with conversational AI.	Affective	Negative (reverse-coded)
3	I want to use technologies that rely on social interactions with conversational AI.	Behavioral	Positive
4	Social interactions with conversational AI have more disadvantages than advantages.	Cognitive	Negative (reverse-coded)
5	I look forward to future developments in social interactions with conversational AI.	Affective	Positive
6	Social interactions with conversational AI offer solutions to many world problems.	Cognitive	Positive
7	I prefer technologies that do not feature social interactions with conversational AI.	Behavioral	Negative (reverse-coded)
8	I am afraid of social interactions with conversational AI.	Affective	Negative (reverse-coded)
9	I would rather choose a technology with social interactions with conversational AI than one without it.	Behavioral	Positive
10	Social interactions with conversational AI create problems rather than solving them.	Cognitive	Negative (reverse-coded)
11	When I think about social interactions with conversational AI, I have mostly positive feelings.	Affective	Positive
12	I would rather avoid technologies that are based on social interactions with conversational AI.	Behavioral	Negative (reverse-coded)

Table 1: Modified ATTARI-12 scale items for assessing attitudes toward social interactions with conversational AI, with "AI" in all items replaced by "social interaction with conversational AI".