



Research on the Impact of Generative AI-Mediated Communication on Interpersonal Trust

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Abstract. With the development of generative artificial intelligence, generative AI-Mediated communication (AIMC) is profoundly changing the interaction mode in the workplace. This study mainly explores the impact of generative AI (AIMC) on interpersonal trust and social anxiety in multiple dimensions. This study has specifically analyzed the two different development modes of cognitive trust and emotional trust. The study found that AI can not only act as a "catalyst for improving efficiency" but also as an "obstacle to emotional communication" in communication. In terms of trust, AI improves the ability assessment of the sender by optimizing logic and professional expression, thus stabilizing cognitive trust. However, because the text generated by AI lacks personalized emotional and non-verbal signals, it reduces the "realism" in communication and systematically destroys the emotional trust based on care. Especially when the use of AI is not transparent enough, the recipient often doubts the sender's sincerity. In terms of social anxiety, AI can provide "social templates" for people with weak social skills to relieve communication pressure in the short term. However, long-term over-reliance on AI will lead to the shrinkage of personal emotional expression ability, exacerbating long-term social isolation and anxiety. Therefore, organizations should establish a mechanism of "task and technology matching": use AI to improve efficiency in transactional tasks, but when it involves high emotional demand scenarios such as employee care and conflict handling, manual leadership should be adhered to. At the same time, the establishment of a transparent AI disclosure mechanism will help reduce suspicion.

Keywords: Generative AI-Mediated Communication (AIMC), Interpersonal Trust, Received Authenticity, Social Anxiety, Workplace Collaboration

1 Introduction

In today's wave of digital collaboration, Generative AI, represented by ChatGPT, is reshaping the human communication paradigm. This emerging model, known as Generative AI-Mediated Communication (AIMC), not only changes the efficiency of information transmission, but also triggers the "depersonalization" phenomenon of workplace interaction in the deep psychological dimension. The traditional interpersonal

trust model is based on long-term, face-to-face emotional communication and behavioral observation, and the intervention of AIMC makes this model face an unprecedented impact.

Recent research shows that people in different fields are becoming more open to using AI. For example, Garcia and Kim found that in the field of education, students' intentions to use generative AI are very high [1]. This widespread acceptance in society sets the stage for AI's entry into the workplace. As Thompson pointed out, AI is evolving from a simple information tool to an "information trustee", which has caused the rift of trust between people to begin to emerge [2]. In the organizational environment, employees increasingly rely on AI to optimize emails, write reports and even deal with conflicts. Although this method enhances the professionalism of the text, it also triggers a core proposition: when the other party to the communication realizes that the information is generated by algorithms, is the original trust foundation still stable? The research of Chen and Zhang shows that although AI is a tool to improve the efficiency of trust building, its impact on the "depersonalization" of traditional interpersonal relationships cannot be ignored [3].

The purpose of this study is to explore the multi-faceted impact of AIMC on interpersonal trust, especially to observe how cognitive trust and emotional trust move towards different paths. Specifically, this study takes "perception of authenticity" as a core intermediary mechanism to explain how the intervention of AI reconstructs these trust dimensions. At the same time, this study will also focus on the "double-edged sword" role played by AI in social anxiety. This study will analyze AI as a "social compensation" tool. Although it can relieve anxiety in a short time, it may lead to the deterioration of social skills in the long run. Understanding these mechanisms is of great theoretical and practical significance for enterprises to balance technical efficiency and humanistic care when promoting the digital transformation of AI.

2 Core Concepts

2.1 Generative AI-Mediated Communication, AIMC

Generative AI-Mediated Communication (AIMC) refers to the intermediary expression of using artificial intelligence algorithms (such as large-scale language models) to generate, optimize or modify communication content in the process of interpersonal interaction. Unlike traditional computer-mediated communication (CMC), the core feature of AIMC is its algorithmic generation, that is, AI is not only a channel for the transmission of information, but also a "co-creator" or "proxy sender" of content.

In this mode, communication shows the following three prominent characteristics:

Standardization: AI can output texts that meet workplace norms and grammar standards according to general logic and corpus, reducing the arbitrariness of personal expression.

High efficiency: Through preset instructions, the sender can generate complex replies in a very short time, which greatly reduces the time cost of communication.

Low richness: Although the generated text is logical, it often lacks the depth of social and emotional information. Because there are no non-verbal clues and the inability to

perceive the nuances of highly personalized contexts, AI often cannot fully convey the sender's true intentions or subtle emotions.

2.2 Two Dimensions of Interpersonal Trust: Cognitive Trust and Affective Trust

In the field of organizational behavior and social psychology, interpersonal trust is not a single concept, but consists of two complementary dimensions:

Cognitive Trust: This is a rational assessment. The receiver judges whether it is trustworthy based on the sender's ability, reliability and specialization level. In workplace collaboration, this trust mainly depends on whether the individual can complete the task efficiently and accurately.

Affective Trust: This is a form of emotional connection rooted in the benevolence, integrity, and mutual emotional resonance demonstrated by both parties during their interaction. It serves as the cornerstone of deep interpersonal relationships and long-term teamwork, emphasizing the "psychological distance" between individuals.

2.3 Perceived Authenticity

Perceptual authenticity is defined as the degree to which the recipient believes that the content of communication represents the sender's true intentions, unique personality and spontaneous emotions. In the environment where AI intervenes, authenticity no longer only refers to the truth of the truth, but also to the "source of intention". Once the recipient realizes that the content is preset or algorithmically generated, their evaluation of the sender's efforts and sincerity will be biased. This lack of realism is considered to be the significant reason for the crisis of interpersonal trust caused by the intervention of AI.

3 Generative AI and Social Trust

3.1 The Phenomenon of "Dimensional Separation": the Dual Impact of AI On Trust

When generative AI intervenes in interpersonal communication, the impact on trust presents a unique phenomenon of "dimensional stripping". The study found that the intervention of AI does not completely destroy trust, but has a diametrically opposite effect on different dimensions of trust. It maintains and even enhances cognitive trust by enhancing the professionalism of information, but it forms a systematic erosion of emotional trust by diluting the "human flavor" of communication.

3.2 The Stability of Cognitive Trust: AI As an Efficiency Catalyst

In workplace and instrumental task circumstances, the text generated by AI tends to show higher logic and professionalism, which helps to consolidate cognitive trust.

Professional perception: Chen and Zhang's empirical study of 1,637 respondents shows that the text generated by AI-assisted can effectively maintain the recipient's positive evaluation of the sender's "competence" because of its clear structure and professional words [3].

Instrumental efficiency: When handling procedural and structured tasks (such as sending schedule notifications, writing technical summaries), the high efficiency demonstrated by AI can be transformed by the recipients into an acceptance of the "reliability" of the sender. Patel further pointed out that when users have a clear expectation of AI assistance, high-quality generated content can enhance their trust in the system [4]. This systematic trust may subsequently be attributed to the reliability and capabilities of the human sender, thereby effectively strengthening the recipients' cognitive assessment of the collaborator.

3.3 Erosion of Affective Trust: AI as an Emotional Blocker

However, when communication moves into the unstructured and highly emotional domain, the negative impacts of artificial intelligence begin to emerge.

Sincerity deficit: Murtinu and De Massis demonstrated through experimental data that AI has inherent flaws in establishing emotional connections [5]. When leaders use AI to handle tasks such as team motivation, individual consolation, or conflict resolution, the recipients often feel a "mechanized" treatment, resulting in a lower evaluation of sincerity.

The use of AI will also damage the credibility of the sender. Majerova, Nadanyiova and Patik believe that although AI content is logically clear, it often faces challenges in perceiving trust and reliability [6]. If the recipient feels that the content is not personalized enough, the emotional connection will be weakened. Specifically in the workplace, scientific reports show that AI-written emails may quietly undermine the trust between colleagues [7]. Patel further pointed out that when users have clear expectations for AI assistance, high-quality generated content can enhance their trust in the system [4]. However, the reduction of this perceived effort will directly weaken the emotional trust based on care.

3.4 Intermediary Path and Adjustment Effect of Perception of Authenticity

The study pointed out that one of the main reasons for the decline in perception authenticity is that the recipient found the intervention of AI without prior explanation. Once this use lacks transparency, the perception of authenticity will play a key intermediary role in the whole process.

Lee and Smith found that once the intervention of AI is made public or recognized, the perceived authenticity of the recipient will decrease significantly, resulting in a decrease in their evaluation of the sender's "sense of care" [8]. Brüns and Meißner also found that using generative AI to create content can reduce people's perception of authenticity [9]. When the recipient knows that AI is used, they will feel that this message does not represent the sender's true self. This "unrealistic sense" will make the recipient doubt how much of the real emotion behind each sentence of the sender is true and how much is the result of algorithm modification.

The adjustment effect of task type: The influence of AI on trust is subject to the nature of the task. The consistent conclusion of the existing literature shows that AI is a weapon to improve "efficiency", but in research involving "interpersonal interaction", conflicts often stem from the mismatch between technology and emotional needs. When dealing with complex conflicts or deep socialization, if users cannot maintain the

image of their "true self" through AI, the construction of their social trust will be hindered.

3.5 Summary: Towards "Depersonalization of Trust"

In summary, AI plays the dual role of "efficiency catalyst" and "emotional blocker" in interpersonal communication. With the popularity of generative AI, the construction model of interpersonal trust is undergoing a profound transformation: people are changing from a "whole-person trust" based on comprehensive interaction to a "depersonalized trust" based on algorithmic efficiency and logic standards. Although this transformation increases the speed of collaboration, it may come at the expense of the deep connection of human emotions.

4 Generative AI and Social Anxiety

4.1 Short-term Improvement of Social Efficiency: AI as a Social Compensation Tool

For many people who face social pressure in the workplace, generative AI provides a "social script" that can effectively lower the threshold for communication. The study found that for users with weak social skills or low self-efficacy, AI-assisted writing emails or instructions can significantly reduce their psychological burden of worrying about improper wording. This auxiliary effect can temporarily improve users' social self-confidence in the workplace and make them more willing to participate in necessary administrative tasks, although this may lead to reliance on technology in the long run.

4.2 Alienation and Long-term Risks of Psychological Connection

However, this kind of social compensation may have a hidden price. Boyd and Markowitz discussed the deep psychology of human connection in the era of artificial intelligence [10]. They believe that when individuals rely too much on AI to replace real self-expression, there will be a kind of "pseudo-connection" between people. This means that although messages are sent and received, the real emotional bond is missing. When a person habitually lets AI handle social tasks, their ability to feel and show true emotions may deteriorate over time. This phenomenon will make individuals feel more isolated. When they finally face real social situations that AI can't help, their social anxiety and loneliness may be more serious than before.

4.3 Deterioration of Task Complexity and Anxiety

The impact of AI on social anxiety is also related to the difficulty of communication tasks. Research by Han and Ko shows that task difficulty and AI design play an important role in user experience [11]. In social tasks that are extremely complex or involve sensitive conflicts, relying on AI may lead to "state anxiety". This is because users are worried that AI may not be able to understand the subtle emotional needs in the situation. They are also worried that losing their "autonomy" or control over the dialogue will make them look incompetent. If users feel that they cannot maintain a strong and capable image through AI, or are worried that the other party will see that

the content of AI is not sincere, their anxiety level will rise rapidly. Liu and others further pointed out that in an environment that requires a high degree of emotional resonance, senders often develop a defensive attitude and fall into a deeper cycle of social fear [12].

4.4 The Transformation from State Anxiety to Characteristic Anxiety

In research design, it is very important to distinguish between "state anxiety" and "trait anxiety". Current evidence shows that the use of AI for text retouching can usually effectively alleviate the "state anxiety" in a single communication task; but in the long run, if the pattern of this behavior is solidified, the excessive intervention of AI will aggravate the individual's "characteristic anxiety", causing it to show more withdrawal behavior in long-term relationships. And the real social ability deteriorates.

5 Discussion and Suggestion

5.1 The Overall Conclusion of the Current Research: the Paradox of Trust and the Lack of Authenticity

Based on the existing literature, generative AI has triggered a significant "trust paradox" in interpersonal communication. On the one hand, AI stabilizes the "cognitive trust" based on ability by optimizing logic and professional expression; on the other hand, its "depersonalization" characteristics systematically erode the relationship-based "affective trust" by weakening the core path of "perceiving authenticity". This erosion of emotional trust is especially evident in unstructured tasks that require high emotional investment, such as motivating teams, expressing care for employees, and dealing with interpersonal conflicts.

5.2 Practical Enlightenment: Accurate Matching of Tasks and Technology

In organizational management, a clear guide to the use of AI should be established. The core principle is to achieve the accurate matching of "task and technology".

Give full play to the efficiency advantages of AI: Employees should be encouraged to use AI when handling procedural and instrumental tasks (such as reporting work progress, summarizing data, writing technical summaries, etc.). This can not only improve the professionalism of expression, but also improve the overall efficiency of collaboration.

Prioritize Human-Led Interaction: In scenarios involving employee psychological support, social care and deep emotional connection, communication should be mainly led by manual. In these contexts, AI can only be used as a tool to assist in thinking or drafting the first draft, and should not directly act as the generator of the final content. This is done to ensure that the emotional bond between team members remains intact.

5.3 Establishment of a Transparent Disclosure Mechanism

Research shows that one of the main reasons for the damage to "perceptual authenticity" is the recipient's "unexpected perception" of AI intervention. Lee and Smith pointed out that establishing a transparent AI use of a declaration mechanism may alleviate this sense of distrust [5]. When the two sides of the communication have a clear expectation

of the auxiliary role of AI, the recipient is more inclined to regard it as an efficiency tool than the sender's "lack of sincerity", which helps to build a healthy "human-machine-human" collaboration model.

5.4 Future Research Direction

Although the current quantitative research has initially revealed the impact of AIMC on trust, there are still limitations. Future research should focus on the following directions:

The regulating effect of a priori trust: explore how the original relationship basis of the communication parties (such as old colleagues and new partners) can adjust the impact of AI on trust.

Vertical tracking research: Through longitudinal studies, researchers should investigate whether prolonged reliance on AI for communication leads to the degradation of specific social competencies—such as empathy, active listening, and conflict navigation—and consequently fosters a broader sense of interpersonal alienation.

6 Conclusion

This study systematically sorts out and analyzes the profound transformation of interpersonal communication patterns after the intervention of generative AI. Research shows that as the core engine of AIMC, generative AI shows the dual attributes of "efficiency catalyst" and "emotional blocker". Although generative AI can effectively maintain cognitive trust based on professional ability, it will also pose a threat to emotional trust by reducing the "perceptual authenticity" of communication. Under such a technological background, the construction model of interpersonal trust is changing: from the traditional "whole-person trust" based on comprehensive interaction to a "depersonalized trust" based on algorithmic efficiency and logic standards. Although this change accelerates the pace of collaboration in the workplace, it may also come at the expense of deep human emotional connections. The theoretical significance of this article is that it extends the theory of media richness and the theory of task-technology matching to the AI era. This study emphasizes how the content generated by the algorithm introduces a new type of "pseudo-richness", which separates the clarity of information from social emotional signals.

In the era of artificial intelligence, building a healthy trust environment requires not only the continuous progress of technology, but also human beings to retain the sincerity and care that algorithms cannot replace. Organizations can achieve a sustainable balance between collaborative efficiency and true human care only when the role of technology is to amplify rather than replace human expression.

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