WEP Warwick Evans Publishing

International Journal of Global Economics and Management

ISSN: 3005-9690 (Print), ISSN: 3005-8090 (Online) | Volume 10, Number 2, Year 2026
DOI: https://doi.org/10.62051/ijgem.v10n2.18
Journal homepage: https://ijgem.org

The Impact of AIGC's Emotional Expression on Consumer Service Evaluation in Service Failure Contexts: The Mediating Role of Expectation Disconfirmation

Min Tang

School of Economics and Management, Chongqing Jiaotong University, Chongqing, China

ABSTRACT

With the widespread application of generative artificial intelligence (AIGC) in the service sector, its performance in service failure scenarios has become a key focus for both academia and practice. Based on Expectation Disconfirmation Theory, this study employs a scenario-based experiment to investigate the impact of AIGC's level of emotional expression (high vs. low) on consumer service evaluations in service failure contexts, as well as the underlying mechanism. The results show that compared to AIGC with low emotional expression, AIGC with high emotional expression triggers more negative service evaluations from consumers when a service failure occurs. Further mechanism analysis reveals that expectation disconfirmation plays a key mediating role: high emotional expression elevates consumers' initial expectations, and when a service failure occurs, the significant expectation gap (i.e., negative disconfirmation) is the fundamental reason for the decline in service evaluations. This study reveals the "double-edged sword" effect of AIGC's anthropomorphic strategy in service failure contexts, deepens the understanding of the boundary conditions of emotional expression in human-computer interaction, and provides important theoretical and practical insights for enterprises to optimize AIGC service design and implement effective expectation management and service recovery.

KEYWORDS

AIGC; Emotional expression; Service failure; Service evaluation; Expectation disconfirmation

1. INTRODUCTION

With the deepening of the intelligent technology revolution, artificial intelligence has transitioned from theoretical concepts to widespread adoption, increasingly integrating into consumers' daily lives. Since the launch of ChatGPT in late 2022, generative artificial intelligence (AIGC) technology has developed rapidly, with exponential growth in applications such as content communication, assisted design, and personalized customization. This has not only significantly improved service efficiency but also gradually reshaped consumer behavior patterns and decision-making processes [1]. In this trend, more and more enterprises are endowing AIGC with higher anthropomorphic and emotional characteristics through appearance design and language packaging, aiming to enhance interactive experiences, increase user engagement, and further promote the development of human-computer interaction toward naturalization and emotionalization.

However, technological advances have not eliminated the risk of service failures. When a service failure occurs, what impact will the highly emotional AIGC carefully constructed by enterprises have—will it alleviate user dissatisfaction or exacerbate negative experiences? Existing research has mostly focused on AIGC's performance in normal interaction contexts, with insufficient exploration of its impact mechanisms in service failure scenarios. Particularly under the "Computers Are Social

Actors" (CASA) paradigm, while high emotional expression enhances intimacy, it may also lead users to have higher expectations; once a service failure occurs, especially in procedural failures, this anthropomorphic advantage may transform into negative attributions of AIGC being "intentional" or "incompetent," thereby triggering stronger negative evaluations [2].

Therefore, this study focuses on the critical context of service failure, aiming to systematically explore the impact of AIGC's degree of emotional expression on consumer service evaluations in such scenarios. Based on Expectation Disconfirmation Theory, this study further reveals the underlying psychological mechanism to address the gap in existing literature. The research findings not only contribute to expanding the understanding of human-computer interaction theory in service failure contexts but also provide practical evidence and decision-making references for enterprises to optimize AIGC emotional design and implement precise service recovery.

2. LITERATURE REVIEW AND RESEARCH HYPOTHESES

2.1. AIGC's Emotional Expression and Service Failure

Emotional expression plays a critical role in interpersonal interactions and service delivery. As traditional service providers, human employees displaying positive emotions help enhance service outcomes and customer satisfaction [3]. Based on the "Computers Are Social Actors" (CASA) paradigm, this logic has been extended to the field of human-computer interaction: endowing machines with human-like emotional expression can create more natural and pleasant interactive experiences, thereby enhancing users' positive perceptions. Therefore, many enterprises strive to enhance the emotional interaction capabilities of service robots or AIGC during development, expecting to receive more positive feedback from customers [4].

However, in AIGC application scenarios, high emotional expression does not always lead to positive consumer evaluations. Due to current technological limitations, AIGC may provide irrelevant responses or fail to complete tasks when dealing with complex requests, leading to service failure—that is, instances where the service process or outcome falls below user expectations or even harms user interests [5]. In low-level service failure scenarios, highly anthropomorphic avatars can elicit a sense of disgust in consumers due to the discrepancy between the avatars' forms of expression and consumers' expectations [6].

Existing research provides some clues. In contexts where brands or products make mistakes, highly anthropomorphic designs may instead strengthen consumers' negative attitudes [7]. According to classification of brand mistakes—including mistakes related to product quality, product-related services, symbolic psychological mistakes, and controversial social behaviors—service failures fall under the category of brand mistakes. Based on this, the following hypothesis is proposed:

H1: In service failure contexts, AIGC with high (vs. low) emotional expression will lower consumers' service evaluations.

2.2. The Mediating Role of Expectation Disconfirmation

Expectation Disconfirmation Theory (EDT) provides a classical framework for understanding consumer satisfaction. The theory posits that consumer satisfaction stems from the comparison between their pre-service expectations and their perceived performance of the product or service. When perceived performance falls below expectations, negative disconfirmation occurs, leading to decreased satisfaction; conversely, positive disconfirmation enhances satisfaction [8].

In service interactions, user expectations are pre-formed beliefs based on various cues, and the characteristics of the service provider are one of the key cues shaping these expectations [9]. Specifically, in AIGC service scenarios, emotional design elements such as appearance and language

style significantly influence users' inferences and expectations regarding its service capabilities. Research shows that higher intelligence or anthropomorphic features lead users to have higher expectations of performance and reliability for service agents. However, once a service failure occurs, these elevated expectations exacerbate user disappointment and dissatisfaction, resulting in stronger negative reactions.

Based on this logic, this study infers that in service failure contexts, the degree of AIGC's emotional expression shapes users' different initial expectations, thereby triggering varying degrees of expectation disconfirmation, which ultimately affects service evaluations. Specifically, AIGC with high emotional expression, by creating a more friendly and intelligent interactive impression, tends to lead users to form higher service expectations. When a service failure occurs, the gap between the actual experience and high expectations becomes particularly significant, resulting in stronger negative disconfirmation. This psychological gap becomes an important driver of users' negative evaluations. Therefore, the following mediating hypothesis is proposed:

H2: Expectation disconfirmation plays a mediating role. Specifically, in service failure contexts, AIGC with high (vs. low) emotional expression increases expectation disconfirmation, thereby lowering service evaluations.

Based on the above analysis, the following theoretical model is proposed (Figure 1):

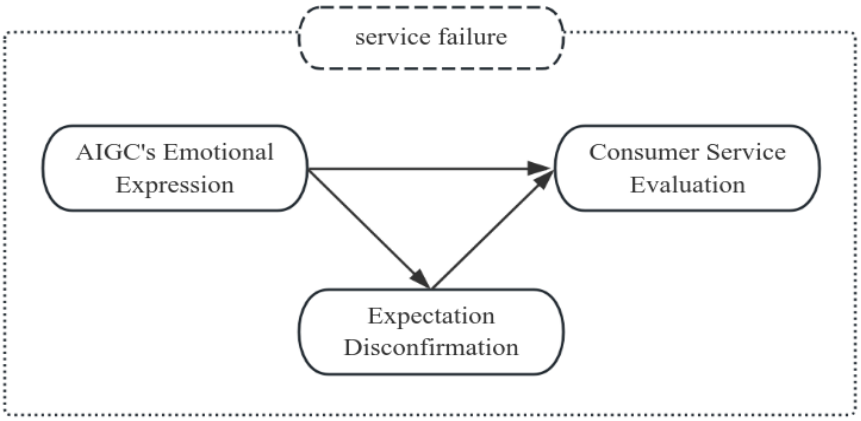

Figure 1. Research framework

3. RESEARCH METHODS

This study employs a scenario-based experiment to test the proposed hypotheses by simulating a realistic AIGC service interaction scenario. This method effectively manipulates the independent variable and controls extraneous variables, thereby clearly revealing causal relationships, and is commonly used in research examining consumer psychological mechanisms.

3.1. Experimental Design

This study adopts a single-factor between-subjects experimental design. The independent variable is the level of AIGC's emotional expression, with two levels: high emotional expression vs. low emotional expression. Participants are randomly assigned to one of the two experimental groups. All participants experience an AIGC interaction scenario that includes a service failure.

3.2. Experimental Procedure and Variable Manipulation

Approximately 300 participants with online service experience were recruited via an online experimental platform. In the experiment, all participants were instructed to engage with a scenario involving an AIGC customer service agent within a travel application for a hotel booking consultation.

The scenario uniformly incorporated a clear service failure; for instance, the AIGC recommended a hotel that failed to meet the user's core requirements (e.g., regarding specified location or budget) or provided information containing errors. The key independent variable, the AIGC's emotional expression, was manipulated between subjects. Participants in the high emotional expression condition were exposed to dialogues featuring empathetic statements, positive vocabulary, and emoticons, whereas those in the low emotional expression condition encountered responses composed of neutral, concise, and affectively flat standardized language. Following the scenario exposure, participants immediately completed an online questionnaire. This questionnaire included a manipulation check item to assess the perceived level of the AIGC's emotional expression (e.g., "I think the customer service agent's communication style was emotional"). Expectation disconfirmation was measured using a scale adapted from Oliver [8] (e.g., "The actual performance of this customer service agent was much worse than I expected"). Service evaluation was captured using established scales (e.g., "I am satisfied with the service provided by this customer service agent"). Both constructs were rated on a 7-point Likert scale. Finally, control variables such as demographic information and familiarity with AI were also collected.

3.3. Data Analysis

Following data collection, statistical analyses were conducted using SPSS software. First, an independent samples t-test was performed to verify the effectiveness of the experimental manipulation by confirming a significant difference in the perceived level of AIGC emotional expression between the two groups. Second, to test Hypothesis H1, another independent samples t-test was employed to examine whether the service evaluation scores in the high emotional expression group were significantly lower than those in the low emotional expression group. Finally, to test the mediating mechanism proposed in Hypothesis H2, a mediation analysis was conducted using the PROCESS macro (Model 4) [10]. Bootstrap sampling with 5,000 iterations was applied to assess the significance of the indirect effect, thereby examining whether expectation disconfirmation mediated the relationship between AIGC emotional expression and service evaluation.

4. DISCUSSION AND IMPLICATION

4.1. Research Conclusions

Based on the aforementioned research design and analysis, this study draws the following conclusions:

Main Effect Established: In service failure contexts, compared to AIGC with low emotional expression, AIGC with high emotional expression triggers more negative service evaluations from consumers. This supports Hypothesis H1, confirming the potential negative effect of high emotional expression during service failures.

Mediation Mechanism Verified: Expectation disconfirmation mediates the relationship between AIGC emotional expression and service evaluation. The specific path is: AIGC with high (vs. low) emotional expression leads consumers to have higher initial expectations; when a service failure occurs, the negative gap between expectations and reality (i.e., expectation disconfirmation) is larger, and this strong psychological gap is the key internal mechanism leading to lower service evaluations. This supports Hypothesis H2.

In summary, the core conclusion of this study is as follows: when an AIGC service malfunctions, its elaborately designed "highly emotional" appearance not only fails to soothe users but also raises their expectations, which in turn intensifies their disappointment and ultimately results in poorer evaluations.

4.2. Theoretical Contributions

Deepens the understanding of the boundary conditions of AIGC anthropomorphism strategies: Existing research mostly emphasizes the positive effects of AIGC anthropomorphism (e.g., emotional expression). This study shifts the perspective to the common yet underexplored context of "service failure," revealing the potential negative effects of high emotional expression, clarifying the boundaries of its positive effects, and enriching human-computer interaction theory.

Reveals the underlying psychological mechanism: By introducing Expectation Disconfirmation Theory, this study successfully elucidates the internal process through which AIGC emotional expression affects service evaluations. By verifying the mediating role of expectation disconfirmation, it provides a clear theoretical explanatory model for understanding how consumers evaluate failed service AIGC, addressing the shortcoming of existing research focusing more on external behaviors while neglecting internal cognitive comparison processes.

Connects different academic fields: This study integrates the "Expectation Disconfirmation Theory" from traditional service marketing with cutting-edge "AIGC human-computer interaction" research, demonstrating the explanatory power of classical theories in emerging technological contexts and providing a reference for subsequent cross-disciplinary research.

4.3. Marketing Implications

Prudently deploy AIGC emotional expression strategies: Enterprises should not blindly pursue high emotionalization and anthropomorphism of AIGC. In business processes with high service failure risks or low fault tolerance (e.g., after-sales consultation, troubleshooting), more restrained and professional emotional expression methods should be adopted to manage user expectations and avoid creating an impression of "overpromising."

Strengthen AIGC reliability construction and expectation management: If high emotional expression AIGC is adopted, more resources must be invested to ensure the reliability and accuracy of its service processes, fundamentally reducing the probability of failure. Simultaneously, proactive expectation management can be conducted by appropriately indicating the boundaries of AIGC’s capabilities during initial interactions.

Optimize service recovery processes: When service failures inevitably occur, the system should be able to quickly identify and initiate recovery measures. For high emotional expression AIGC, once a failure occurs, timely and smooth transfer to human customer service should be considered to prevent the accumulation of negative emotions after high expectations are dashed.

Strengthen employee training: Marketing and service teams need to understand the dual nature of AIGC emotional expression. Especially when handling customer complaints triggered by AIGC, they should be able to discern the potential psychological expectation gap behind them, enabling more effective communication and recovery.

4.4. Limitations and Future Research Directions

This study has several limitations. The experimental scenario differed from real service environments, and the relatively homogeneous sample may limit the external validity of the findings. Key variables, such as emotional expression and service failure, were simplified in their operationalization and may not fully reflect multidimensional complexities in practice. While the mediating role of expectation disconfirmation was validated, other potential mechanisms—such as attribution patterns or trust violation—were not explored. Future research could enhance ecological validity through field experiments or log analysis, examine theoretical boundaries with cross-cultural samples, refine multidimensional constructs of emotional expression and service failure subtypes, and incorporate individual traits as moderating variables. Integrating theories such as attribution theory and trust

repair theory to explore chain mediation mechanisms, along with employing longitudinal designs to track long-term interaction effects, would provide a more comprehensive understanding of the dynamics in human-AIGC service relationships.

REFERENCES

[1] Han E, Yin D, Zhang H. Bots with Feelings: Should AI Agents Express Positive Emotion in Customer Service? [J]. Information Systems Research, 2022, 34(3): 1296-1311.

[2] Choi S, Mattila A S, Bolton L E. To Err Is Human(-oid): How Do Consumers React to Robot Service Failure and Recovery? [J]. Journal of Service Research, 2021, 24(3): 354-371.

[3] Kranzbühler A M, Zerres A, Kleijnen M H P, et al. Beyond valence: a meta-analysis of discrete emotions in firm-customer encounters [J]. Journal of the Academy of Marketing Science, 2020, 48(3): 478-498.

[4] De Kervenoael R, Hasan R, Schwob A, et al. Leveraging human-robot interaction in hospitality services: Incorporating the role of perceived value, empathy, and information sharing into visitorsâ□□ intentions to use social robots [J]. Tourism Management, 2020, 78: 104042.

[5] Yam K C, Bigman Y E, Tang P M, et al. Robots at work: People prefer—and forgive—service robots with perceived feelings [J]. Journal of Applied Psychology, 2021, 106(10): 1557-1572.

[6] Broadbent E. Interactions With Robots: The Truths We Reveal About Ourselves [J]. Annual Review of Psychology, 2017, 68(1): 627-652.

[7] Xie Y, Liang C, Zhou P, et al. Exploring the influence mechanism of chatbot-expressed humor on service satisfaction in online customer service [J]. Journal of Retailing and Consumer Services, 2024, 76: 103599.

[8] Oliver R L. Effect of expectation and disconfirmation on postexposure product evaluations: An alternative interpretation [J]. Journal of Applied Psychology, 1977, 62(4): 480-486.

[9] Burgoon J K. Interpersonal Expectations, Expectancy Violations, and Emotional Communication [J]. Journal of Language and Social Psychology, 1993, 12(1-2): 30-48.

[10] Hayes A F. Introduction to mediation, moderation, and conditional process analysis: A regression-based approach [M]. New York, NY, US: Guilford Press, 2013: xvii, 507.