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What Factors Influence Citizens' Intention to Continue Using Digital Human Agents in Government Services?

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ABSTRACT

This study explores how artificial intelligence literacy and emotional feedback (affective tone, responsiveness, and emotional appropriateness) impact citizens' intention to continue using digital human agents in government services. Based on survey data from 300 citizens, the study integrates the CASA paradigm and social presence theory. The findings indicate that emotional appropriateness and affective tone fully mediate the effect of artificial intelligence literacy on citizens' intention to continue using digital human agents, while responsiveness has no significant effect. These results investigate the important role of emotional resonance and professionalism in promoting ongoing engagement with digital government services.

KEYWORDS

Artificial Intelligence Literacy, Emotional Feedback, Public Continuance Intention, Digital Human Agents, Government Services

1. INTRODUCTION

In recent years, the rapid development of artificial intelligence (AI) has transformed service delivery across various sectors, including government services (Moliner et al., 2025). One of the most revolutionary innovations in public service delivery has been the introduction of digital human agents, which are AI powered avatars designed to interact with citizens in a way that mimics human communication (Ngo et al., 2025; Zhang et al., 2025). These digital agents, commonly used in government portals, are responsible for assisting users, answering questions, processing information, and even managing complex administrative tasks. By providing round the clock access to government services, reducing waiting times, and improving accessibility, digital human agents have the potential to greatly enhance the efficiency and user experience of public service delivery (Jung & Jo, 2025; Alhasasneh et al., 2025).

However, despite the promise of these technologies, their sustained usage and long term effectiveness depend on a thorough understanding of the psychological and emotional factors that drive user engagement. As governments worldwide incorporate digital human agents as a core part of public service infrastructure, understanding the factors that drive citizens to continue using these agents

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has become particularly important. Although these agents are designed to improve service delivery, their success relies on citizen trust, satisfaction, and continued engagement. Traditional technology acceptance models mainly focus on the usefulness and ease of use of digital systems. However, with the rise of human-computer interaction technology, especially AI-driven virtual avatars, increasing recognition suggests that emotional and psychological factors such as trust, empathy, and emotional resonance play a crucial role in shaping users' intentions to adopt and continue using these systems (Kim et al., 2023; Mfumbilwa et al., 2024).

A key factor influencing user engagement is artificial intelligence literacy, which refers to the user's understanding and application of AI technology. In the context of government services, the level of AI literacy directly impacts users' trust and acceptance of digital human agents (Achmadi et al., 2025; Hu et al., 2025). Users with higher AI literacy are likely to better understand the functionalities and advantages of digital agents, increasing their intention to use these technologies. On the other hand, users with lower AI literacy may develop mistrust or discomfort with digital human agents, reducing their willingness to use them. In addition, emotional feedback plays a critical role in shaping user satisfaction and long-term engagement. Emotional feedback consists of several key dimensions, including empathy expression, affective tone, responsiveness, and emotional appropriateness (Klein et al., 2024; Guo et al., 2025). Each of these dimensions influences users' perception of their interaction with digital agents. For example, when a digital agent expresses empathy and resonates with the user's emotional state, it can foster a sense of connection and reduce frustration or alienation. Similarly, affective tone, such as the agent's voice, facial expressions, or emotional color in text, and emotional appropriateness, which refers to the relevance and suitability of emotional feedback in specific contexts, significantly impact users' emotional experience (Guo, 2025; Guo & Dong, 2024). Responsiveness, the timeliness and accuracy of the emotional feedback provided by the agent, further influences the user's perception of the agent's competence and their willingness to interact with it. The combination of these emotional factors can affect citizens' intentions to continue using digital human agents in government services. These agents are capable of eliciting positive emotional responses and providing contextually appropriate interactions (Mfumbilwa et al., 2024).

This study investigates how artificial intelligence literacy and four key dimensions of emotional feedback, namely empathy expression, affective tone, responsiveness, and emotional appropriateness, influence citizens' intentions to continue using digital human agents in government services. Specifically, this study aims to answer the following questions: First, how does artificial intelligence literacy influence users' perceptions of continued use of digital human agents? Second, which emotional factors impact the public's intention to continue using digital human agents?

2. LITERATURE REVIEW

2.1 Theoretical Foundation

This study explores the role of public social cues (such as artificial intelligence literacy) and humanoid cues (such as emotional feedback), in shaping citizens' intentions to continue using government services through digital human agents. The theoretical foundation of this paper draws on the "Computers Are Social Actors" (CASA) paradigm and social presence theory. The CASA paradigm, proposed by Reeves and Nass (1996), suggests that when computers and digital agents exhibit human-like traits, people instinctively apply social behaviors, rules, and expectations to these systems. The paradigm highlights that users not only view digital agents as tools, but also interact with them as if they were real social actors. Specifically, the public's AI literacy, as an important social cue, influences their perception of the authority, credibility, and capability of digital human agents in government services (Huang & Ball, 2024). The higher the AI literacy, the more users tend to perceive the digital human agent as professional and trustworthy, thus strengthening their trust in the agent (Pan et al., 2025). Research shows that when digital human agents exhibit behavior that aligns with social norms and professionalism, users are more likely to perceive them as trustworthy

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