


Human–Technology Interaction in Smart Hospitality Services: How Smart Service Adoption Shapes User Experience and Enterprise Innovation

Hung Sheng Chang

 <http://orcid.org/0009-0007-3750-8704>

Shih Chien University, Taiwan

Received: February 8th, 2026 | **Accepted:** April 9th, 2026

ABSTRACT

This study explores how smart service innovation reshapes human–technology interaction in technology-enabled hospitality environments. As hotels adopt smart services, understanding how users perceive and interact with these technologies becomes essential. Using smart hospitality as the context, this research examines how service innovation influences user perceptions and behavioural continuity through technology acceptance mechanisms. A survey conducted in 2025 produced 410 valid responses, analysed with confirmatory factor analysis and structural equation modelling. Results show that service innovation enhances perceived usefulness and perceived ease of use, which shape user attitudes and continued engagement. The findings emphasize that interaction quality and user perception—rather than technology alone—determine smart service success. The study contributes to technology and human interaction research by explaining how smart service design influences user cognition, acceptance, and sustained use in digital service environments.

KEYWORDS

Service Innovation, Delivery Robots, Perceived Usefulness, Perceived Ease of Use, User Attitude, Repurchase Intention

INTRODUCTION

The rapid advancement of artificial intelligence, automation, and digital transformation is reshaping how individuals interact with service environments. In technology-enabled services, innovation no longer represents only organizational change but also a transformation in human–technology interaction. As smart systems become embedded in everyday service encounters, users increasingly engage with interfaces, automated agents, and intelligent devices that mediate their service experiences. Understanding how people perceive, interpret, and respond to these systems has therefore become critical for the success of technology-enabled services.

In hospitality and foodservice contexts, smart service applications are being introduced to support operational efficiency and consistency. However, their impact extends beyond operational outcomes to the quality of user–technology interaction. Smart services alter how customers experience control, convenience, and predictability in service encounters. These systems reconfigure not only service

DOI: 10.4018/IJTHI.408725

This article published as an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>) which permits unrestricted use, distribution, and production in any medium, provided the author of the original work and original publication source are properly credited.

processes but also customer interfaces and interaction patterns, thereby shaping how users cognitively and emotionally evaluate service experiences.

Among emerging smart service applications, intelligent food delivery robots provide a valuable empirical context for examining human–technology interaction. These systems integrate artificial intelligence, Internet of Things technologies, and autonomous navigation to perform tasks traditionally handled by humans. For users, interacting with such systems involves evaluating reliability, ease of interaction, and perceived responsiveness. Prior research suggests that smart service technologies can improve service consistency and efficiency, yet their success ultimately depends on how users experience and interpret these interactions.

Despite growing adoption of smart services, existing research has largely focused on initial technology acceptance at the individual level. Many studies have examined whether users are willing to try new technologies, but less attention has been paid to how ongoing interaction experiences shape behavioral continuity. Technology acceptance should not be viewed solely as a one-time decision but as a dynamic process influenced by repeated user–system interaction. Users continuously reassess usefulness and ease of use based on their lived experiences with smart services.

From a human–technology interaction perspective, service innovation can be understood as the redesign of interaction environments where humans and intelligent systems co-create service experiences. Service innovation influences how users perceive system competence, predictability, and control. When smart services align with user expectations and cognitive preferences, they are more likely to support continued use and positive evaluations.

Accordingly, this study investigated how smart service innovation shapes user perceptions and behavioral continuity in technology-enabled hospitality contexts. Using smart service adoption as an empirical setting, the study examined how innovation influences perceived usefulness, perceived ease of use, and user attitudes as key mechanisms of human–technology interaction. Rather than treating technology acceptance as an endpoint, this research views it as part of an ongoing interaction process that determines whether users continue engaging with smart services.

By focusing on user experience and interaction quality, this study contributes to technology and human interaction research. It highlights how smart service design influences user cognition and behavioral continuity in digitally mediated service environments. These insights offer guidance for designing human-centered smart services that align technological capabilities with user needs and interaction preferences.

LITERATURE REVIEW

Food Delivery Robots

Food delivery robots represent a growing form of human–technology interaction in hospitality environments. These intelligent systems combine artificial intelligence, autonomous navigation, and Internet of Things technologies to perform delivery tasks within service spaces. From a human–technology interaction perspective, these robots function not merely as operational tools but as interactive agents that shape how users experience service encounters.

When interacting with delivery robots, customers evaluate system responsiveness, reliability, and interaction clarity. Robot-mediated delivery changes how customers perceive control, predictability, and safety in service encounters. Compared with human delivery, robotic systems offer standardized interaction patterns that reduce variability while increasing consistency. Such predictability can influence users' cognitive and emotional responses during service interactions (Byrd et al., 2021).

Beyond efficiency, delivery robots contribute to users' experiential evaluation of services. Contactless interaction, hygiene assurance, and novelty create distinctive user experiences that influence satisfaction and revisit intentions (Jain et al., 2023; Odekerken-Schröder et al., 2022). Thus, food delivery robots can be understood as socio-technical interfaces where service value emerges from the interaction between users and intelligent systems rather than from technology alone.

11 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/article/humantechnology-interaction-in-smart-hospitality-services/408725

Related Content

Radicalization and Recruitment: A Systems Approach to Understanding Violent Extremism

Anthony J. Masys (2014). *International Journal of Systems and Society* (pp. 51-65). www.irma-international.org/article/radicalization-and-recruitment/116559

From Hardware to Hardcore: Formalizing Systems with Form Theory

André Reichel (2017). *International Journal of Systems and Society* (pp. 37-48). www.irma-international.org/article/from-hardware-to-hardcore/185671

Managing Socio-Technical Integration in Iterative Information System Development Projects

Bendik Bygstad and Mikael Lind (2009). *Human Computer Interaction: Concepts, Methodologies, Tools, and Applications* (pp. 2090-2105). www.irma-international.org/chapter/managing-socio-technical-integration-iterative/22371

Intangible Heritage Management and Multimodal Navigation

Gianluigi Ciocca, Alessandro Colombo, Raimondo Schettini, Maria Teresa Artese and Isabella Gagliardi (2011). *Handbook of Research on Technologies and Cultural Heritage: Applications and Environments* (pp. 85-118). www.irma-international.org/chapter/intangible-heritage-management-multimodal-navigation/50266

Predict, Prevent, Protect: AI-Driven Early Warning Systems for Student Mental Health in Digital Learning Environments

Muhammad Usman Tariq (2026). *Supporting Digital Mental Health in Educational Environments* (pp. 229-252). www.irma-international.org/chapter/predict-prevent-protect/397226