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Adoption of AI-Enabled e-Business Platforms in Personalized Wellness Services

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Abstract

This study investigates the impact of artificial intelligence (AI)-based e-business platforms on the adoption of personalized wellness services through a literature review. While prior studies have largely focused on evaluating the effectiveness of individual applications, this research examines the interplay of technological attributes, psychological factors, and human–AI interaction at the platform level. The findings reveal three key insights. First, personalization, trust, and interaction quality emerge as critical determinants of users' intention to adopt wellness services. Second, perceived usefulness and engagement serve as mediating variables that link technological attributes to adoption intention and promote continuous use. Third, hybrid models that combine human coaching with AI demonstrate stronger potential to enhance user engagement and sustain long-term behavioral outcomes compared to AI-only services. These results contribute theoretically by extending the understanding of wellness service adoption mechanisms and offer practical implications for businesses developing AI-based platforms. Specifically, firms should focus on refining personalization algorithms, building trust through transparency and data protection, enhancing user engagement strategies, and designing hybrid service models that integrate human empathy with AI precision. Future research should validate these relationships empirically across diverse cultural and demographic contexts and different market environments to strengthen the generalizability of the findings.

Keywords: Artificial intelligence (AI), e-business platform, wellness services, technology adoption, personalization, hybrid model

JEL Classification Code : J28, M14, M54, O33

1. Introduction

Artificial intelligence (AI) is rapidly expanding beyond medicine and healthcare into the domains of e-business platforms and personalized wellness services. Whereas traditional health management services have primarily provided standardized, one-size-fits-all information, AI fundamentally transforms this paradigm by analyzing vast amounts of data in real time to deliver personalized recommendations optimized for an individual's health status, lifestyle, and psychological characteristics (Bajwa et al., 2021). This transformation is noteworthy not merely as a technological advancement but as a profound shift in users' lifestyles and consumption patterns.

For example, mobile health (mHealth) applications

have been shown to reduce hospital visits and improve users' self-management capabilities (Bo et al., 2023). Similarly, AI chatbot–based stress management programs and mental health support services for university students are emerging as complementary tools that address the limitations of traditional counseling and treatment methods (Schillings et al., 2024; Vereschagin et al., 2024).

The greatest advantage of AI-based services lies in personalization. By accumulating and learning from user data, AI systems can provide tailored feedback that not only enhances convenience but also strengthens trust and intention to continue use (Qin et al., 2024; Washington, 2025). Empirical research further demonstrates that personalized wellness applications increase user engagement and immersion, positively influencing not only short-term outcomes but also long-term habit formation (Leslie-Miller et al., 2025).

However, despite these opportunities, not all users readily adopt AI-based services. The acceptance process is influenced by multiple factors—such as performance expectancy, perceived ease of use, social influence, and facilitating conditions—which are often explained through models like the Unified Theory of Acceptance and Use of Technology (UTAUT) (Dingel et al., 2024; Su et al., 2025; van de Werken et al., 2025). Recent studies particularly emphasize personalization and trust development as pivotal drivers of users' adoption intentions (Yang et al., 2024).

Nevertheless, prior research has largely focused on the effectiveness of specific applications or single technologies (Bojic et al., 2025; Marcuzzi et al., 2024). While studies exploring the adoption of mobile healthcare technologies (Portz et al., 2024; Loughnane et al., 2025) provide valuable insights, few have examined the integration of AI, e-business platforms, and wellness service adoption from a holistic platform perspective. Given that e-business platforms function not merely as technological intermediaries but as core infrastructures for consumer–provider interaction, data-driven value creation, and personalized service delivery, such an integrated analysis is of both academic and practical significance.

Accordingly, this study aims to investigate how AI-based e-business platforms influence the adoption of personalized wellness services. Specifically, the study focuses on three key dimensions.

First, it examines the direct effects of technological attributes of AI-based platforms—such as personalization, reliability, and interaction quality—on wellness service adoption.

Second, it analyzes the mediating roles of psychological factors, including perceived usefulness, trust, and engagement, in shaping users' intentions to adopt AI-based services.

Third, it compares the differential effects between purely AI-driven services and hybrid models that integrate human coaching, thereby identifying strategic implications for future wellness service design.

By synthesizing fragmented discussions in existing literature and elucidating the mechanisms underlying service adoption at the intersection of AI, e-business, and wellness, this study seeks to make two primary contributions.

Academically, it expands the theoretical foundation of digital wellness research by integrating insights from information systems and consumer behavior. Practically, it provides actionable guidance for firms seeking to design effective AI-based wellness platforms that enhance personalization, trust, and sustained user engagement.

2. Theoretical Background

2.1. AI-Based e-Business Platforms and Wellness Services

Artificial intelligence (AI) has brought a fundamental transformation to traditional business operations, particularly by reshaping e-business platforms and introducing a new paradigm of personalized wellness services. Through advanced data analytics, AI enables the delivery of tailored health management, lifestyle enhancement, and psychological well-being services (Bajwa et al., 2021). For instance, AI-driven digital health coaching has proven effective in improving the lifestyle habits of specific groups such as university students and office workers (Bojic et al., 2025). Similarly, mobile health applications powered by AI have been found to reduce hospital visits and strengthen users' self-management capabilities, thereby generating positive socio-economic effects beyond the medical domain (Bo et al., 2023). These AI-based platforms function not merely as health management tools but as data-driven ecosystems for personalized services, creating ongoing value through continuous user interaction and feedback. Recent AI-driven recommender systems have also shown promise in promoting healthy aging and cognitive stimulation through personalized digital interventions (Hird et al., 2024; Lopez-Barreiro et al., 2024). Such studies highlight the expanding role of AI-based wellness platforms beyond physical health management to encompass mental vitality and social well-being.

2.2. Personalization and Trust

Personalization is one of the most distinctive features of AI-based wellness services. By tailoring services

according to users' lifestyles, health conditions, and preferences, personalization significantly enhances engagement and satisfaction (Qin et al., 2024). However, for personalization to function effectively, trust must serve as a prerequisite. Without trust in the reliability and transparency of AI-generated recommendations, users are unlikely to adopt such services, regardless of their technical sophistication (Washington, 2025). Empirical studies suggest that personalization and trust do not operate in isolation but rather in a complementary relationship, jointly determining users' intention to continue using wellness services. Trust thus acts as both a mediator and amplifier of perceived personalization effects in digital wellness platforms.

2.3. Technology Acceptance and the UTAUT Model

The Unified Theory of Acceptance and Use of Technology (UTAUT) provides a comprehensive framework for explaining the adoption of AI-based wellness services (Dingel et al., 2024). According to UTAUT, users' behavioral intentions are determined by performance expectancy, effort expectancy, social influence, and facilitating conditions. Subsequent extensions of the model have incorporated additional constructs such as trust, personalization, and hedonic motivation, which have proven particularly relevant in the context of AI-enabled wellness platforms (Su et al., 2025; Yang et al., 2024).

For example, users' adoption of mobile health applications or AI health assistants depends not only on technological convenience but also on social norms, personal expectations, and psychological engagement. Thus, UTAUT-based analyses provide a multidimensional understanding of how both cognitive and affective factors shape AI wellness service acceptance.

2.4.. Human–AI Interaction and Hybrid Models

Recent studies emphasize that hybrid health coaching, which combines human and AI elements, often outperforms purely AI-driven models (Loughnane et al., 2025). While fully automated AI systems offer scalability and instant feedback, they may lack empathetic communication and emotional support, which are essential for sustained user engagement. Conversely, integrating AI with human coaching creates a synergistic balance between data-driven precision and human empathy, thereby enhancing both satisfaction and long-term participation.

Experimental evidence from AI-assisted stress management chatbots (e.g., the MISHA app) and digital resilience training programs demonstrates the effectiveness of such hybrid frameworks (Ulrich et al., 2024; van Mierlo et al., 2025). Therefore, for AI-based e-business platforms to succeed, it is crucial to design systems that harmonize algorithmic efficiency with human-centered interaction in both functional and emotional dimensions.

2.5. Theoretical Contribution of the Study

In summary, while existing studies have explored the effectiveness and potential of AI-based wellness services, most have been confined to examining individual applications or specific technologies. This study extends beyond such limitations by taking an integrative perspective centered on AI-based e-business platforms. It examines the interrelated roles of personalization, trust, technology acceptance, and human–AI interaction in influencing wellness service adoption. Furthermore, recent studies have expanded this theoretical discussion by incorporating psychological and emotional dimensions of wellness assessment, such as digital screening for trauma and stress (Litvin et al., 2024), underscoring the importance of holistic evaluation frameworks in AI-based wellness research.

By synthesizing these theoretical dimensions, this research aims to present a more refined conceptual framework explaining the mechanisms of wellness service acceptance. Furthermore, it contributes to the academic foundation for understanding the convergent evolution of AI and digital health business models, offering new insights for both researchers and practitioners seeking to design sustainable, user-centered AI wellness ecosystems..

3. Research Method

This study adopted a literature review approach rather than an experimental design, focusing on a theoretical exploration of how AI-based e-business platforms influence the adoption of personalized wellness services. Given that empirical research in this emerging interdisciplinary field remains limited, the literature-based approach was considered most appropriate for systematically synthesizing prior findings, identifying the relationships among key constructs, and providing a conceptual foundation for future empirical and practical developments.

To construct the analytical framework, major academic publications in the fields of artificial intelligence, healthcare, and wellness were carefully selected and examined. The literature search was conducted using internationally recognized databases such as PubMed, Scopus, Web of Science, and Google Scholar, employing combinations of keywords including "Artificial

Intelligence," "e-Business Platform," "Wellness Service," "Personalization," "UTAUT," and "m-Health." While the review primarily focused on studies published within the last five years, earlier works predating 2020 were also included when they offered foundational theoretical insights relevant to the research objectives.

The reviewed studies encompassed four main thematic areas. The first group examined how AI is transforming traditional healthcare and health management services, highlighting its role in redefining patient interaction and operational efficiency (Bajwa et al., 2021; Bo et al., 2023). The second group focused on the roles of personalization and trust, investigating how AI-generated recommendations and adaptive guidance affect users' intentions to adopt wellness-related technologies (Qin et al., 2024; Washington, 2025). The third group applied the Unified Theory of Acceptance and Use of Technology (UTAUT) framework to empirically test how constructs such as performance expectancy, effort expectancy, social influence, and facilitating conditions predict the adoption of AI-based services (Dingel et al., 2024; Su et al., 2025; van de Werken et al., 2025). The final group explored human–AI interaction and hybrid models, demonstrating that the combination of AI systems and human coaching produces higher levels of satisfaction, trust, and engagement than fully automated services (Loughnane et al., 2025; Ulrich et al., 2024).

Based on the synthesis of these studies, this research analyzed the mechanisms through which the technological attributes of AI-based e-business platforms—specifically personalization, reliability, and interaction quality—influence users' acceptance of wellness services. Special attention was given to the mediating roles of perceived usefulness and user engagement, examining how these psychological factors bridge the relationship between technological features and users' behavioral intentions toward continuous service use.

Thus, the methodological orientation of this study goes beyond merely cataloging prior works. Instead, it develops an integrated conceptual framework that explains the interplay between technological and psychological factors underlying wellness service adoption. This literature-based approach provides a crucial theoretical foundation for a research area still in its formative stage and offers strategic insights for the design and implementation of sustainable AI-driven wellness business models.

4. Result of the Study

Through a comprehensive literature review, this study explored how AI-based e-business platforms affect the acceptance of personalized wellness services. The findings, derived from a synthesis of existing research, highlight several interrelated mechanisms that shape users' adoption behaviors.

The review revealed that the technological attributes of AI platforms—namely personalization, trust, and interaction quality—play decisive roles in fostering user acceptance. Personalized health recommendations were shown to significantly enhance both user trust and adoption intention (Qin et al., 2024), while Washington (2025) found that personalized AI systems increase the precision of digital therapeutics, thereby promoting sustained user engagement. Similarly, studies by Loughnane et al. (2025) and Ulrich et al. (2024) demonstrated that high levels of interaction quality lead to greater immersion and satisfaction among users. These findings collectively suggest that the technological sophistication of AI-based platforms contributes not only to functional utility but also to the psychological foundations of wellness service acceptance.

In addition, the review emphasized the mediating influence of psychological factors, particularly perceived usefulness and engagement. Dingel et al. (2024) confirmed through meta-analysis that UTAUT constructs effectively predict clinicians' intentions to adopt AI technologies. Su et al. (2025) similarly reported that trust and perceived usefulness mediate adoption intentions in the context of AI health assistants, while Leslie-Miller et al. (2025) identified engagement as a key determinant of sustained participation in personalized wellness applications. These findings indicate that technological attributes exert their effects indirectly, through psychological mediators, rather than solely via direct pathways.

Another significant insight concerns the potential of hybrid human–AI models. Research has shown that the combination of human empathy with AI-driven precision generates superior outcomes compared to purely automated systems. For instance, Loughnane et al. (2025) found that hybrid coaching programs achieved greater lifestyle improvements and engagement, while Ulrich et al. (2024) demonstrated that AI chatbot–based stress management programs were most effective when supplemented with human coaching. This suggests that sustainable wellness service adoption is best achieved through the integration of algorithmic precision and human emotional intelligence.

In summary, the findings yield four overarching insights. First, the technological attributes of AI-based e-business platforms are central to explaining wellness service adoption. Second, personalization and trust are not mere functional components but foundational elements driving continued user engagement. Third, perceived usefulness and engagement function as psychological mediators that translate technological quality into

behavioral intention. Finally, hybrid human–AI systems complement the limitations of standalone AI, offering a strategic direction for the next generation of wellness service design.

5. Conclusions and Implications

This study employed a literature-based approach to explore how AI-based e-business platforms influence the adoption of personalized wellness services. Through a comprehensive review of prior studies, it was confirmed that the advancement of AI technologies extends beyond the dimension of service delivery to fundamentally reshape user experience and adoption behavior. The findings identified three key mechanisms that explain wellness service acceptance: the technological attributes of AI-based platforms, the mediating role of psychological factors, and the integration of human and AI elements within hybrid models.

First, personalization, trust, and interaction quality emerged as central drivers of wellness service adoption. Personalization enhances perceived service value by providing tailored health recommendations and management guidance that align with individual needs. Trust, in turn, functions as the foundation that allows users to accept and act upon such personalized information. Moreover, interaction quality strengthens user engagement and immersion, serving as a critical factor that transforms initial adoption into continued and habitual use.

Second, perceived usefulness and user engagement act as vital mediating links between technological attributes and adoption intention. Users who perceive AI-based wellness services as genuinely useful and who actively engage in the service process demonstrate stronger intentions to adopt and continue using these services. This finding suggests that technological excellence alone is insufficient; rather, users' perceptions and experiential involvement must be jointly considered to ensure successful adoption.

Third, the potential of human–AI hybrid models is particularly noteworthy. While AI provides precision and instant feedback that maximize efficiency, human coaches offer empathetic interaction and emotional support that enhance both sustainability and satisfaction. Accordingly, future wellness services are likely to evolve into integrated systems that combine the automated precision of AI with the human warmth of care and empathy, yielding optimal user experiences and long-term engagement.

These results offer several implications for both theory and practice.

From an academic perspective, this study moves beyond prior research that focused on individual applications or the technical effects of AI by presenting a comprehensive framework that integrates technological, psychological, and human–AI interactional dimensions at the platform level. This integrated structure provides a more nuanced explanation of wellness service adoption mechanisms within AI-driven e-business ecosystems.

From a practical standpoint, the findings deliver meaningful strategic guidance for companies developing and managing AI-based wellness platforms. Strengthening personalization algorithms, ensuring data protection and transparency to foster trust, and embedding interactive elements that encourage user participation are all essential design strategies. Furthermore, adopting a hybrid human–AI model can serve as a key strategy for enhancing service continuity, customer satisfaction, and long-term brand loyalty.

Finally, this study has certain limitations arising from its reliance on literature-based analysis. As the conceptual framework was developed through secondary data rather than empirical testing, future research should validate the proposed relationships through quantitative and qualitative analyses involving diverse user groups. Investigating moderating factors such as age, culture, and digital literacy will further refine the understanding of how different populations adopt AI-based wellness services. Such empirical extensions will contribute to building a more systematic and universal theoretical foundation for the convergence of AI-based e-business platforms and wellness services in the digital era.

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