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An Empirical Study on the Influencing Factors of Mobile Health Apps Acceptance Among Silver Generation in China: An Extended STAM

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Abstract

Mobile health apps acceptance is the necessary element for healthcare business success and market expanded. Hence, the current study examines features that impact the acceptance of mHealth apps among silver generation mobile users in China. Companion presence, initial trust and the Senior Technology Acceptance Model (STAM) was employed as influencing factors. Questionnaires for data collection was extracted and data was collected from 641 responses using the purposive sampling approach. Smart-PLS was applied to examine the relationships among variables. The results indicated that companion presence and initial trust have positive nexuses with mHealth apps acceptance intention. This study contributes new insights to evaluating mHealth apps acceptance by considering the effects of companion roles of apps and also offers substantial contributions for practitioners to improving the app features.

Keywords: Health App Acceptance, Silver Generation, Companion Presence, Initial Trust

Introduction

Mobile health (mHealth) encompasses medical and public health practices supported by mobile devices, such as mobile phones, patient monitoring devices, personal digital assistants, and other wireless technologies (WHO, 2011). By leveraging mobile wireless technology, mHealth enhances healthcare delivery and symptom monitoring, streamlining diagnostic processes for greater simplicity and efficiency (Liu et al., 2019; Pal et al., 2018). China has actively promoted mHealth through government policies, business initiatives, and technological advancements, resulting in over 2000 certified mHealth apps available today. MHealth has become a primary platform for addressing health needs. However, as shown in figure 1, despite being a significant potential user base, individuals over 55 years old accounted for less than 2.8% of total mHealth users in 2022 (Park, 2015). While the proportion of internet users aged 50 and above rose from 26.8% in December 2021 to 30.8% in December

2022 (CNNIC, 2023), their adoption of mHealth services remains low, hindering the full realization of mHealth benefits. Furthermore, several mHealth projects have been delayed due to a lack of awareness, and health service initiatives have struggled to achieve or maintain optimal outcomes (Chandwani et al., 2018).

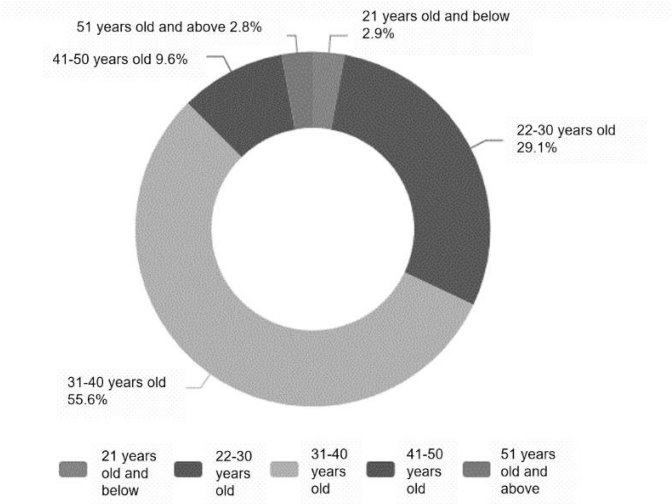

Figure **Error! No text of specified style in document.** : The Proportion of Mobile Healthcare Users in China
(Source: Data on the Operational Status and Consumer Behaviour of the Chinese Internet Healthcare Industry Survey, iMedia Research, 2023)

Meanwhile, the rising number and proportion of elderly people in China (Figure 2) have exacerbated the conflict between the medical care demands of this demographic and the limited medical care resources (DESA, 2019). The WHO (2016) estimates that by 2050, individuals aged 60 and above will make up 36.5% of China's population and remain around 33% in the long term. This ageing population drives high medical expenses, strains medical resources, and increases government healthcare expenditures (DESA, 2019). Additionally, China's unique healthcare challenges stem from its large population and uneven healthcare development across regions (Lu et al., 2018). Ye et al. (2019) highlight ongoing issues with the uneven distribution of medical resources and supply-demand gaps. Deng et al. (2018) note that the healthcare system for the elderly is particularly strained by China's vast geography and dispersed population. Fang et al. (2020) also confirmed that uneven healthcare development across regions leads to disparities in medical resource distribution, impacting the elderly.

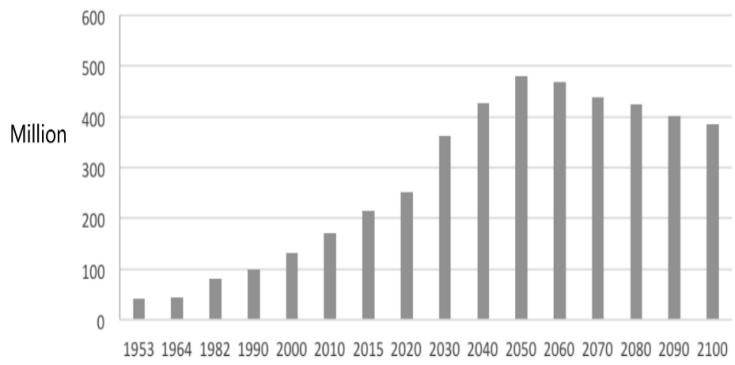

Figure 2: Population Aged Above 60 in China (1953-2100)
(Source: DESA, 2019)

The proportion of users aged 50 and above increased from 26.8% in December 2021 to 30.8% in December 2022 shows how the internet has penetrated middle-aged and elderly groups. However, the corresponding proportion of such age group using mobile medical care is far lower. Thus, this study aims to develop an understanding of the factors influencing the mHealth app acceptance for silver generation in China. Exploring the factors, which can promote gerontechnology and AI technology fuse in mHealth acceptance, can help to increase the mHealth app improvement. This effort could assist the policymakers in formulating policies accordingly and harness the untapped potential of the Chinese mHealth market.

The current scholarly literature on mHealth apps primarily examines functional or technological adoption intentions Ozkan-Yildirim & Pancar (2021); Talukder et al (2020), user experience Zickuhr & Smith (2012), and drivers of user attitudes (Belanche et al., 2019). However, significant gaps remain in empirical research regarding factors influencing older adults' acceptance of mHealth app use. 1) While the companionship between humans and an advanced tool such as the mHealth apps may seem far removed from classical interpersonal relationships, research on how individuals interact with AI and other technological devices (such as robots and conversational agents) has provided evidence of a quasi-social relationship between smart apps and their users. Research conducted by Ta et al (2020) has shown that typical users perceived chatbots as social companions when they exhibited acceptance, availability, as well as the ability to fulfil users' communication needs. Furthermore, the study by Skjuve et al (2021) revealed that users felt rewarded and experienced positive effects on their perceived well-being as a result of interacting with chatbots. 2) This study attempts to move beyond factors that directly influence acceptance intention to explore their indirect effects through users' trust issues, particularly focusing on initial trust. Initial trust refers to the initial evaluation of credibility formed by individuals towards unfamiliar or unacquainted interaction partners during the early stages of interpersonal communication (Wei & Long, 2008). The Stimulus-Organism-Response (S-O-R) model by Mehrabian and Russell (1974) supports an understanding of the mechanism by which the mHealth app function (companion presence) drives older users' initial trust and ultimately leads to acceptance intention. 3) the factors driving acceptance of use intention in the mHealth app context have been loosely theorised, overlooking important drivers suggested by theories. Although Chen and Lou (2020) proposed four constructs including attitudinal beliefs, control beliefs, anxiety and health situation as the driving factors to accept gerontechnology, while Khan et al (2022) have indicated that technology anxiety did not harm mHealth acceptance intention for older adults in Pakistan context. Furthermore, Chua et al

(2022) pointed out that reducing social isolation and providing emotional support and gerontechnology technology attributes should be integrated to form optimal mHealth marketing strategies. This notion is supported by the Social Facilitation Theory (SFT) (Feinberg & Aiello, 2006; Triplett, 1898), which proposed the presence of others as the motivation factor driving technology adoption. On this account, this study argues the senior technology acceptance model (STAM) to measure gerontechnology acceptance among older Chinese (Chen & Chan, 2014; Chen & Lou, 2020). As underpin theory that encourages users to accept using a mHealth app.

The paper is structured in several phases: The first phase introduces the study. The second phase reviews evidence from past studies on mHealth apps, focusing on companion presence, initial trust, STAM factors, and acceptance intentions. The third phase outlines the methodology used for data collection and validity analysis. The fourth phase presents the results and findings. Finally, the last phase discusses the study's implications, conclusion, and future recommendations.

Literature Review

Companion presence

Companion presence, as defined by Krämer et al (2011), refers to the incorporation of human-like accompanying acts into non-human entities. In today's technological landscape, the integration of companion presence in robots, apps, smartphones and product design has garnered attention from researchers and industry professionals (Abdollahi et al., 2017; Burmester et al., 2019; Ghafurian et al., 2021). Two primary dimensions of companion presence are telepresence, which pertains to users' perception of being physically immersed in a mediated environment, and social presence, which relates to users' perception of psychological intimacy with technology in terms of human contact, warmth and sensitivity (Merrill et al., 2022; Ou et al., 2014).

In recent technological advancements, there has been a significant emphasis on developing companionship-oriented technological devices to provide users with a heightened sense of reality within the virtual world. Scholars and information system managers have dedicated substantial efforts to the creation of companion technologies such as virtual pets, humanoid companion robots and animal companion robots, which have demonstrated their ability to offer companionship and emotional support, particularly to the silver generation, thus making them highly appealing (D'Onofrio et al., 2019; Liang et al., 2017). Moreover, research in this field acknowledges the crucial role of companion presence in influencing users' behaviours towards artificial intelligence devices (Cascio Rizzo et al., 2023; Merrill et al., 2022). Wulfert (2019) further underscored the significance of companion presence as a powerful technique for stimulating usage behaviour, as users generally exhibit more positive responses to technology devices that incorporate companion presence compared to those that lack it.

The incorporation of embodied robots or disembodied online chat agents has been regarded as an effective means of infusing companion presence in various environments (Belanche et al., 2021; Erel et al., 2019). The integration of social robots has been found to enhance credibility and trust Bott et al (2019), perceived social support D'Onofrio et al (2019) and overall positive user experience (Wulfert, 2019). From the users' perspective, embodied and disembodied agents are perceived as actual individuals who provide them with a comfortable, reliable and trustworthy companion (Cascio Rizzo et al., 2023).

Similarly, it is anticipated that a highly companionable mHealth app with humanlike features will have a greater influence on users' adoption. In other words, older users are likely to have a more pleasant experience when adopting a technology device that incorporates a companion presence. This aligns with the notion of the Social Facilitation Theory (Su et al., 2020), which suggests that the presence of others or objects can serve as motivational stimuli that encourage mobile users to utilise a mHealth app. Based on this, the following hypothesis was formulated:

H1: Companion presence is positively related to mHealth apps acceptance intention among the Chinese silver generation.

Initial Trust

The formation of trust can influence individuals' subsequent behaviours and behavioural intentions. In online transaction environments, behavioural intention is considered a key outcome of trust, as trust helps in reducing uncertainty in online settings and transaction contexts, assuring website visitors (or users) and merchants, as well as promoting the establishment of stable relationships between the two parties (Urban et al., 2009). Bart et al (2005) analysed and explored the potential outcomes of trust, with behavioural intention identified as a significant and indispensable factor. Boateng and Narteh (2016) demonstrated that if users trust a company, they are willing to engage in spontaneous word-of-mouth promotion of that company and have the intention to purchase or utilise the products or services it offers. Mobile healthcare services can be regarded as a specialised type within the service industry; thus, trust in the mobile healthcare domain can influence their subsequent behavioural intentions.

The study of behavioural intention has received widespread attention in the fields of e-commerce and healthcare. Scholars from different domains have analysed the relationship between trust and behavioural intention from various perspectives. In the e-commerce domain, an empirical analysis confirmed the positive effect of user trust on their purchase intention (Ba et al., 2003; Beldad et al., 2017; Pappas, 2016). Similarly, previous research has found that initial trust reflects individuals' willingness to take risks and satisfy their own needs. Kim et al (2009) found that consumers' perceived initial trust significantly influenced their intention to use mobile banking services. Research in the healthcare domain also indicated that patient trust determines their attitudes and behaviours, while an increase in patient trust leads to enhanced compliance with doctors' instructions and recommendations (Hall, 2006).

In the context of mHealth acceptance research, initial trust, as a first impression, can shape future interaction and potentially facilitate the formation of sustained trust. Therefore, it plays a crucial role in the adoption of mobile healthcare services by potential users, increasing the probability of future adoption. This study focuses on the initial stage of user interaction with mHealth and examines whether the initial trust developed influences their subsequent intention to use mHealth. In this study, initial trust was defined as the level of trust possessed by a user in a system before interacting with it (Kim & Tadisina, 2003). As suggested by Kim and Tadisina (2003), this term denotes a multidimensional construct comprising two sub-components: competence and goodwill. Based on the above analysis, the hypothesis was developed:

H2: Initial trust is positively related to mHealth app acceptance intention among the Chinese silver generation.

Senior Technology Acceptance Model

Chen and Chan (2014) first introduced the senior technology acceptance model to understand the acceptance of gerontechnology by older Hong Kong Chinese people. By carrying out quantitative analysis, age-related health and ability constructs were added to the original TAM and the unified theory. In 2020, Chen and Lou improved the senior technology acceptance model to a briefer and more constructed version. This brief and improved version known as the STAM has four constructs including attitudinal beliefs, control beliefs, anxiety and health situation. The attitudinal beliefs and control beliefs are largely in line with that of traditional TAMs (Cimperman et al., 2016; Compeau & Higgins, 1995). The attitudinal beliefs construct includes attitude toward using PU in traditional TAMs. The Control beliefs construct includes PEOU in traditional TAMs and self-efficacy, the original facilitating conditions from the original STAM. The health situation construct integrates ageing-related psychosocial and physical characteristics. The anxiety constructs refer to an individual's apprehension when he or she is faced with the possibility of using gerontechnology (Venkatesh et al., 2003). Drawing upon existing and recent researches on the STAM model, this study seeks to expand the application scope, enhance specificity and strengthen applicability by closely examining the product design elements of mHealth apps, in addition to the existing STAM framework. Based on the above analysis, the hypothesis was developed:

H3: Control beliefs are positively related to mHealth app acceptance intention among the Chinese silver generation.

H4: Attitudinal beliefs are positively related to mHealth app acceptance intention among the Chinese silver generation.

H5: Health situation is positively related to mHealth apps acceptance intention among the Chinese silver generation.

Trust is an important area of healthcare management literature. Many researchers suggested that trust issues are barriers to mHealth acceptance (Deng et al., 2018; Guendelman et al., 2017). Lazard et al (2020) operated an experiment and found that social cues (conversational cues and community cues) of feelings of being with others increased trust in mHealth apps. Meanwhile, trust is seen as a key prerequisite for relationship development (Altman and Taylor, 1973).

Correspondingly, Skjuve et al (2021) asserted that companionship is a fundamental condition for building a relationship with artificial entities; thus, many social robots (Replika) were designed to take the role of a social companion (Takahashi, 2019). Empirical research in the healthcare management discipline has broadly documented the significant effect of companion presence. For example, the appearance of companion robots has been found to increase social support Bott et al (2019), reduce switching intention Abdollahi et al (2023), and reduce anxiety Liang et al (2017) among older users.

Drawing on the above evidence, companion presence appears to be an important ingredient in building initial trust in the context of mHealth apps. In the health management marketplace, an mHealth app is not just a platform for users to order and consult but is also a proxy to provide support and emotional engagement with their users. When the silver generation sense companionship and psychological closeness with apps, they feel more comfortable connecting with them and are more likely to trust an mHealth app. Supported

by the S-O-R model, this study argued that companion presence (stimulus) within the mHealth app will positively influence initial trust (organism). Hence, the hypothesis was proposed as:

H6: Companion presence is positively related to initial trust among the Chinese silver generation.

Research Methods

The article explores the role of apps' companion presence, initial trust, and mHealth acceptance intention among the Chinese elderly population. The researchers employed primary data collection methods, utilizing questionnaires to gather the necessary data. The questionnaires were extracted from past literature; for example, companion presence was measured using Ou et al.'s (2014) scale, which included five items for social presence and four items for telepresence. In addition, initial trust was measured with two dimensions: a three-item scale of competence and a three-item scale of goodwill from (Kim and Tadisina, 2003). Moreover, control beliefs, attitudinal beliefs and health situation were measured through Chen and Lou's STAM scale (four items for control beliefs, three items for attitudinal beliefs and five items for health situation). To assess acceptance intention, five items were drawn from the scale developed by Junglas et al (2013), as well as that by (Sohn and Kwon, 2020).

In addition, the Chinese silver generation (born before 1966 and aged over 55 years old in 2021) who had utilized a smartphone within the past six months are the respondents and distributed the surveys using in-home interview. The researchers have sent around 800 surveys and received 662 feedback that represents around 82.8 percent response rate. After data screen, 21 responses were eliminated (case-wise deletion) since respondents answered with obvious regularity (choosing the same option for all items). Ultimately, a total of 641 final responses were retained and used in further analyses using SPSS 25 and Smart PLS 3.3.5. The study has used five predictors such as companion presence (CP), initial trust (IT), control beliefs (CB), health situation (HT), and attitudinal beliefs (AB). In addition, the study has used one dependent variable which is acceptance intention (AI). These variables are given in Figure 2.

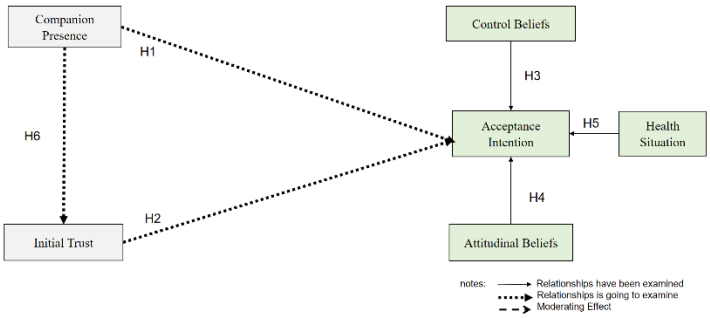

Figure 2: Theoretical model

Research Findings

The results indicate that the Composite Reliability (CR) values ranged between 0.878 and 0.920, and Cronbach's Alpha (α) values ranged between 0.793 and 0.870, demonstrating that internal consistency has been met. All items met the suggested outer loading criterion, with values between 0.724 and 0.916, which are higher than the recommended threshold of 0.50, indicating valid convergent validity. Additionally, the discriminant validity was confirmed

using cross-loadings and the Fornell-Larcker criterion, with values showing a stronger association with their respective variables than with others. The Heterotrait-Monotrait (HTMT) ratio values were below 0.85, further confirming valid discriminant validity.

Besides, the higher-order constructs (HOCs) in this study (companion presence and initial trust) were assessed using the two-stage approach (Becker et al., 2012; Sarstedt et al., 2019). The findings (Table1) showed that LOCs (social presence = 0.738; telepresence = 0.361) had pronounced significant effects on companion presence ($p<0.05$). In addition, LOCs (competence = 0.579; goodwill = 0.553) had pronounced significant effects on initial trust ($p<0.05$). In summary, the above results are consistent with the previous literature stating that the HOCs (companion presence and initial trust) are formatively shaped by several LOCs.

Table 1
Assessment of Higher-order Constructs

Higher-Order Construct	Sub-Dimension/LOCs	Outer Weight	T Statistics	P Values	Outer Loading	Outer VIF
Companion Presence	Social Presence	0.738	12.100	0.000	0.958	1.598
	Telepresence	0.361	5.201	0.000	0.812	1.598
Initial Trust	Competence	0.579	6.360	0.000	0.889	1.458
	Goodwill	0.553	5.827	0.000	0.878	1.458

The results indicated that the companion presence, initial trust, control beliefs, attitudinal beliefs, and health situations have positive nexuses with mHealth app acceptance intention and accept H1, H2, H3, H4, H5 and H6. Table 2 highlights these associations.

Table 2
Assessment of Path Coefficients

Path Relationship	Std. Beta(β)	Std. Error	T-value	P values
H1) Companion Presence→ Acceptance Intention	0.380	0.043	8.762	0.000
H2) Initial Trust→ Acceptance Intention	0.181	0.039	4.669	0.000
H3) Control Beliefs→ Acceptance Intention	0.248	0.033	7.548	0.000
H4) Attitudinal Beliefs→ Acceptance Intention	0.182	0.030	5.976	0.000
H5) Health Situation s→ Acceptance Intention	0.267	0.036	7.376	0.000
H6) Companion Presence→ Initial Trust	0.513	0.047	10.830	0.000

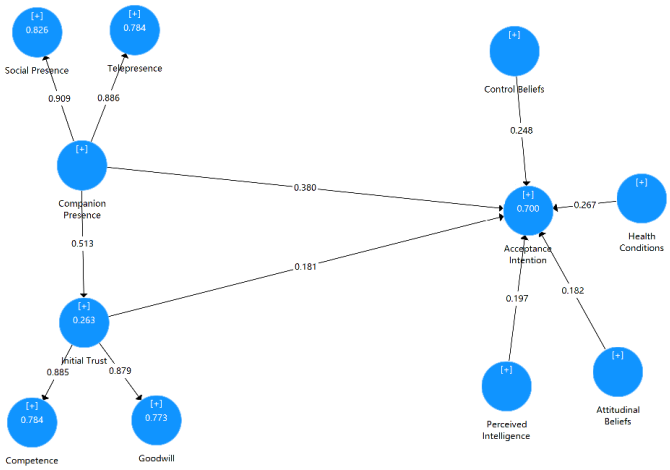

Figure 3: Measurement model assessment

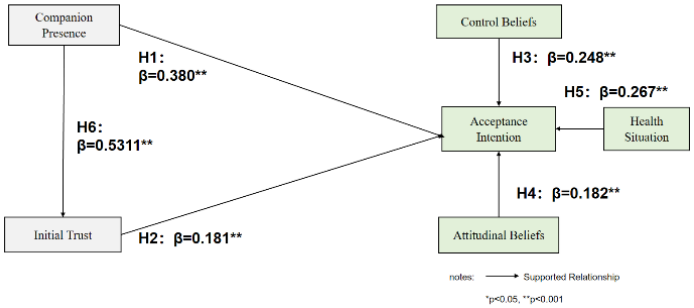

Figure 1 : Final Model

Thus, this study developed and empirically tested a model to understand the factors that drive silver generation mobile users' intention to accept using a mHealth app. Based on the research results, the final model can be established. Figure 3 shows the assessment of the structural model, while Figure 4 illustrates the path results. The present study found that: companion presence, initial trust, control beliefs, attitudinal beliefs, and health situation are positively related to mHealth apps acceptance intention among Chinese silver generation.

Discussions

This study aimed to elucidate the features that encourage mHealth app acceptance use intention. As predicted, companion presence exerts the earlier prediction by having significant direct impact on acceptance use intention. Several earlier studies found a positive link between companion presence and favorable user behavior in human-human and human-computer interaction environment (Cheung et al., 2020; Huppertz et al., 2023). However, it is noteworthy that companion presence also has influence in a human-smartphone interaction environment (e.g., mHealth app environment).

Companion presence makes a technology more supportive and more warmly by adding accompanying features; Thus, it is a significant factor in silver generation users' decision to accept use a mHealth app. this study denoted that companion presence is the strongest predictor of silver generation users' acceptance intention. This outcome is compatible with the notion that Senior citizens are more focused on current and emotionally important relationships as well as on goals that involve emotional meaning and emotional regulation

(Carstensen, 1992; Carstensen et al., 1995). A recent study by Magsamen-Conrad et al. (2020) also highlighted that older users are more willing to seek support from their familiar environment.

In the case of the mHealth app, companionship can stimulate acceptance intention. From silver generation's point of view, their anticipated interactions in a mHealth app might be completely fulfilled by companion presence (i.e. telepresence or social presence). In other words, it can be concluded that perceived immediacy (i.e. telepresence) and human warmth (i.e. social presence) fully replace human interactions in the mHealth app setting. This also seems to indicate that human interactions could be replaced entirely by technology which Consistent with the Computers are Social Actors (CASA) paradigm Gambino et al (2020); Nass et al (1994), thus the relationship between users and apps could be the driving force behind a successful mHealth app acceptance strategy.

Meanwhile, consistent with the assertion regarding the role of initial trust in shaping users' behavior Deng et al (2015), this study denoted that initial trust is a significant factor in silver generation users' acceptance intention of a particular mHealth app. With changing environment dynamics, the doctor-patient relationship is evolving. The concept of initial trust is increasingly important, particularly in the online healthcare environment. Built upon previous study in marketing and technology, initial trust has been acknowledged as one of the most effective tactics to motivate consumers or users to have positive outcomes (Bart et al. ,2005; Boateng & Narteh, 2016). Earlier literature has provided anecdotal evidence that trust is essential among older users (i.e. silver generation) who value emotional factors when using and interacting with new objects (Cheng et al., 2023). After experiencing social isolation and health concerns during the pandemic, trust-building is the expectation of older adults when they have to face new social connections.

Besides, this study proved that the other STAM factors (i.e. control beliefs, attitudinal beliefs and health situation) have positive influences on mHealth app acceptance intention. This significant relationship supports the claim that control beliefs, attitudinal beliefs and health situation include the basic needs that maintain the use of mHealth apps among silver generation users. This result confirms Chen and Lou (2020)'s idea that the control beliefs, attitudinal beliefs and health situation are crucial predictors of older users' behavior in gerontechnology acceptance intention. This result consistent with the findings of Gell et al. (2021), this study also verified even though the STAM questionnaires were initially developed to assess technology acceptance in a general context, they are also effective in capturing respondents' genuine reactions when technology use becomes targeted and specific. Gell et al. (2021)'s research also has indicated that high scores on control beliefs and attitudinal beliefs are associated with a greater willingness to overcome concerns related to technology and a belief in one's ability to learn new things. Similarly, In the field of robotic research, Chen et al. (2023) highlighted that the attitudinal beliefs are significant factors to promote the intention to use robotic exoskeletons among older individuals. In other countries such as Korean, the STAM framework also confirmed in ICT-based health care systems acceptance (Park et al., 2023), and community-wide preventive models (Kim et al., 2023).

Furthermore, this study provides empirical evidence to confirm the role of companion presence in heightening user's initial trust in technology. As per this study's hypothesis, when companion presence is high, users sense warmth and intimacy, which encourages them to start trust with a mHealth app. This corroborates the findings of previous studies that companion presence is effective in establishing richer and deeper online relationships (Takahashi, 2019). This result is also in line with previous literature that found that products

with companion characteristics are more likely to evoke positive emotional states among users, such as social support Bott et al (2019), positive emotions (D'Onofrio et al., 2019), trust Rizzo et al (2023) and willingness to accept disembodied agents (Merrill et al., 2022). Moreover, these findings align with previous research that has indicated how interacting with non-human entities in a companion-like manner can elicit a sense of connection akin to human relationships (Strohmann et al., 2023). This sense of connection, in turn, fosters a feeling of belonging and serves as a defense against loneliness (Melumad & Pham, 2020; Nie et al., 2020).

Implications

The present study contributes to the body of knowledge in extends the use of the social facilitation theory Feinberg & Aiello (2006); Triplett (1898) to the context of the mHealth app. Tracing its roots to information system theories, companion features are essential in motivating the use of technology among users. Zavoyskiy's (2023) and Xu's researches both indicated that smartphone could be viewed as social actors and have emotional contagion with human. Responding to their finding, companion presence as a motivation factor was integrated to STAM for better understanding silver generation's driving force for accept mHealth app in daily usage. In particular, the results of this study established that instead of anxiety in original STAM, companion presence could provide more support and emotional contagion, thus it should be incorporated in driving mHealth app acceptance intention. Regardless of whether AI-enabled technology is embodied or disembodied, the presence of a companion plays a crucial role in establishing a solid foundation for developing a functional strategy that effectively caters to the needs of users, particularly older adults. While previous research has highlighted the advantages of companion features in embodied robots, the findings of this study indicate that companion presence has the potential to replace human interaction, even in a disembodied state. This novel insight contributes to the existing body of knowledge and adds value to the understanding of the role of companionship in AI-enabled technology. Additionally, it has been found that other factors of the STAM model (i.e. control beliefs, attitudinal beliefs and health situation) exert a positive influence on mHealth app acceptance intention. This finding implies the potential applicability of the STAM model not only in the field of gerontechnology but also in research concerning acceptance among the aging population more broadly.

This study offers beneficial insights to mHealth marketer in understanding older users' basic expectations to accept a particular mHealth app. Of the factors examined, companion presence exhibited the highest effect on acceptance intention. Thus, mHealth marketers should consider strategically encouraging potential silver generation users to use mHealth app with companion function. In today's intensely competitive healthcare marketplace, the mHealth app is not just a piece of technology but an indispensable tool that allows health providers to interact with users (Conor, 2020). Compared to other healthcare marketing tools, the mHealth app is more advantageous by being a companionship that provides an "always-on, no waiting time" assistant for patients to get health management, medical diagnoses, and treatment.

Moreover, this study offers valuable insights to information system management and app developers, emphasizing the significance of companion feature in mHealth apps. As technology continues to advance, it becomes imperative for app developers to integrate

companion feature into their designs, fostering a seamless interaction between technology and human users. By incorporating rich companion, apps have the potential to alleviate user discomfort and enhance their sense of connection.

In addition, the findings of this study offer practical and actionable insights to policymakers, highlighting the substantial advantages that the utilization of mHealth apps can bring to healthcare companies and hospitals. It becomes evident that the adoption of these apps not only enhances the efficiency and effectiveness of healthcare services but also has the potential to generate increased revenue for countries.Recognizing the potential of mHealth apps as a transformative tool in the healthcare sector, policymakers play a crucial role in facilitating their successful integration into existing businesses. To harness the benefits of these apps, it is imperative for policymakers to provide tangible support and assistance to healthcare companies and hospitals. This support can come in the form of financial resources, regulatory frameworks, and infrastructure development, all aimed at easing the burdens associated with incorporating technology into traditional healthcare practices.By offering concrete support, policymakers can empower healthcare organizations to embrace mHealth apps, ultimately improving patient outcomes, streamlining processes, and driving economic growth in the healthcare sector. It is essential for policymakers to recognize the value of mHealth apps and prioritize initiatives that foster their adoption, ensuring that healthcare companies and hospitals receive the necessary resources and guidance to successfully leverage this transformative technology.

Conclusions

This study makes significant contributions to both theoretical and managerial perspectives by presenting a comprehensive model that sheds light on the perceptions of silver generation users in their decision to accept and utilize mHealth apps. this study offers a profound understanding of the factors that predict mHealth app acceptance intention. The findings indicate that acceptance intention is positively influenced by companion presence, initial trust, control beliefs, attitudinal beliefs, and health situation. These results highlight the importance of incorporating companion features in apps to effectively enhance users' acceptance intention. Specifically, silver generation users prioritize companion components as they seek to mitigate feelings of loneliness and access greater social support. This aligns well with the unique characteristics and needs of the silver generation demographic.

Limitations

Notwithstanding the intriguing findings presented in this study, it is important to acknowledge several limitations. Firstly, this study was conducted within the context of a specific country, namely China, which restricts the generalizability of the results. The investigation of how cultural values intersect with the proposed variables was not within the scope of this study. To address this limitation, future research should endeavor to delve deeper into understanding how cultural differences influence the intention to accept mHealth apps by incorporating cross-country data. Scholars have argued that technology acceptance behavior can vary across different national cultures (e.g., Kimiagari & Baei, 2022; Metallo et al., 2022). Therefore, it would be beneficial for future studies to extend the current model to include other countries, allowing for a more comprehensive understanding of the impact of cultural factors on mHealth app acceptance intention.

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