KEMAS 19 (4) (2024) 530-540

Jurnal Kesehatan Masyarakat

http://journal.unnes.ac.id/nju/index.php/kemas

Digital Healthcare: Is A Trend Or Necessity?

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Article Info

Article History:
Submitted August 2023
Accepted November 2023
Published April 2024

Keywords:
UTAUT, Mobile Health, Healthcare Application, FOMO

DOI
https://doi.org/10.15294/kemas.v19i4.47275

Abstract

In the era of digital advancement, the government is actively endorsing different digital health apps. This trend is particularly noticeable in Indonesia, where consumer-focused eHealth services have gained extensive approval. The acceptance of these services has risen significantly over time, propelling Indonesia to a global ranking of third place in using health apps. This research intends to determine whether the inclination towards digital healthcare is genuinely embraced as a necessity, or if it's just a passing trend. The study involves conducting a nationwide quantitative investigation across Indonesia among 418 users of mobile health apps, based on the UTAUT 2 theory which was modified according to research needs by adding variable FOMO. Data collection through online surveys and uses structural equation modeling (SEM-PLS), to assess the connections between these factors. They reveal that digital healthcare is not only embraced but also perceived as a necessity. While necessity-driven motivation remains dominant, the study also uncovers hedonic factors playing a role. This combination of necessity and trend-related aspects underscores the potential market for digital healthcare. The outcomes of this research bring promising news for developers of digital healthcare solutions. It reveals that there is a genuine demand and need for digital healthcare services.

Introduction

The rapid shift towards digitalization in healthcare, spurred by the Covid-19 pandemic, is causing significant changes in various aspects of the field. Progress in the health industry might not be straightforward and could encounter obstacles along the way. Medical professionals have a crucial part to play in embracing the digital transformation in healthcare, all the while upholding ethical principles in their practice. Physicians need to actively steer the path of digital health evolution, ensuring that upcoming health technologies serve as tools to enhance the capabilities of doctors and healthcare providers, ultimately leading to improved patient care. These technologies must remain subservient to medical experts, rather than gaining control and distancing them from the patients they serve (Butcher & Hussain, 2022; Zhu *et al*., 2023).

The research delves into the concept of digital transformation within the domain of consumer-oriented digital health services. These services, catering to the general public, are commonly referred to as consumer informatics. Electronic health services, often termed digital health services, serve the purpose of disseminating health-related information to the public. In the contemporary landscape, mobile health applications have gained prominence, being downloadable on mobile devices, and categorized as M-health applications. These applications play a pivotal role in facilitating online access to healthcare services, as highlighted by (Zulkarnain & Dkk, 2021).

As per a report by KataData.id in October 2020, supported by Statista data, Indonesia stands at the third position globally in terms of health application usage. The leading countries in this regard are China and India. Notably, approximately 65% of respondents in

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pISSN 1858-1196
eISSN 2355-3596

these two nations acknowledged using health applications within the past year, according to Statista's Global Consumer Survey. Following closely, Indonesia recorded a health application usage rate of 57%.

The rise of health-based programs (health apps) in Indonesia can be seen in the presence of various digital health service programs, namely: Halodoc, Klikdokter, Alodokter, Good Doctor, Good Doctor, Linksehat, Lekassehat, and others, as applications that claim to be ready as digital healthcare. Collaborative efforts from the government and non-government organizations to build a more comprehensive health network and information system will enable better infiltration of digital health coverage, especially to realize a smart healthcare model (Jeffree *et al*., 2020). So far, previous studies have tended to raise the acceptance/ rejection factors for mobile application-based digital healthcare as well as the advantages and disadvantages of digital healthcare.

The exploration of digital transformation within the healthcare sector, including its requirements and trends, often employs systematic review methodologies. This research highlights that digital transformation is not only an aspirational concept but a fundamental necessity (Kruszyńska-Fischbach & Sysko-Romańczuk, 2022). Additionally, the contemporary trends in technology are shaped by users' lifestyle choices and the advantages offered by these technological advancements (Budi *et al*., 2021). This presents an intriguing research topic: whether the acceptance of Digital Healthcare stems from its necessity or is merely a fleeting trend from the user's standpoint. Such an inquiry could yield valuable insights to guide the comprehensive development of digital health services.

The primary aim of this study is to examine the way individuals perceive digital healthcare services delivered via applications. This investigation will center around varying user needs and will be tackled using an adapted and enhanced iteration of the Unified Theory of Acceptance and Use of Technology (UTAUT). Through this approach, the study intends to uncover whether users adopt Digital Healthcare due to necessity or if it's merely a temporary fad, by analyzing their attitudes and behaviors towards it.

UTAUT proposes four core variables, Effort Expectancy (EE), Performance Expectancy (PE), Social Influence (SI), and Facilitating Condition (FC), that directly influence user acceptance and usage behavior (Venkatesh *et al*., 2003). The current research employs an extended version of UTAUT, known as UTAUT 2. This version incorporates additional variables such as Hedonic Motivation (HM) while excluding Price Value (PV) and Habit due to their incompatibility with the research scenario. These modifications are made to align the model with the study's objectives and ensure its applicability (Marikyan & Papagiannidis, 2021; Sudburya *et al*., 2013; Venkatesh *et al*., 2012). UTAUT-2, a well-established model, holds high predictive validity and offers a solid foundation for examining user acceptance behavior in the context of mobile technology across diverse research domains (Zhu *et al*., 2023).

In this research, the UTAUT 2 model was adapted and modified to include an additional reflective variable, FOMO (Fear Of Missing Out), to better understand the reasons behind individuals' acceptance of a technology, specifically a mobile health application based on digital healthcare. FOMO holds significant importance in today's digital era (Elhai *et al*., 2021). FOMO is rooted in the innate human desire to be part of a community, which greatly influences human behavior. The concept of fearing missing out is widely recognized and has even been utilized in commercial advertising for marketing purposes. FOMO, a relatively new term, has been embraced in consumer psychology, particularly in the realm of social media advertising (Dinçer *et al*., 2022; Yazkan *et al*., 2022). Consequently, the extended UTAUT model employed in this study includes 7 independent variables (PE, EE, SI, FC, HM, FOMO, BI) and 1 dependent variable (UB).

Methods

This research was conducted using a quantitative approach to find out whether the digital healthcare phenomenon can be accepted by users as a need or just a trend. The goals encompass recognizing crucial elements, validating assumptions, and establishing

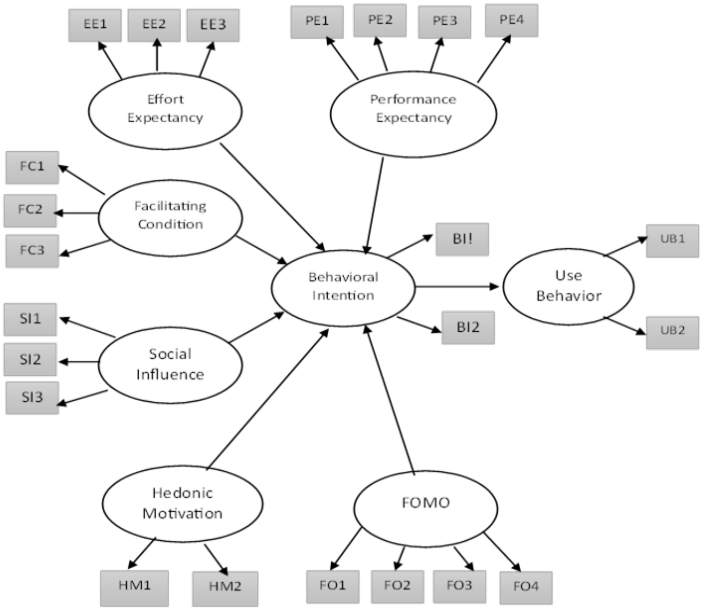

Figure 1. Research Concept Framework

noteworthy drivers. The outcomes aim to provide advice to digital healthcare providers to improve consistent utilization and draw in prospective users effectively. To gather data, an online questionnaire was distributed via platforms like WhatsApp, Telegram, Instagram, and Facebook between May 17, 2023, and June 5, 2023. The questionnaire, grounded in the UTAUT 2 model and pertinent prior research indicators, comprises 24 quantitative questions. An additional open-ended question supplements this to provide qualitative insights. The survey is split into two parts. The initial section collects fundamental details such as age, gender, educational background, and location. Additionally, there is an open-ended question aimed at understanding the reasons for utilizing the app. The second segment comprises the main inquiries, organized around factors illustrated in Figure 1 (derived from UTAUT 2). Each question provides a range of response options, ranging from "strongly disagree" to "strongly agree," which correspond to scores ranging from 1 to 5.

In this research, the focus is on individuals utilizing mobile healthcare applications in Indonesia. The study employs a statistical method by analyzing data from Play Store reviews. The data pertains to comparable telemedicine applications that enjoy widespread use in Indonesia. Specifically, Alodokter has 430,000 users, Halodoc has 406,000 users, and Klikdokter has 11,000 users. Consequently, the total population under consideration is 847,000 users. The determination of the sample size adheres to the Slovin formula. This formula

Table 1.Relationship between Variables

Code	Hypothesis
H1	The greater the Performance Expectancy, the greater the interest in using digital healthcare applications
H2	The greater the Effort Expectancy, the greater the interest in using digital healthcare applications
H3	The higher the Social Influence, the greater the interest in using digital healthcare applications
H4	The better the Facilitating condition, the greater the interest in using digital healthcare applications
H5	The higher the Hedonic Motivation, the greater the interest in using digital healthcare applications
H6	The higher the FOMO, the greater the interest in using digital healthcare applications
H7	The greater the behavioral intention, the higher the frequency of behavior to use digital healthcare applications

Table 2. Variable Operational Definitions

Variable	Code	Indicator
Performance Expectancy	PE1	Useful
	PE2	Helpful/helpful
	PE3	Saving time
	PE4	Effective
Effort Expectancy	EE1	Easy to use
	EE2	Easy to understand
	EE3	Easy to learn
Social Influence	SI1	someone's influence
	SI2	Community influence
	SI3	Influencer/advertising influence
Facilitating Conditions	FC1	Device
	FC2	Knowledge
	FC3	Guidelines/tutorials
	FC4	Technology anxiety
Hedonic motivation	HM1	Interesting using new things (novelty enjoyment)
	HM2	It's fun to use new things (usage enjoyment)
FOMO (Fear Of Missing Out)	FO1	Experience / one step ahead
	FO2	Phenomenon
	FO3	Social group
	FO4	Always be the first
Behavioral Intention	BI1	use continuously
	BI2	Recommend
Use Behavior	UB1	Used for various health needs
	UB2	Intensity of use

is instrumental in ascertaining an appropriate sample size from a known population. Hence, the study included a sample size of 400 respondents.

Results and Discussion

The research collected information from 418 individuals throughout Indonesia, as indicated in Table 3. The breakdown indicated that 74.9% of the participants were women, whereas 25.1% were men. This indicates a higher female user presence in mobile health applications. In terms of age, the largest user groups were aged 31-40 years and above 40 years, accounting for 32.8% and 28.5% of users respectively. Users aged 20-30 years made up 20.3%, and the remaining age categories had a combined total of 5.9%. These findings suggest that young adults are the primary users of health applications, highlighting their engagement with technology during their productive years.

Regarding education, the majority had completed undergraduate degrees (45.9%), followed by diplomas (32.5%), and high school (11.7%). The remaining 9.9% represented other educational levels. This points to a relatively high level of education among health application users. Geographically, the respondents were predominantly from Bali Province (53.3%), with smaller percentages from East Java (7.6%), West Java (6.9%), Central Java (5.3%), Central Kalimantan (4.8%), DKI Jakarta and NTT Provinces (3.8% each), NTB Province (2.9%), and 11.6% from 22 other provinces in Indonesia. Among the 418 respondents, 199 were identified as active users of mobile health applications.

The evaluation of the measurement model, including factors like the reliability of individual items, internal consistency reliability, average variance extracted, and discriminant validity, as presented in Table 3, indicates the strong foundation of the research model chosen by the researchers. All indicators exceeded the specified minimum criteria, with outer loading values and composite reliability scores surpassing 0.7. Furthermore,

all variables utilized in the research displayed AVE values greater than the recommended 0.5 threshold. As a result, the study can confidently progress to the subsequent phase of analysis, which involves examining the structural model. Path analysis or the examination of path coefficients is employed to explore the impact of relationships between variables and assess the validity of model hypotheses. If the influence among pathways is statistically significant, it supports the path hypothesis, and conversely, if not significant, it challenges it. Detailed path coefficients and significance levels for each variable are presented in Table 4.

Variables that positively and significantly affect the intention to use (BI) are PE, FC, and HM. Variables that positively impact usage intention (BI) are SI and FOMO. However, the variable EE shows no significant effect. Notably, the path coefficient for EE is negative, indicating that it negatively influences the intention to use. The other variables have positive facilitating effects, although not all of them exhibit statistically significant effects. The BI variable further exhibits a positive impact on usage behavior (UB). Consequently, hypotheses H1, H3, H5, and H7 are supported, while hypotheses H2, H4, and H6 are not substantiated.

All Cronbach's Alpha > 0.7 means that all variables meet internal reliability consistency. All Composite reliability > 0.7 means that all variables meet internal reliability consistency. All AVE > 0.5 means that all valid variables converge (Hair et al., 2021). Convergent validity pertains to the accuracy of a variable when its outer loading exceeds 0.7, as mentioned by Cheung et al. (2023). All reliable indicators are observable. The primary indicator for the PE variable, which signifies time-saving in consulting a doctor or purchasing medicine, is PE3 with a substantial loading of 0.835. Similarly, the dominant EE variable, associated with ease of comprehending features, is best captured by EE3 with a loading of 0.847. The most prominent SI variable, involving the use of health applications due to recommendations from the community, finds its representation in SI2 with a high loading of 0.935. When it comes to FC, denoting sufficient knowledge for health app usage, FC2 stands out with a loading of 0.839. HM, centered around the fascination with health apps, is most clearly explained by HM1 with a loading of 0.923. Similarly, the dominant element of the Fear of Missing Out (FOMO), associated with the desire to stay up-to-date with online health trends, is most accurately symbolized as FOMO2, displaying a loading of 0.905. The main factor related to Behavioral Intention (BI), indicating the propensity to consistently utilize digital health applications for addressing health issues, is effectively captured by BI1, exhibiting a loading of 0.923. Lastly, the prominent factor of User Behavior (UB), signifying the frequent usage of digital health applications for health-related

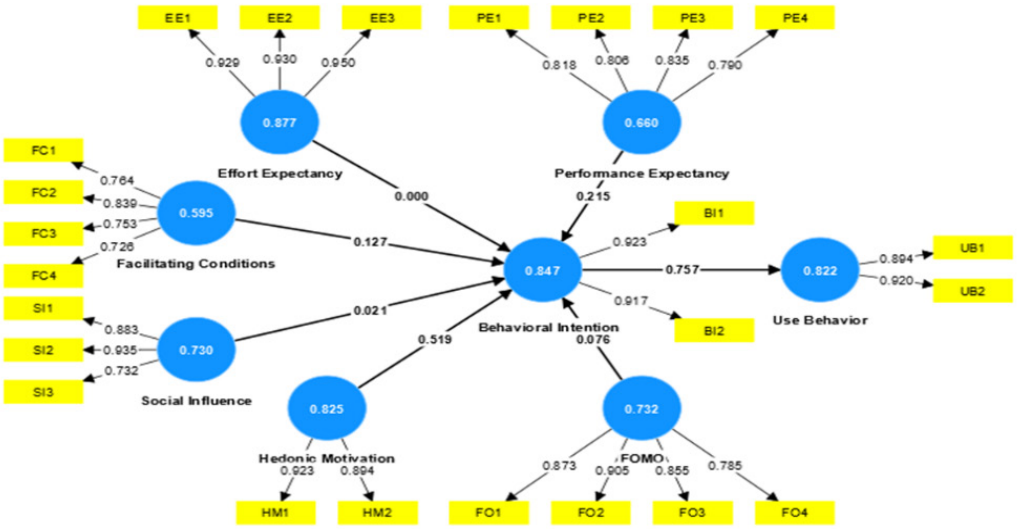

Figure 2. Graphic Output Algorithm

Table 3. Reliability and Validity and The Outer Model

Variable	Code	Standard factor loading	Cronbach's Alpha	CR	AVE
PE	PE1	0.818			
	PE2	0.806	0.830	0837	0.660
	PE3	0.835			
	PE4	0.790			
EE	EE1	0.929			
	EE2	0.930	0.930	0931	0.877
	EE3	0.950			
SI	SI1	0.883			
	SI2	0.935	0.816	0.918	0.730
	SI3	0.732			
FC	FC1	0.764			
	FC2	0839	0.774	0.777	0.595
	FC3	0.753			
	FC4	0.726			
HM	HM1	0.923	0.790	0.803	0.825
	HM2	0.894			
FOMO	FO1	0.873			
	FO2	0.905	0.878	0897	0.732
	FO3	0.855			
	FO4	0.785			
BI	BI1	0.923	0.819	0.820	0.847
	BI2	0917			
UB	UB1	0.894	0.785	0.795	0.822
	UB2	0.920			

Note: PE = Performance Expectancy; EE = Effort Expectancy; SI = Social Influence; FC = Facilitating Conditions; HM = Hedonic Motivation; FOMO = Fear Of Missing Out; BI = Behavioral Intention; UB = Use Behavior; CR = Composite Reliability; AVE = Average Variance Extracted

solutions, is appropriately represented by UB2, with a loading of 0.920.

Analysis of the direct effect of variable X (PE, EE, FC, SI, HM, FOMO) on variable Y1 (BI) and analysis of the direct effect of variable Y1 (BI) on variable Y2 (UB) can be seen in Table 4. One-sided testing is said significant effect if t > 1.65 or P < 0.05 (Chin, 2014). The objective of this research is to comprehend the fundamental elements influencing the utilization of mobile health apps, investigating whether digital healthcare represents a necessity or simply a transient fad. Through the utilization of structural equation modeling, six factors have been identified as potential influencers of user intention (BI): PE, EE, SI, FC, HM, and FOMO. Among the three variables that gauge perceived necessity (PE, EE, and FC), only two, PE and FC, demonstrate significant impact. Similarly, among the three variables reflecting the perception of trends (SI, HM, and FOMO), only HM holds statistical significance. The subsequent explanation delves into these findings in greater detail.

Performance Expectancy (PE) significantly and positively influences users' intention to use mobile health applications. This means that when users have higher expectations regarding the performance of the system, they are more inclined to be interested in using these apps for their health needs (Ammenwerth, 2019). This finding suggests that mobile health apps can enhance the effectiveness and efficiency of medical care. The main indicator of PE, specifically related to time-saving during medical consultations and prescription needs, aligns with previous research (Hannemann & Götz, 2021; Philippi *et al.*, 2021). This is consistent with studies that have shown that integrating online and offline services can reduce offline waiting times, breaking the constraints of time and location. This trend of adopting digital health technology has become more pronounced during the Covid-19 pandemic, as it ensures access to health services for a broader range

of individuals. Other similar research also found that analysis of mobile health insurance user perceptions showed optimal quality of information and quality of service (Rachmawati *et al*., 2021). This research further supports the idea that a stronger sense of perceived efficiency (PE) is linked to a higher likelihood of wanting to use mobile health apps. The numerical data emphasizes that users' desire to use these apps is impacted by how they view the medical services' efficiency and effectiveness, highlighting the growing importance of digital healthcare. This conclusion is backed by qualitative information, where participants point out the ease of online medical consultations, the usefulness and simplicity of these apps, and the flexibility to use them at any moment and location. As a result, Hypothesis 1 (H1) is accepted.

On the other hand, Effort Expectancy (EE) does not significantly affect users' behavioral intention (BI) to use mobile health applications. In other words, when users anticipate lower effort in using the system, it doesn't necessarily lead to a higher intention to use these applications for health-related purposes. This finding suggests that mobile health apps might not be very user-friendly or easy to learn. This aligns with prior research that emphasizes how factors related to effort can hinder the adoption and continued use of e-health innovations (Iyanna *et al*., 2022). Therefore, service providers in the digital health sector should prioritize improving the user experience to simplify the app usage process (Dash & Sahoo, 2022). The study suggests that the necessity to use mobile health apps might stem from their alignment with the Ministry of Health's guidelines during the pandemic rather than from their ease of use (Murhum *et al*., 2022). This finding contradicts the theory that higher EE leads to greater BI. Quantitative information indicates that the reduced desire to utilize mobile applications is impacted by the perceived inconvenience associated with using these apps. This suggests that digital healthcare might not be seen as a necessary or trendy option. Qualitative data further supports this by revealing respondents' struggles with understanding how to use these apps. In summary, the study underscores the importance of users' performance expectations in driving their intention to use mobile health applications, while the level of effort expectancy doesn't seem to have the same impact. This has implications for improving the user experience and highlighting the necessity of digital healthcare, especially during challenging times like the Covid-19 pandemic. H2=rejected.

The impact of Social Influence (SI) on behavioral intention (BI) toward using mobile health applications is positive, although not statistically significant. This suggests that higher levels of social influence correspond to increased interest in these apps. The results imply that factors like social groups, communities, and advertisements influence the intention to use these apps. Notably, the influence of the community (SI2) has a positive effect, indicating that social groups positively affect nearby users, even though the effect is not significant. These results are consistent with earlier studies that suggest the growth of digital healthcare doesn't erode confidence in conventional medical methods (Kukoryte, 2022). Positive and negative effects of SI on attitudes towards digital services are also present. The positive aspect is seen when friends and family recommend digital treatment (Hardebro & Edblad, 2021; Philippi *et al*., 2021). The community and environment play a role in convincing users to adopt mobile health services (Zhu *et al*., 2023). However, a contrary study shows SI harms BI, especially when digital health consulting lacks advertising and has limited users (Dash & Sahoo, 2022). The COVID-19 pandemic has also made mobile health apps essential regardless of social impact (Murhum *et al*., 2022). This challenges the theory that higher SI leads to greater BI. On the whole, quantitative data suggests that the influence of others, communities, and advertisements doesn't significantly affect the intention to use these apps, implying that digital healthcare is neither a necessity nor a trend. This is supported by qualitative information demonstrating favorable reactions due to community impact, online media visibility, and marketing efforts on search engines and social platforms. H3 has been rejected.

Regarding Facilitating Conditions (FC), they significantly and positively affect BI. This implies that better conditions for using

mobile health apps lead to greater interest in their use. These results show that apps with adequate knowledge, guidance, device support, and network assistance support boost usage intention. FC encompasses internal and external factors (Zhu *et al*., 2023). External factors include network conditions, device support, and app usage instructions. Internal factors involve individual knowledge and technology anxiety. Good FC, specifically having sufficient knowledge for using health apps (FC2), aligns with past research where the ability to use affects the acceptance of digital health services (Ammenwerth, 2019; Gupta, 2022). Leveraging technology infrastructure for a seamless digital healthcare experience is essential for user acceptance (Kang *et al*., 2022). Learning about new digital health technology enhances convenience and the importance of FC in sustainable usage behavior is emphasized (Bai & Guo, 2022). These findings confirm the theory that better FC leads to greater BI. Quantitative data supports this, indicating that good system facilitation conditions influence the intention to use mobile apps, underscoring digital healthcare's necessity. Qualitative data further reinforces this, with respondents citing factors like application usability, easy access, and speed as reasons for positive responses. H4=accepted.

Hedonic Motivation (HM) plays a significant and positive role in shaping the intention to use mobile health applications. This suggests that a stronger desire for pleasure and enjoyment from using technology leads to a greater interest in utilizing mobile health apps. This aligns with previous research indicating that people's interest and acceptance of new technology hinge on the enjoyment they derive from using it, rather than the fear of not being able to use it effectively (Nikolopoulou *et al*., 2021; Sudburya *et al*., 2013). This finding underscores the idea that higher levels of hedonic motivation are associated with greater behavioral intention. From a quantitative standpoint, the inclination to use mobile applications is influenced by the enjoyment and pleasure derived from utilizing technology, reflecting the growing trend of digital healthcare. Qualitative data, gathered through open-ended questions, also supports this conclusion, as respondents express positivity towards mobile health apps due to their appealing and user-friendly features (H5=accepted).

On the other hand, the Fear of Missing Out (FOMO) positively affects behavioral intention (BI), although not to a statistically significant degree. This implies that a heightened fear of missing out on interesting experiences contributes to a greater interest in mobile health applications. This finding is consistent with previous studies that highlight humans' inherent desire to be part of communities and their concerns about missing out on information and opportunities, which often govern their behavior (Dinçer *et al*., 2022; Oztemel, 2019; Yu *et al*., 2020). It's noteworthy that changes in behavior attributed to technology, such as the tendency to observe others' actions and seek information due to the availability of new digital tools, are noteworthy (Li *et al*., 2020; Tomczyk, 2021; Yazkan *et al*., 2022). However, contrary to the initial hypothesis, the quantitative data suggests that the fear of missing out, along with anxiety over missing interesting events, does not significantly drive the intention to use mobile applications in the context of digital healthcare. The qualitative responses from the questionnaire also indicate that respondents are positively inclined towards mobile health applications due to reasons such as staying updated on online doctor services and trying out new applications (H6=rejected).

The positive and significant impact of behavioral intention (BI) on the actual usage behavior (UB) of mobile health applications is evident. This means that when users have a strong desire to use MHAs, they tend to use them more frequently. This connection suggests that how often someone uses a health app is related to their intention to use it. Notably, the most significant factor contributing to this connection is a specific aspect of BI, referred to as BI1. This aspect represents a consistent interest in using digital health apps to manage health concerns. This finding is consistent with previous research, emphasizing that BI is a crucial factor in predicting continuous use of digital health services, especially in the context of increased digital engagement during the Covid-19 pandemic (Bai & Guo, 2022; Dash & Sahoo, 2022; Murhum *et al*., 2022; Zhu *et al*.,

Tabel 4. Hypothesis Test

	Oh sample	Means	SD	T statistics	P-value
BI→UB	0.757	0.759	0.034	22,514	0.000*
PE→BI	0.215	0.211	0.094	2,289	0.012
EE→BI	0.000	-0.009	0.063	0.003	0.499
FC→BI	0.127	0.135	0.073	1,731	0.042
SI→BI	0.021	0.022	0.070	0.297	0.383
HM→BI	0.519	0.522	0.072	7.159	0.000*
FOMO→BI	0.076	0.081	0.077	0.984	0.163

Note: *significant at p<0.05; SD = standard of deviation

2023). This underscores the idea that higher BI leads to more frequent usage. The analysis of quantitative data further supports the idea that how often people use health apps is strongly influenced by their intention to use them, highlighting the growing importance of these apps in healthcare. This conclusion is also backed by qualitative data from open-ended survey responses, where participants express their excitement about health apps due to their interest in understanding the app's features and benefits. They also acknowledge the significance of health and technological advancements, which contribute to the convenience of using these apps. Thus, hypothesis H7 is validated.

Conclusion

The outcomes of this research bring promising news for developers of digital healthcare solutions. It reveals that there is a genuine demand and need for digital healthcare services, highlighting a market potential focused on efficiency and effectiveness in terms of time and cost. While the primary driver is the necessity of digital healthcare, there are also hedonic factors that contribute, indicating a blend of essential needs and trend-related factors. Even though the main motivation is the necessity, developers should consider both aspects to gain wider acceptance. Enhancing usability features and creating an appealing interface are key to this effort. Addressing user feedback suggests improving ease of use, enhancing the user interface, and increasing advertising efforts, as community influence was found to have a limited effect.

The study's findings lend theoretical support to shaping improved mobile health applications, particularly for societies that view digital healthcare as indispensable. The evolution of digital healthcare services offers avenues for future advancements. On the flip side, digital service providers need to refine their networks to foster wider adoption of digital health information systems, positioning them not just as trends but as essentials.

References

Ammenwerth, E., 2019. Technology Acceptance Models in Health Informatics: TAM and UTAUT. *Studies in Health Technology and Informatics*, 263(2019), pp.64–71.

Bai, B., & Guo, Z., 2022. Users' Continuance Usage Behavior Towards Digital Health Information System Driven by the Digital Revolution Under COVID-19 Context: An Extended UTAUT. *Psychology Research and Behavior Management*, 15(2022), pp.2831–2842.

Budi, S.C., Jayanto, I., & Kusumawaty., 2021. Understanding Digital Technology Trends in Healthcare and Preventive Strategy. *International Journal of Health and Medical Sciences*, 4(3), pp.347–354.

Butcher, C.J.T., & Hussain, W., 2022. Digital Healthcare: The Future. *Future Healthcare Journal*, 9(2), pp.113–117.

Cheung, G.W., Cooper-Thomas, H.D., Lau, R.S., & Wang, L.C., 2023. Reporting Reliability, Convergent and Discriminant Validity with Structural Equation Modeling: A Review and Best-Practice Recommendations. *Asia Pacific Journal of Management*, 2023.

Chin, W.W., 2014. *The Partial Least Squares Approach to Structural Equation Modeling*, 295(2), pp.295-336.

Dash, A., & Sahoo, A.K., 2022. Exploring Patient's Intention Towards E-Health Consultation Using an Extended UTAUT Model. *Journal of Enabling Technologies*, 16(4), pp.266–279.

Dinçer, E., Saygın, M., & Karadal, H., 2022. The Fear of Missing Out (FoMO). *Researchgate*,

28(January), pp.631–651.

Elhai, J.D., Yang, H., & Montag, C., 2021. Fear of Missing Out (Fomo): Overview, Theoretical Underpinnings, and Literature Review on Relations with Severity of Negative Affectivity and Problematic Technology Use. *Brazilian Journal of Psychiatry*, 43(2), pp.203–209.

Gupta, A.D., 2022. Adoption of Digital Healthcare with the Concept of the Patient as an Organisation. *Research Square*, 17(2022).

Hair, J., Ringle, H., Sarstedt, M., & Danks, R., 2021. *Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R*.

Hannemann, N., Götz, N.A., Schmidt, L., & Hubner, U.B.B., 2021. Patient Connectivity with Healthcare Professionals and Health Insurer Using Digital Health Technologies During the COVID-19 Pandemic: A German Cros-Sectional Study. *BMC Medical Informatics and Decision Making*, 21(1).

Hardebro, V., & Edblad, R., 2021. *Exploring Elderly Patients´ Behavior & Needs Inside Digital Healthcare Platforms*. Luleå University of Technology Department of Social Sciences, Technology and Arts.

Iyanna, S., Kaur, P., Ractham, P., & Talwar, S., 2022. Digital Transformation of Healthcare Sector. What is Impeding Adoption and Continued Usage of Technology-Driven Innovations by End-Users? *Journal of Business Research*, 153, pp.150–161.

Jeffree, M.S., Ahmedy, F., & Avoi, R., 2020. Integrating Digital Health for Healthcare Transformation Conceptual Model of Smart Healthcare for Northern Borneo. *International Journal of Advanced Trends in Computer Science and Engineering*, 9(1).

Kang, H.J., Han, J., & Kwon, G.H., 2022. The Acceptance Behavior of Smart Home Health Care Services in South Korea: An Integrated Model of UTAUT and TTF. *International Journal of Environmental*, 19(13279).

Kruszyńska-Fischbach., & Sysko-Romańczuk., 2022. Organizational e-Health Readiness: How to Prepare the Primary Healthcare Providers' Services for Digital Transformation. *International Journal of Environmental Research and Public Health*, 19(3973).

Kukoryte, E., 2022. *The Impact of Digital Technologies on the UK Healthcare: A Human-Centered Study*.

Li, L., Griffiths, M. D., Mei, S., & Niu, Z., 2020. Fear of Missing Out and Smartphone Addiction Mediates the Relationship Between Positive and Negative Affect and Sleep Quality Among Chinese University Students. *Frontiers in Psychiatry*, 11(August), pp.1–10.

Marikyan, D., & Papagiannidis, S., 2021. The Unified Theory of Acceptance and Use of Technology. *International Journal of Sociotechnology and Knowledge Development*, 12(3), pp.79–98.

Murhum, N.N., Durachman, Y., & Fetrina, E., 2022. Pengukuran Penerimaan Pengguna Pada Aplikasi Kesehatan Halodoc Menggunakan Model Unified Theory of Acceptance and Use of Technology 2. *Jurnal SNATI*, 1(2), pp.24–31.

Nikolopoulou, K., Gialamas, V., & Lavidas, K., 2021. Habit, Hedonic Motivation, Performance Expectancy and Technological Pedagogical Knowledge Affect Teachers' Intention to Use Mobile Internet. *Computers and Education Open*, 2(March), pp.100041.

Oztemel, Z.T.K., 2019. Examining the Relationships between Facebook Intensity , Fear of Missing Facebook Yoğunluğu , Gelişmeleri Kaçırma Korkusu ve Akıllı Telefon Bağımlılığı Arasındaki. *Researchgate*, 6(April), pp.91–113.

Philippi, P., Baumeister, H., Apolinário-Hagen, J., Ebert, D.D., Hennemann, S., Kott, L., Lin, J., Messner, E.M., & Terhorst, Y., 2021. Acceptance Towards Digital Health Interventions – Model Validation and Further Development of the Unified Theory of Acceptance and Use of Technology. *Internet Interventions*, 26(2021).

Rachmawati, S., Suryadi, I., & Diajeng, R., 2021. Jurnal Kesehatan Masyarakat Higeia. *Kesehatan Masyarakat KEMAS*, 17(2), pp.625–634.

Sudburya, D., Saeeda, A., Nnajiubaa, U., Murugesh-Warrena, A., Mashayekhia, S., Abdel-Gadira, S., Dubba, S., Caris, J., & Cox, B., 2013. An Extension of the UTAUT 2 in a Healthcare Context. *UK Academy for Information Systems Conference, Proceedings 2013*, 15(7).

Tomczyk, Ł., 2021. FOMO Among Polish Adolescents. Fear Of Missing Out as a Diagnostic and Educational Challenge. *Trends and Applications in Information Systems and Technologies*, 1365(2021).

Venkatesh, V., Morris, M.G., Davis, G.B., & Davis, F.D., 2003. User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly: Management Information Systems*, 27(3), pp.425–478.

Venkatesh, V., Thong, J.Y.L., & Xu, X., 2012. Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology. *MIS Quarterly: Management*

Information Systems, 36(1), pp.157–178.

Yazkan, G., Ugurlu, N., & Birgili, F., 2022. The Assesment Of Fear Of Missing Out (FOMO) Among University Students. *Ejons International Journal*, 22(2022), pp.472–481.

Yu, S.C., Chen, H.R., Liu, A.C., & Lee, H.Y., 2020. Toward Covid-19 Information: Infodemic or Fear of Missing Out?. *Healthcare (Switzerland)*, 8(4), pp.1–8.

Zhu, Y., Zhao, Z., Guo, J., Wang, Y., & Zhang, C., 2023. Understanding Use Intention of mHealth Applications Based on the Unified Theory of Acceptance and Use of Technology 2 (UTAUT-2) Model in China. *International Journal of Environmental Research and Public Health*, 20(3139).

Zulkarnain., & Dkk., 2021. Informasi Teknologi di Bidang Kesehatan. *Researchgate*, 2021 (May).