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Continuance Intention of Mental Health Telemedicine Applications: An Extended UTAUT2 Analysis with Age Moderation in Indonesia

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Abstract. The abstract, while containing basic information about the study, lacks crucial methodological details and theoretical positioning that would help readers quickly assess the paper's contribution. It fails to mention which specific theoretical model was extended beyond a basic reference to PLS-SEM and doesn't provide sufficient detail about the sample characteristics that significantly impact the findings. A stronger abstract should specify that this represents an "extended UTAUT2 model application" and mention key sample characteristics such as the predominance of young adults aged 17-27, which is crucial for interpreting the results. The results show that social influence (β=0.135), performance expectancy (β=0.142), price value (β=0.293), and privacy concern (β=0.204) are significant predictors of continuance intention. The model explains 47.6% of the variance in continuance intention (R^2 = 0.476). Notably, age was found to significantly moderate the relationship between price value and continuance intention (β=-0.142). These findings offer theoretical insights into technology acceptance in sensitive health contexts and provide practical recommendations for service providers to tailor their strategies.

Keywords: Mental Health Telemedicine, Continuance Intention to Use, Social Influence, Price Value, Privacy Concerns, Generational Moderation

1. Introduction

In the contemporary digital era, the internet has become an integral component of Indonesian society. This is supported by a significant increase in Indonesia's internet users, which reached 212.9 million in 2023. (Petrosyan, 2024). This figure indicates a substantial increase compared to the 2021 statistics, which recorded a mere 62.1% of the population having internet access (Central Bureau of Statistics, 2023).

Indonesia, a country comprising 13,000 islands, exhibits a demographic that is characterized by a significant proportion of the population, approximately two-thirds of the total, who utilize the internet. This statistic highlights the nation's significant potential to implement telemedicine, which can help reduce the healthcare access gap between urban and rural regions. However, the implementation of telemedicine services is hindered by a combination of factors, including a lack of interest and resources. This has led to a scenario in which medical professionals exhibit reluctance to practice in rural areas within Indonesia. Nevertheless, the provision of telemedicine services holds promise in addressing this issue, by facilitating access to healthcare services and medical professionals for individuals residing in rural areas.

Despite its third place ranking in global health app usage, Indonesia has demonstrated a notable commitment to health technology adoption (Pusparisa, 2020), Ironically, access to mental health services remains constrained, particularly in remote regions. This is a salient contrast, given the high prevalence of mental disorders in Indonesia, with 9.8% of the population encountering serious mental disorders and an additional 19.7% experiencing mild mental disorders (Indonesian Ministry of Health, 2021). In the Indonesian adolescent population, ranging in age from 10 to 17 years, approximately one in three adolescents exhibits indications of mental health challenges.

The advent of telemedicine has emerged as a promising solution to the prevailing challenges in accessing mental healthcare services. This innovative approach utilizes communication technology, such as video calls or online chats, to facilitate consultations between patients and mental health professionals (World Health Organization , 2012). The implementation of telemedicine has the potential to enhance accessibility to services for individuals residing in remote areas, those with demanding schedules, and those confronted with mobility restrictions. Additionally, it has the capacity to mitigate the social stigmatization often associated with mental health condition.

A substantial body of research has demonstrated the efficacy of telemedicine in the delivery of mental health services. For instance, a study conducted in Indonesia revealed that patients who underwent online therapy for depression demonstrated comparable levels of improvement to those who received face-to-face therapy. (Queensland Centre for Mental Health Research, 2023).

Despite the numerous advantages offered by telemedicine, it is imperative to acknowledge its limitations in fully supplanting in-person mental health services. In certain instances, the necessity for face-to-face interaction may persist, particularly in the establishment of a therapeutic rapport and the management of intricate mental health concerns.

A study of telemedicine services reveals that several applications are currently in use by the Indonesian public for online consultations, also known as teleconsultation. These include Halodoc, Alodokter, KlikDokter, Riliv, Bicarakan.id, Good Doctor, Psikologimu, SehatQ, Kalm, and Ibunda. The results of a survey conducted by Populix indicate that 54% of the 1,005 respondents have previously utilized these mental health services. The application Halodoc, which provides mental healthcare services, is the most widely known by the Indonesian public, with 79% of 543 respondents (54% of 1,005 respondents) having accessed mental healthcare services, followed by Alodokter (55%), KlikDokter (28%), and Riliv (19%) (Muhamad, 2023).

As a service provider of psychological well-being applications, this application facilitates communication between users and psychologists or psychiatrists via telephone, video call, and online chat. The sustainability of this service is influenced by various factors, including social influence,

perceived usefulness, perceived ease of use, performance expectancy, price value, trust, and privacy concern.

Despite Indonesia's high digital health engagement, three critical research gaps exist in understanding mental health telemedicine continuance: first, limited research on post-adoption behavior in developing countries where infrastructure and cultural factors differ significantly from Western contexts; second, a lack of age-differentiated analysis in technology acceptance for mental health services, which is crucial given generational differences in both technology adoption and mental health stigma; and third, an insufficient understanding of privacy concerns specific to mental health contexts in collectivist cultures where family involvement and social stigma play distinctive roles.

The data presented herein derives from a comprehensive analysis of four telemedicine applications specializing in mental healthcare: Halodoc, Alodokter, KlikDokter, and Riliv. This analysis utilizes reviews from Google Play Store during the period spanning October 2023 to October 2024 (Google Play Store, 2024). The objective of this study is to explore the potential of telemedicine in providing mental healthcare services in Indonesia. Therefore, this study adapts the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT 2) to assess the continuance intention to use telemedicine for mental healthcare services.

While foundational models like the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT2) provide robust frameworks, they were primarily developed for general consumer or organizational technologies. The unique context of mental health telemedicine involves sensitive factors such as social stigma, heightened privacy risks, and the expectation of a therapeutic alliance, which may not be fully captured by these traditional models (Apolinário-Hagen, Hennemann, Fritsche, & Drüge, 2019); (Venkatesh, Thong, & Xu, 2016). Therefore, this study argues for an extended framework to develop a more nuanced understanding of what drives continuance intention in this specific, high-stakes domain.

2. Literature Review

2.1. Telemedicine

Telemedicine, also known as remote healthcare, is a term used to describe the use of information technology to deliver healthcare services to patients who are geographically isolated. This service has been shown to be particularly beneficial for individuals residing in remote areas, those with limited mobility, and others who encounter significant challenges in accessing in-person medical care (World Health Organization , 2012).

The proliferation of telemedicine in Indonesia is attributable to the pandemic. The government of Indonesia implemented a lockdown, and in conjunction with 11 private telemedicine providers, endeavored to broaden the reach of telemedicine services during the period of the pandemic, which commenced in July 2021 (Aditya & Indradjaja, 2022). Telemedicine has undergone a substantial surge in utilization, with a sixfold increase observed in GoodDoctor and a twofold increase in Alodokter. This has led to a substantial increase in the number of new registrations, reaching a total of thirty million. (Aditya & Indradjaja, 2022).

2.2. Social Influence

Social influence significantly impacts an individual's decision to pursue mental health services, particularly telemedicine. In Indonesia, the prevailing societal attitudes towards mental health, often characterized by stigma and a de-emphasis on mental well-being compared to physical health, contribute to this influence (Fadli, 2021). Social influence is defined as the degree to which an individual perceives that important others, such as family and friends, believe they should use a new system, and it is a core determinant in technology adoption frameworks like UTAUT (Dwivedi, Rana, Jeyaraj, & Clement, 2019). This suggests that social support and recommendations play a crucial role

in overcoming apprehensions about seeking mental health treatment, especially in contexts where face-to-face therapy is perceived as stigmatized.

2.3. Perceived Usefulness

Perceived usefulness, as defined by Venkatesh et al (Venkatesh & Davis, 1996), refers to an individual's belief in the effectiveness of a system in enhancing their performance. In the context of telemedicine, this concept is crucial as it assesses the value of remote healthcare services, including diagnosis, interventions, and patient monitoring (Kicholo, et al., 2020). Studies have shown that perceived usefulness significantly influences the utilization of telemedicine for mental health and sustainability purposes, with higher utilization often linked to improved mental well-being (Yuduang, et al., 2022).

2.4. Perceived Ease of Use

Within the Technology Acceptance Model (TAM), perceived usefulness and perceived ease of use are fundamental constructs. Perceived ease of use, as defined by Venkatesh et al (Venkatesh & Davis, 1996), refers to the extent to which users believe a technology is easy to operate. Research has consistently shown that ease of use significantly influences perceived usefulness and intention to use technology (Singh & Dev, 2021). In the context of telemedicine, the ease of use of an application is crucial, particularly for older adults, as it directly impacts their interest in using the technology (Morey, Stuck, & Rogers, 2019). User-friendly interfaces and intuitive data presentation are key factors in enhancing perceived ease of use and, consequently, increasing the likelihood of technology adoption.

2.5. Performance Expectancy

As stated by Venkatesh et al (Venkatesh, Thong, & Xu, 2012), performance expectancy is a concept used to measure the degree of confidence an individual has in the efficacy of a system in facilitating the completion of a task. The greater the perceived benefit of a system in terms of task completion, the higher the performance expectancy. This phenomenon can be attributed to the propensity of individuals to prefer tools or methods that allow them to perform tasks with greater efficiency and effectiveness.

Performance expectancy in telemedicine is defined as the degree to which individuals anticipate telemedicine's potential to enhance their healthcare management capabilities. This construct encompasses perceptions regarding the benefits of telemedicine, including its capacity to improve accessibility to healthcare services, facilitate seamless consultations, optimize time management, and ensure superior healthcare outcomes. Performance expectancy, a key construct in the UTAUT model, refers to the degree to which an individual believes that using a system will help them attain gains in performance or outcomes (Dwivedi, Rana, Jeyaraj, & Clement, 2019). In the telemedicine context, this translates to the user's belief that the service will effectively improve their health management.

2.6. Perceived Value

Perceived Price value, as defined by Venkatesh et al (Venkatesh, Morris, Davis, & Davis, 2003), refers to the perceived worth of a technology relative to its cost. In the context of telemedicine, where users typically incur costs for services, price value significantly influences their intention to use. This is because users expect a positive return on their investment, seeking services that provide value commensurate with the price paid.

2.7. Trust

In the context of telemedicine, trust is a user's willingness to depend on the provider, reflecting their belief in the provider's integrity and ability to protect sensitive information (McKnight & Chervany, 2002). This necessity is not only a psychological foundation for the user but also a formal obligation for the provider. As mental healthcare providers, it is imperative to maintain the confidentiality of patient information and ensure compliance with applicable regulations to prevent the dissemination of

personal data. In Indonesia, this is specifically regulated by laws such as Law No. 27/2009 on Health and the Minister of Health Regulation No. 69/2016 on Medical Records.

2.8. Privacy Concern

Service providers must consider user concerns regarding privacy in mental health telemedicine applications, as these applications encompass sensitive user data and privacy issues related to the stigma prevalent in Indonesian society (see previous chapter). The manner in which service providers maintain and utilize the data obtained by users can have a positive or negative impact.

2.9. Hypothesis Development

Research consistently highlights the significance of social influence in the adoption of telemedicine services. Studies by (Venkatesh, Thong, & Xu, 2012; Samar, Munawar, & Mahmoud, 2021), as well as (Kaphzan, Noiman, & Negev, 2022), and (Ayesha, Muhammad, & Priyanka, 2020) have all identified social influence as a key factor influencing individuals' interest in utilizing mental health telemedicine. This underscores the importance of social support and peer recommendations in driving the adoption of telemedicine services for mental health. Based on the literature, the following hypothesis is proposed:

H1: Social influence has a positive influence on continuance intention to use

Some research has highlighted the significant impact of perceived usefulness on various aspects of technology adoption. (Kamal, Shafiq, & Kakria, 2020) demonstrated that perceived usefulness significantly influences perceived ease of use and the overall value of medical information technology systems. (Singh & Dev, 2021) further emphasized the mediating role of perceived usefulness in shaping individuals' intentions and perceptions regarding the utilization of scientific information, including in the context of telemedicine. Based on the literature, the following hypothesis is proposed:

H2: Perceived usefulness has a positive influence on continuance intention to use

Several studies have demonstrated the positive impact of ease of use and accessibility on the effectiveness of telemedicine for mental health (Yuduang, et al., 2022). By improving the ease of use and accessibility of telemedicine applications, healthcare providers and practitioners can enhance their perceived usefulness and encourage greater adoption of these services. This highlights the critical role of user-friendly design and accessibility in promoting the successful implementation and utilization of telemedicine for mental health care. Based on the literature, the following hypothesis is proposed:

H3: Perceived ease of use has a positive influence on continuance intention to use

As indicated by Serrano et al (Serrano, Mendes, Lizarelli, & Ganga, 2020), performance expectancy exerts a positive influence on the adoption of telemedicine. Research findings indicate that adults in Brazil are inclined to adopt telemedicine, irrespective of its complexity. Performance expectancy also exerts an influence on the propensity to make appointments with physicians (Anne, Ana M., & Yagüe, 2022). Based on the literature, the following hypothesis is proposed:

H4: Performance expectancy has a positive influence on continuance intention to use

Studies have consistently highlighted the importance of price value in the adoption and sustainability of telemedicine services. (Tamilmani, Rana, Dwivedi, Sahu, & Roderick, 2018) found that price value was often overlooked in research due to a focus on free or low-cost technologies. However, in situations like the COVID-19 pandemic, where government subsidies made telemedicine more affordable, price value became a more prominent factor. Research by Shi et al (Shi, Yan, Wang, & Yu, 2021) and (Hartono, Della, Kawi, & Yuniarty, 2021) further emphasizes the critical role of price value in determining patient satisfaction and the long-term viability of telemedicine services. Based on the literature, the following hypothesis is proposed:

H5: Price Value has a positive influence on continuance intention to use

Foundational research in information systems posits that trust is a critical antecedent to user engagement in digital environments (McKnight & Chervany, 2002). In the context of telemedicine, where users share highly personal health data, trust is paramount for fostering a long-term relationship. Affective trust and cognitive trust have been shown to have a significant impact on intention to continue using healthcare services among older adults (Meng, Guo, Peng, Ye, & Lai, 2021). These effects are further moderated by the perceived usefulness of health services and satisfaction with continuity of care. Based on the literature, the following hypothesis is proposed:

H6: Trust has a positive influence on continuance intention to use

Privacy concerns, which represent a user's apprehension about the potential misuse of their personal information, act as a significant barrier to the adoption of online services (Bansal, Zahedi, & Gefen, 2016). Given the extreme sensitivity of mental health data, it is hypothesized that these concerns will negatively influence a user's intention to continue using telemedicine services. Conversely, privacy concerns pertaining to the utilization of telemedicine have been shown to exert a favorable influence on the usage patterns observed by (Singh & Dev, 2021). Based on the literature, the following hypothesis is proposed:

H7: Privacy concern has a positive influence on continuance intention to use

In Indonesia's rapidly digitizing landscape, where internet penetration is extensive, telemedicine holds immense potential to bridge the gap in mental healthcare access, particularly in underserved regions. Despite high health app usage, significant mental health challenges persist, making telemedicine a crucial solution to enhance accessibility and combat stigma. This research specifically investigates the factors driving the continued use of mental health telemedicine, including social influence, perceived usefulness, perceived ease of use, performance expectancy, price value, trust, and privacy concern.

Crucially, this study examines the moderating role of age, recognizing that mental health awareness and acceptance are more prevalent among younger generations in Indonesia. Understanding how age influences the impact of these factors on the continuance of intention to use mental health telemedicine is vital. This nuanced insight will enable providers like Halodoc and Alodokter to tailor their strategies, ensuring sustained user engagement and fostering a more equitable and accessible mental healthcare system across all generations in Indonesia. Based on the literature, the following hypothesis is proposed:

H8a: Age has a positive influence as moderation between social influence and CTU

H8b: Age has a positive influence as moderation between perceived usefulness and CTU

H8c: Age has a positive influence as moderation between perceived ease of use and CTU

H8d: Age has a positive influence as moderation between performance expectancy and CTU

H8e: Age has a positive influence as moderation between price value and CTU

H8f: Age has a positive influence as moderation between trust and CTU

H8g: Age has a positive influence as moderation between privacy concern and CTU

After formulating the hypothesis, a research model can be constructed as shown in Figure 1. The model follows the variables of the TAM and UTAUT2 models, with seven independent variables: Social Influence (SI), Perceived Usefulness (PU), Perceived Ease of Use (PEU), Performance Expectancy (PE), Perceived Value (PV), Trsut (T) and Privacy Concern (PC); one dependent variable, Continuance Intention to Use Telemedicine (CTU) and Age as a moderating variable.

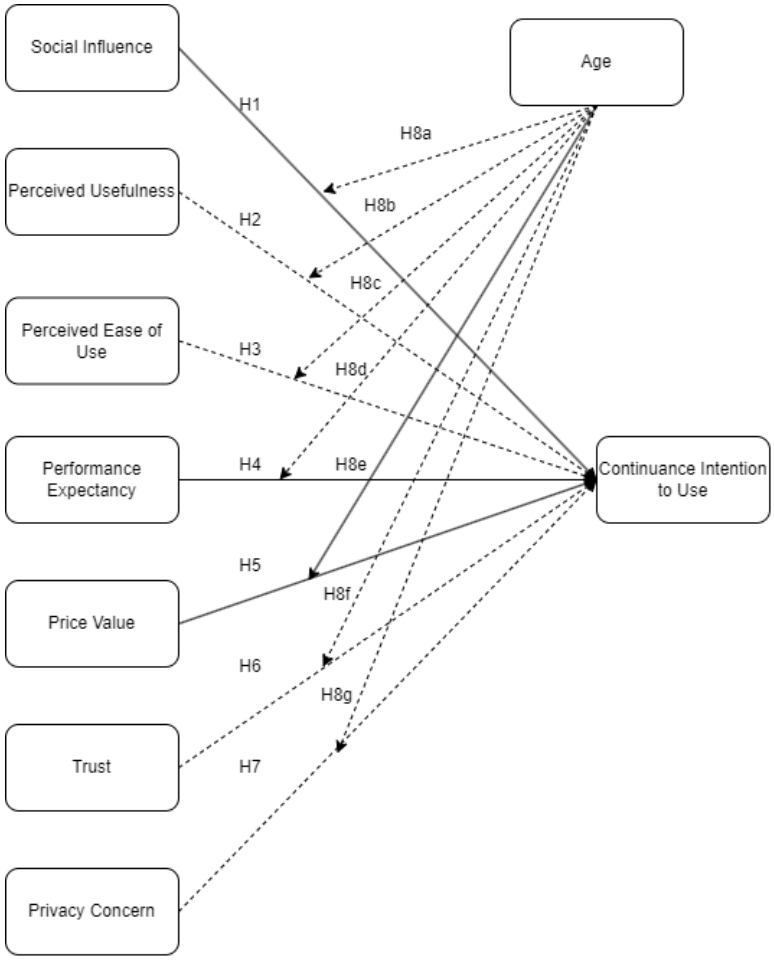

Fig.1: Research Model

3. Method

This study aimed to identify the factors influencing the 'continuance intention to use' of mental health applications. Additionally, the study sought to determine whether age or generation affects continuance intention in conjunction with other variables. This study employed a modified model based on existing issues and feedback from Google Play Store reviews.

Relevant factors for this study were identified by reviewing previous literature and analyzing the current context in Indonesia (Fadli, 2021). The results of this review identified the variables of social influence, trust, and privacy concerns as independent variables. Other independent variables, adopted from modifications of TAM and UTAUT, and also based on complaints from professionals serving individuals with mental illness, include perceived usefulness, perceived ease of use, performance expectations, price value, trust, and privacy concern.

This quantitative study focused on individuals who had previously utilized telemedicine services for mental health needs and were not limited by age. The study's population was derived from a comprehensive list of healthcare providers offering mental health services, which exceeded twenty million individuals (Litak, 2018). However, due to the challenges in accurately determining the exact number of users of telemedicine services for mental health, this population was deemed to be unlimited.

The present study will concentrate on Indonesia, encompassing the Jabodetabek region, the island of Java, and other regions outside of Java. An online survey was administered from October to December

2024 using Google Forms. The survey instrument consists of three sections: screening questions, demographic questions, and measurement of variables using a 5-point Likert scale.

For this research, Purposive Sampling was employed to collect data via Google Forms from respondents in the Jakarta and Tangerang areas who had experience using telemedicine for mental health services and completed the questionnaire. The sample size of 548 respondents is considered adequate and robust for PLS-SEM analysis. A post-hoc power analysis indicated that this sample size provides a statistical power exceeding 0.99 to detect even small effect sizes ($f^2 = 0.02$) at a significance level of $\alpha = 0.05$, which ensures the stability and reliability of the model estimates. The collected data was then analyzed using Structural Equation Modeling (SEM), processed with SMART PLS 4, adhering to a formal academic structure with clear, objective language to maintain methodological rigor.

Ethical considerations were prioritized throughout this study. All participants were provided with a clear explanation of the research objectives and assured that their participation was voluntary and that their responses would be anonymous and confidential. Informed consent was digitally obtained from all respondents before they could proceed to the questionnaire.

As the data for both independent and dependent variables were collected from the same source at the same time, common method bias (CMB) was a potential concern. To mitigate this, several procedural remedies were implemented. The anonymity of respondents was guaranteed to reduce social desirability bias, and the questionnaire items were worded clearly and concisely to avoid ambiguity.

Table.1. Variables and Indicators in Model Building

Variables	Questionnaire	Source
Social Influence (SI)	I would use a mental health app if people who are important to me think I should use it (SI1)	(Dwivedi, Rana, Jeyaraj, & Clement, 2019)
	I will use a mental health app recommended by others (SI2)	
	I will use a mental health app recommended by family (SI3)	
	I will use a mental health app recommended by a friend / companion (SI4)	
Perceived Usefulness (PU)	I can solve my problems by using mental health apps (PU1)	(Venkatesh, Thong, & Xu, 2012)
	I can consult a psychologist/psychiatrist through a mental health app without having to meet in person (PU2)	
	I found the services of the mental health app useful (PU3)	
	The mental health app provides features that are useful to me (PU4)	
Perceived Ease of Use (PEU)	I found it easy to learn how to use the mental health app (PEU1)	(Venkatesh, Thong, & Xu, 2012) (Yuduang, et al., 2022)
	I can use the mental health app easily (PEU2)	
	I feel using a mental health app does not require much effort (PEU3)	
	The mental health app has a look that appeals to me (PEU4)	
Performance Expectancy (PE)	I feel that the mental health app can function well as a tool to find a psychologist/psychiatrist (PE1)	(Venkatesh, Thong, & Xu, 2012)
	I feel like mental health apps give me an advantage (PE2)	
	I feel the mental health app is working well according to my expectations (PE3)	
	I can save time consulting a psychiatrist/psychologist using a mental health app (PE4)	
Perceived Value (PV)	Mental health apps provide consultation services at an affordable price for me (PV1)	(Dwivedi, Rana, Jeyaraj, & Clement, 2019)
	The mental health app provides me with a qualified psychologist/psychiatrist (PV2)	
	Mental health app provides a good service for the price I pay (PV3)	

Trust (T)	I feel secure with my privacy while using mental health services (T1) I trust professionals on mental health apps (T2) I believe that when I experience problems with my mental health application, I am protected by the law (T3)	(McKnight & Chervany, 2002)
Privacy Concern (PC)	I feel that the information I provide will not be misused (PC1) I feel that other people cannot see my information in the internet search field (PC2) I feel that the information I provide will not be disseminated (PC3)	(Bansal, Zahedi, & Gefen, 2016)
Continuance Intention to Use Telemedicine (CUT)	I will continue to use the mental health app (CUT1) I will continue to use the mental health app with the same intensity as when I started using it (CUT2) I will increase my use of mental health apps (CUT3)	(Venkatesh, Thong, & Xu, 2012)

4. Results and Discussion

4.1. Result

The study's sample population included 548 respondents, 154 of whom identified as male and 382 as female. The majority of the respondents fell within the 17-27 age range (69.4%), suggesting a predominantly young adult population. In terms of geographical distribution, a significant proportion of respondents resided in Jakarta and its surrounding areas. With respect to the utilization of telemedicine applications, Halodoc emerged as the predominant platform, followed by Alodokter and Riliv. The majority of respondents reported an average usage duration of telemedicine services ranging from less than six months to six months or more. The most prevalent services utilized encompassed online consultations with psychiatrists, reading mental health articles, and online consultations with psychologists.

Table.2. Respondent Demography

	Characteristics	Frequency	Percentage
Have you ever used telemedicine?	Yes	548	97.33 %
	No	14	2.67 %
Domicile	Jakarta	113	20.62 %
	Bogor	37	6.76 %
	Depok	29	5.29 %
	Tangerang	29	5.29 %
	Bekasi	38	6.93 %
	Outside Jabodetabek	302	55.11 %
Gender	Woman	382	69.58 %
	Man	166	30.42 %
Age	< 17	27	4.92 %
	17 – 27	442	80.71 %
	28 – 43	66	12.02 %
	44 – 59	13	2.37 %
Mental health telemedicine applications that have been used?	Halodoc	480	87.43 %
	Alodokter	241	43.90 %
	KlikDokter	81	14.76 %
	Riliv	68	12.39 %
	Other	10	1.82 %
	Halodoc	403	73.39 %

What is the most frequently used telemedicine application?	Alodokter	83	15.13 %
	KlikDokter	12	2.19 %
	Riliv	40	7.29 %
	Other	10	1.82 %
How long have you been using telemedicine applications?	< 6 months	253	46.17 %
	6 months – 1 year	161	29.38 %
	1 – 2 years	81	14.76 %
	> 2 years	53	9.67 %
Services that have been used	Online consultation with a psychiatrist	377	68.61 %
	Make an appointment with a psychiatrist	59	10.77 %
	Online consultation with a psychologist	251	45.80 %
	Make an appointment with a psychologist	60	10.95 %
	Medicine purchase	110	20.07 %
	Reading the article	287	52.37 %
	Meditate	91	16.61 %
	Mood tracking	79	14.42 %
	Other	4	0.73 %
Intensity of use of telemedicine applications	Everyday	75	13.69 %
	Once a week	165	30.11 %
	Once a month	208	37.95 %
	More than once a month	100	18.25%

The initial step in this process entails conducting a convergent validity test on each item pertaining to the eight variables. A total of eight items on the construct have values that meet the established criteria. Confirmatory factor analysis (CFA) was conducted using Smart PLS 4.0. As illustrated in Table 3, the standardized path loadings of all items were statistically significant (t-value > 1.96) and exceeded 0.7. The composite reliability (CR) and Cronbach's alpha for all constructs exceeded 0.7, indicating an acceptable level of internal consistency. The average variance extracted (AVE) for each construct is greater than 0.5, indicating that the items collectively explain a significant proportion of the construct variance. Consequently, each test result met the established threshold criteria, providing support for the convergent validity of the constructs.

Table.3. Validity and Reliability Test

Variables	Indicators	Factor Loading	AVE	Cronbach's Alpha	Composite Reliability
Social Influence	SI 1	0.837	0.713	0.867	0.909
	SI 2	0.848			
	SI 3	0.839			
	SI 4	0.854			
Perceived Usefulness	PU 1	0.816	0.708	0.863	0.906
	PU 2	0.843			
	PU 3	0.862			
	PU 4	0.843			
Perceived Ease of Use	PEU 1	0.852	0.718	0.870	0.911
	PEU 2	0.839			

Performance Expectancy	PEU 3	0.866	0.751	0.889	0.923
	PEU 4	0.833			
	PE 1	0.865			
	PE 2	0.868			
	PE 3	0.864			
	PE 4	0.869			
Price Value	PV 1	0.884	0.777	0.857	0.913
	PV 2	0.869			
	PV 3	0.892			
Trust	T 1	0.879	0.778	0.857	0.913
	T 2	0.888			
	T 3	0.879			
Privacy Concern	PC 1	0.841	0.741	0.825	0.895
	PC 2	0.865			
	PC 3	0.876			
Continuance Intention to Use Telemedicine	CTU 1	0.868	0.739	0.824	0.895
	CTU 2	0.869			
	CTU 3	0.842			

The measurement model's convergent validity and reliability were established, as all factor loadings, Cronbach's Alpha, Composite Reliability, and AVE values met the recommended thresholds (see Table 3). To assess discriminant validity, the Heterotrait-Monotrait (HTMT) ratio was calculated, with the results presented in Table 4.

Table.4. Hypothesis Testing

	CTU	**PEU**	**PE**	**PV**	**PC**	**PU**	**SI**	**T**
CTU								
PEU	0.612							
PE	0.702	0.647						
PV	0.693	0.540	0.741					
PC	0.596	0.490	0.592	0.610				
PU	0.618	0.757	0.715	0.609	0.552			
SI	0.638	0.646	0.655	0.621	0.589	0.730		
T	0.654	0.621	0.681	0.654	0.718	0.715	0.738	

As shown in the table, all HTMT values were below the conservative threshold of 0.85, confirming that discriminant validity was established for all constructs in the model.

For overall model fit, the Standardized Root Mean Square Residual (SRMR) value was 0.071, which is below the 0.08 threshold, indicating a good model fit. The structural model explained 47.6% of the variance in continuance intention ($R^2 = 0.476$). The detailed hypothesis testing results are presented in Table 5.

Table.5. Hypothesis Testing

Hypothesis	**T Statistics (|O/STDEV|)**	**P Values**	**Result**
Social Influence → CTU (H1)	2.911	0.004	Accepted
Perceived Usefulness → CTU (H2)	0.046	0.096	Rejected
Perceived Ease of Use → CTU (H3)	1.666	0.096	Rejected
Performance Expectancy → CTU (H4)	2.658	0.008	Accepted
Price Value →CTU (H5)	5.523	0.000	Accepted

Trust → CTU (H6)	0.327	0.744	Rejected
Privacy Concern → CTU (H7)	4.265	0.000	Rejected
Age x Social Influence → CTU (H8A)	0.708	0.479	Rejected
Age x Perceived Usefulness → CTU (H8B)	1.117	0.264	Rejected
Age x Perceived Ease of Use → CTU (H8C)	1.342	0.180	Rejected
Age x Performance Expectancy → CTU (H8D)	1.601	0.109	Rejected
Age x Price Value → CTU (H8E)	2.431	0.015	Accepted
Age x Trust → CTU (H8F)	1.362	0.173	Rejected
Age x Privacy Concern → CTU (H8G)	0.502	0.616	Rejected

4.2. Discussion

The objective of this study is to identify potential recommendations for the development of telemedicine services for mental health, as offered by Halodoc, KlikDokter, Alodokter, and Riliv. Firstly, the social influence on the sustainability of telemedicine services for mental health should be considered. This suggests that recommendations from a potential user's immediate environment influence their decision to use mental health services.

The second result indicates that performance expectancy exerts an influence on the sustainability of application use. Presently, mental health application users in Indonesia encounter challenges related to the performance of mental health telemedicine applications, including bugs, errors, lags, login issues, and other frustrating problems. Consequently, when users attempt to utilize mental health telemedicine applications, they encounter difficulties and are unable to access the service due to the aforementioned issues.

The third finding indicates that price value is the most significant factor influencing the sustainability of mental healthcare services in Indonesia. The Indonesian public seeks optimal outcomes and expects these services to be affordable. Moreover, the Indonesian public tends to prefer services that are either inexpensive or free, perceiving the cost of mental healthcare services as excessive.

The fourth finding indicates that privacy concerns also have an impact on the sustainability of mental health telemedicine services. In the context of mental health services, privacy is of paramount importance and is a key consideration for users. This is influenced by the presence of negative stigma surrounding mental illness, which leads to the perception that individuals with mental illness are also mentally ill, resulting in discrimination from their peers.

The final finding indicates that price value is influenced by age in terms of continuance intention to use mental health telemedicine. This suggests that price value is subject to different levels of acceptance across age groups. Consequently, the perception of the value obtained from telemedicine services varies between generations. For instance, younger generations may be more amenable to subscription or pay-per-session models, while older generations may prefer a comprehensive package of services with a fixed price (Salbiah, 2024).

The results of the present study, which were collected and analyzed, suggest several conclusions. Primarily, the study provides recommendations for the development of telemedicine services, particularly for Halodoc, Alodokter, KlikDokter, and Riliv. The most salient recommendation is the establishment of a system that will connect patients with healthcare professionals in the future is:

1. The findings indicated that recommendations from the immediate environment, including family, friends, and relatives, exert a substantial influence on an individual's decision to utilize mental health services. This observation underscores the pivotal role of socialization and marketing strategies in enhancing public awareness regarding the significance of maintaining mental well-being.

2. In order to enhance the user experience and ensure the continued usage of the application, it is imperative that telemedicine providers prioritize the optimization of performance. This entails addressing issues such as bugs, errors, lags, and login problems that impede user access to the

service. By ensuring a stable and seamless user experience, telemedicine providers can foster greater user satisfaction and encourage continued utilization of their services.

3. In order to ascertain the extent of customer satisfaction and promote the continuity of service, it is necessary to optimize the value offered. This can be achieved through various methods, such as the provision of attractive promotions, the enhancement of service quality, and the assurance that the services provided align with the customers' needs and expectations.

4. Ensuring the security of data and privacy of users is of paramount importance. Consequently, users can access mental health services with confidence and ease, without the concern of data breach, including chat history, medical records, and other sensitive information. This initiative aims to enhance user trust in telemedicine services.

5. The final finding indicates that price value is influenced by age in terms of continuance intention to use mental health telemedicine. This suggests that price value is subject to different levels of acceptance across age groups. Consequently, the perception of the value obtained from telemedicine services varies between generations. For instance, younger generations may be more amenable to subscription or pay-per-session models, while older generations may prefer a comprehensive package of services with a fixed price.

5. Conclusion

This study examined the factors influencing the continuance intention to use mental health telemedicine applications in Indonesia, using an extended UTAUT2 framework. The findings confirm that social influence, performance expectancy, price value, and privacy concerns are significant drivers of sustained use. Furthermore, this research reveals a key nuance: the influence of price value is moderated by age, indicating that generational differences play a crucial role in the adoption of these vital services.

Theoretical Contributions: This research contributes to the technology acceptance literature by extending the UTAUT2 model into the high-stakes context of mental health in a developing, collectivist nation. The significance of non-traditional drivers like privacy concerns and the moderation of an economic factor like price value by age underscores the limitation of applying standard models without careful contextual adaptation. It suggests that in sensitive health domains, socio-cultural and psychological factors can be as important as, if not more important than, basic usability constructs.

Practical Implications: For telemedicine providers and policymakers, these findings offer actionable insights. First, the importance of performance expectancy highlights the need to ensure application stability and reliability over simply adding new features. Second, the significance of social influence suggests that marketing strategies should leverage user testimonials and community engagement to build trust and normalize help-seeking. Finally, the generational difference in price value perception calls for segmented pricing strategies, perhaps subscription models for younger, price-sensitive users and comprehensive packages for older demographics.

Limitations and Future Research: The study's cross-sectional design limits our ability to infer causality and track perceptions over time. Future research should employ a longitudinal approach to better understand the dynamics of user behavior. Furthermore, the use of a non-probabilistic sample from Indonesia means that while the findings are contextually rich, their generalizability is limited. Cross-cultural studies comparing findings in Indonesia with other developing or developed nations could provide a broader understanding of technology acceptance in digital health.

Ultimately, this study provides one of the first comprehensive examinations of mental health telemedicine continuance in Indonesia. It represents a significant geographical and contextual contribution, offering a nuanced model that can inform both theory and practice to enhance the sustainability of digital mental health solutions in Indonesia and other developing countries facing similar challenges.

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