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ENCOURAGING THE INTENTION TO USE MOBILE JKN APPLICATION FOR PATIENT REGISTRATION AND APPOINTMENT IN INDONESIA: A CROSS-SECTIONAL STUDY

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ABSTRACT

Background: The Muhammadiyah Bandung Hospital is grappling with substantial obstacles in delivering healthcare services, notably in the domain of patient registration. A critical concern is the burgeoning queues stemming from offline admissions processes. Notably, the utilization of Mobile JKN for registration is markedly low, despite its potential to mitigate these issues. **Purpose:** The purpose of this research is to identify the determinants that shape outpatients' intentions to employ Mobile JKN for online registration and scheduling. The aim is to foster and augment the adoption of Mobile JKN for outpatient services at the Muhammadiyah Hospital in Bandung. **Methods:** Employing the modification of Unified Theory of Acceptance and Use of Technology (UTAUT) framework, and incorporating satisfaction as an additional variable, this study analyzed survey data from 426 outpatients at Muhammadiyah Bandung Hospital using Structural Equation Modeling (SEM) to assess the interplay among the variables. **Results:** Findings reveal that Social Influence (SI), Trust (T), and Satisfaction (S) exert a direct and substantial impact on the intention to utilize Mobile JKN. Conversely, performance expectancy (PE), effort expectancy (EE), facilitating conditions (FC), and perceived risk (PR) were found to have no significant influence on the intention to use Mobile JKN. **Conclusion:** These insights provide actionable guidance for healthcare service providers, particularly at Muhammadiyah Bandung Hospital and similar institutions, to enhance their understanding of outpatient behaviors in relation to the adoption of Mobile JKN for online registration and appointment scheduling.

Keywords: mobile JKN, online registration/appointment, UTAUT, satisfaction, health system

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INTRODUCTION

Over the past few years, the healthcare industry has undergone substantial transformations, especially in response to the COVID-19 pandemic. In line with the last few decades, every new technological transformation to develop and integrating their online and offline businesses, and in the scope of service delivery in the healthcare industry (Lacap & Alfonso, 2022; Ye *et al*., 2022). However, the health service is facing several problems due to a significant increase in the number of people attending medical appointments, resulting in longer waiting times and queues (Zhu *et al*., 2023).

Based on the author's interview with the Head of Marketing & Public Relations at Muhammadiyah Bandung Hospital (RSMB), several problems in outpatient registration were identified, such as overcrowding of outpatients, long waiting times, and competition for small queue numbers at polyclinics. Based on Table 1, which contains outpatient data from January to March 2024, there were 32,352 outpatient visits, with 28,613 patients receiving insurance from the National Health Insurance (JKN) organized by Social Security Organizers (BPJS) at RSMB. This high volume of patients causes dense queues at the registration section due to the limited number of service staff. Queues also occur because outpatients must wait for registration calls, fill out forms, and come directly to the registration section at the hospital (Tugiman *et al*., 2023; Zhu *et al*., 2023)

Table 1. Number of outpatients in January-March 2024 Muhammadiyah Bandung Hospital Management Information System (SIMRSMB)

	Outpatients 1 January - 31 March 2024				
	BPJS	**Officer**	**Contractor**	**COB**	**Public**
Number of Visits	28.613	117	579	327	2.716
Total	32.352				

To address these issues, BPJS developed the Mobile JKN application, which allows JKN patients to access services anywhere and at any time without time limits (Situmorang & Herlina, 2024). The app includes features for service registration to primary health care (FKTP) and advanced health care (FKRTL). However, based on Table 2, from January to March 2024, only 2% (837 out of 42,822) of outpatient patients used Mobile JKN to visit RSMB, compared to 66% (28,127) who used on-site morning/afternoon registration and self-registration kiosks (APM), and 34% (13,858) who used existing online registration methods. This usage is very low.

An interview with the Head of Marketing & Public Relations at RSMB revealed that the low use of Mobile JKN is due to outpatients' lack of knowledge about the app and its functions, as well as issues within the hospital system, the Mobile JKN system, and among the patients themselves. The number of outpatients registering on-site remains very high.

This research highlights the intention of using digital technology to improve access and efficiency in healthcare. Despite advanced digital solutions like Mobile JKN, there is still a significant gap in knowledge and adoption. Addressing this gap requires understanding the factors driving the use of Mobile JKN to realize the full potential of digital health innovation and enhance overall health quality for the community.

Table 2. Data on Outpatient Visits Registered at RSMB in January-March 2024 (SIMRSMB)

Outpatient Queue 1 Januari - 31 Maret 2024			
Admission /Registration Queue	Queue S (BPJS On-site Evening)	16%	6.968
	Queue B (BPJS On-site Moring)	34%	14.724
	Queue A (General Patients)	3%	1.417
	Queue E (Online Registration)	32%	13.858
Queue of doctors in charge (DPJP)	Queue Mobile JKN	2%	837
	Queue APM	12%	5.018
	Total Outpatient Visits 1 January – 31 March 2024		42.822
	Daily Average Outpatient Visits 1 January – 31 March 2024		669

The high number of outpatients and the low usage of Mobile JKN for online registration and appointments mean that registration problems continue to occur at RSMB. Therefore, it is necessary to leverage digital technology, which can provide potential solutions in the healthcare sector (Aranha *et al*., 2024). This study aims to assess how well outpatients accept the online registration and appointment system and identify the factors that are still not acceptable to users (Tugiman *et al*., 2023).

Despite advancements in digital healthcare solutions, challenges such as increased patient load and long registration wait times persist at RSMB. Outpatient registration continues to be problematic, characterized by overcrowding and lengthy waiting times. The Mobile JKN application, developed by BPJS, aims to mitigate these issues by enabling easier and remote access to services. However, its adoption remains low due to a lack of awareness and technical issues. These challenges underscore significant problems in community healthcare, where high patient volumes and inefficient registration processes lead to overcrowding and extended wait times. Addressing these issues through effective digital solutions like Mobile JKN is essential for enhancing healthcare access and quality.

This research aims to understand the acceptance and usage of Mobile JKN among outpatient patients, identify barriers to its adoption, and leverage digital technology for effective healthcare solutions. The study will explore the intention of outpatients to use Mobile JKN for online registration/appointments and identify the factors that encourage them to utilize this application. Consequently, this research is expected to provide in-depth insights into how digital technology can be effectively integrated into the healthcare system to enhance access and quality of healthcare services.

METHOD

Research Design

This is used as a cross-sectional approach.

Population and sample

This study targets consumers or patients using outpatient services at hospitals covered by JKN, managed by BPJS. A sample is a subset of the population that represents the whole (Burns *et al*., 2020). To achieve a margin of error of ±5% with a 95% confidence level, the study requires 400 participants (Burns *et al*., 2020). The study employs non-probability sampling, specifically purposive sampling based on convenience (Suhartanto *et al*., 2023).

Data Source

This study utilized both primary and secondary data sources (Burns *et al*., 2020). Primary data was collected through an online survey questionnaire. Respondents were selected based on their status as non-users or early users of online registration/appointments for hospital services. Secondary data were obtained from hospital records, detailing outpatient visits and the use of various registration/appointment methods (online/onsite).

Data analysis

Data analysis will employ Structural Equation Modeling (SEM) and qualitative analysis. SEM allows for the simultaneous modeling and assessment of complex interdependencies among multiple variables (Hair *et al*., 2022).

Measurement Model

Variables are considered reliably measured when indicator reliability meets a minimum threshold of 0.6 (Suhartanto, 2020). Composite reliability scores between 0.60 and 0.70 are acceptable for preliminary studies, while scores from 0.70 to 0.90 indicate satisfactory to good reliability. Scores above 0.90, especially beyond 0.95, are deemed excessive (Hair *et al*., 2022). The average variance extracted (AVE) should be at least 0.50, indicating that the construct explains over half of the variance of its indicators (Hair *et al*., 2022). The heterotrait-monotrait ratio (HTMT) should have a cutoff value of 0.90 for structural models with highly similar constructs (Hair *et al*., 2022).

Structural Model

In social sciences, R^2 values of 0.75, 0.50, and 0.25 are interpreted as substantial, moderate, and weak, respectively (Hair *et al*., 2022). The Goodness of Fit (GoF) metric is categorized into small (0.10-0.24), moderate

(0.25-0.35), and large (0.36 and above), with higher values indicating a more robust path model (Hair *et al*., 2022). A Variance Inflation Factor (VIF) value of 5 or more signals significant collinearity concerns within formative constructs, with a VIF of 3 or less being ideal (Hair *et al*., 2022). For path coefficients, common critical values for a two-tailed test are 1.65 (10% significance), 1.96 (5% significance), and 2.57 (1% significance), with a 5% significance level typically assumed in marketing research (Hair *et al*., 2022).

Study Variable

The Unified Theory of Acceptance and Use of Technology (UTAUT) posits that performance expectancy, effort expectancy, social influence, and facilitating conditions affect behavioral intention toward technology (Alhadid *et al*., 2022; Venkatesh *et al*., 2012). he modified UTAUT, which includes perceived risk and perceived trust, enhances its explanatory power regarding behavioral intention (Zhu *et al*., 2023). These factors influence users' behavioral intention toward mobile health apps (Alhadid *et al*., 2022; Alkhalifah, 2022; Alviani *et al*., 2023; Aydin, 2023; Cao *et al*., 2022; Semiz & Semiz, 2021; Tian & Wu, 2022; Zhu *et al*., 2023).

Health service quality refers to the level of service provided to individuals and communities that promotes optimal health outcomes, adheres to service standards, and incorporates the latest scientific developments, while fulfilling patient rights and obligations (Kementrian Kesehatan Republik Indonesia, 2022). Several previous research shows health service qualities have significant impact on satisfaction (Jin *et al*., 2022; Tian & Wu, 2022).

Satisfaction is the extent to which a product or service's perceived performance matches expectations (Kotler & Armstrong, 2017). Studies show that satisfaction directly influences mobile health usage and the intention to use hospital services (Jin *et al*., 2022; Nie *et al*., 2023; Tian & Wu, 2022). Behavioral intention serves as an antecedent to actual behavior, indicating an individual's readiness to engage in a specific action. It reflects the degree of motivation or willingness to execute the behavior (Ursavaş, 2022). This intention embodies an individual's propensity to adopt technology and consistently repurchase a favored product or service, which is crucial for the commercial success of healthcare providers (Abu-Taieh *et al*., 2022; Alkhalifah, 2022).

The research model will modify several models from previous studies (Aydin, 2023; Tian & Wu, 2022; Wulandari *et al*., 2023; Zhu *et al*., 2023). This study uses variables such as effort expectancy, facilitating conditions, performance expectancy, social influences, trust, perceived risk, health service quality, and satisfaction to examine their influence on the behavioral intention to use Mobile JKN for online registration and appointments.

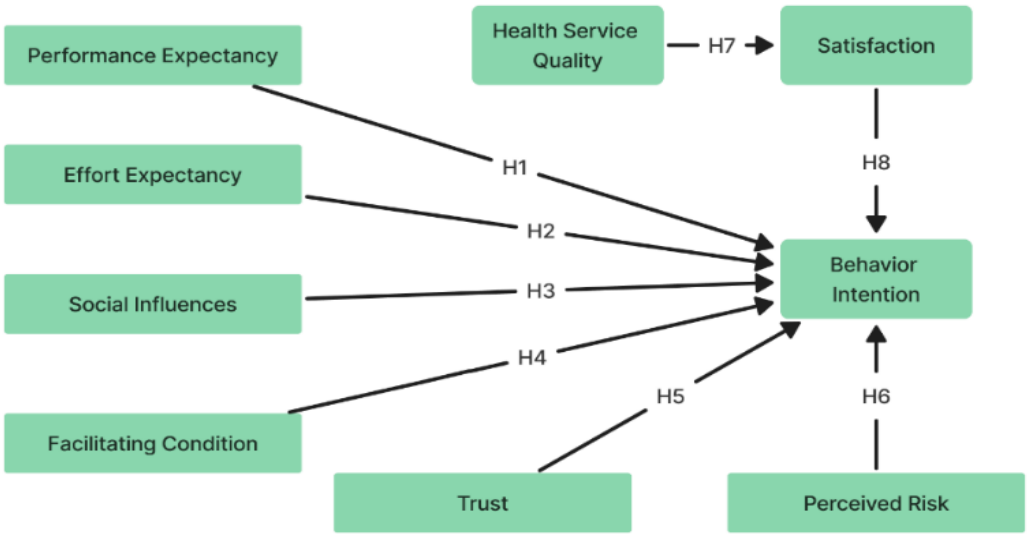

Figure 1. Research Model

H1 Performance expectancy has a positive influence on behavioral intentions to use Mobile JKN, H2 Effort expectancy has a positive influence on behavioral intentions to use Mobile JKN, H3 Social influence has a positive influence on behavioral intentions to use Mobile JKN, H4 Facility conditions have a positive influence on behavioral intentions to use Mobile JKN, H5 Trust has a positive influence on behavioral intentions to use Mobile JKN, H6 Perceived risk has a positive influence on behavioral intention to use Mobile JKN, H7 Health Services Quality has a positive influence on satisfaction, H8 Satisfaction has a positive influence on behavioral intentions to use Mobile JKN.

Ethical Clearance

This research is based on the recommendation of the research permit letter from Bandung State Polytechnic No B/43/PL.1.AN/EP.00.08/2024, and it was responded to through the research permit response letter from Muhammadiyah Bandung Hospital No 66/II.6.AU/H/II/2024, which stated permission for the research to be conducted. Informed consent is given by Muhammadiyah Bandung Hospital as a research partner to conduct questionnaire dissemination and interviews with the hospital staff, and this approval is in written form.

RESULT

The study focused on outpatients who were either non-users or early users of online registration/appointments for hospital services. Based on data collected from 426 respondents, the demographic information is summarized in the table below.

Table 1. Respondent Demographics

	Characteristic	Frequency	Percentage
Age	17 - 26	162	38%
	27 - 42	140	33%
	43 - 58	88	21%
	> 59	35	8%
Gender	Male	194	46%
	Female	232	54%
Education	<SMA/MA/SMK	23	5%
	SMA/MA/SMK	101	24%
	D3	69	16%
	S1/D4	193	45%
	S2	36	8%
	S3	4	1%
Work	Housewife	46	11%
	College/Students	79	19%
	PNS/TNI/POLRI	70	16%
	Private sector employee	161	38%
	Entrepreneur	70	16%
Residence	Kota Bandung	362	85%
	Kota Cimahi	11	3%
	Kab. Bandung	42	10%
	Kab. Bandung Barat	11	3%
Monthly income	< 2,000,000	100	23%
	Rp. 2,000,001 - Rp. 4,000,000	123	29%
	Rp. 4,000,001 - Rp. 6,000,000	114	27%
	> Rp. 6,000,000	88	21%
Frequency of Hospital Visits	Once a week	64	15%
	Twice a week	71	17%
	Once every two weeks	76	18%
	Once a month	215	50%
Hospital Type	Private	360	85%
	Government	66	15%

Measurement model

The relationships between indicators and variables, known as the outer model (Suhartanto, 2020), are used to measure model validity and reliability in these studies. The measurement model was assessed using the PLS Algorithm procedure in Smart PLS 3.0. The data used to evaluate the outer model includes Outer Loading, Cronbach's Alpha, Composite Reliability, and AVE values (Hair *et al*., 2022).

Table 2. Outer Model Testing

Construct	Outer Loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted
Behavior Intention		0.727	0.846	0.648
BI1	0.799*			
BI2	0.857*			
BI3	0.756*			
Effort Expectancy		0.765	0.850	0.588
EE1	0.778*			
EE2	0.800*			
EE3	0.793*			
EE4	0.690*			
Facilitating Condition		0.783	0.860	0.606
FC1	0.781*			
FC2	0.802*			
FC3	0.768*			
FC4	0.762*			
Health Service Quality		0.874	0.899	0.500
HSQ1	0.661*			
HSQ2	0.738*			
HSQ3	0.720*			
HSQ4	0.559**			
HSQ5	0.743*			
HSQ6	0.683*			
HSQ7	0.737*			
HSQ8	0.766*			
HSQ9	0.734*			
Performance Expectancy		0.722	0.827	0.545
PE1	0.665*			
PE2	0.751*			
PE3	0.757*			
PE4	0.774*			
Perceived Risk		0.892	0.925	0.755
PR1	0.841*			
PR2	0.920*			
PR3	0.907*			
PR4	0.804*			
Satisfaction		0.820	0.893	0.736
S1	0.859*			
S2	0.846*			
S3	0.868*			
Social Influences		0.791	0.864	0.613
SI1	0.785*			
SI2	0.806*			
SI3	0.792*			
SI4	0.749*			
Trust		0.765	0.850	0.587
T1	0.792*			
T2	0.776*			
T3	0.760*			
T4	0.735*			

Notes: *Valid **Invalid

In these studies, one indicator in the HSQ was not recommended for further analysis due to loadings lower than 0.6. However, other indicators were recommended as their loadings exceeded 0.6. Composite reliability and Cronbach's alpha values for each variable ranged between 0.70 and 0.90, indicating satisfactory reliability. The AVE values were acceptable, being equal to or greater than 0.50.

Table 3. Heterotrait–Monotrait Ratio

		1	2	3	4	5	6	7	8
1	BI								
2	EE	0.531							
3	FC	0.617	0.831						
4	HSQ	0.577	0.434	0.628					
5	PE	0.580	0.762	0.670	0.328				
6	PR	0.255	0.189	0.268	0.342	0.155			
7	S	0.561	0.419	0.536	0.855	0.260	0.289		
8	SI	0.680	0.725	0.746	0.550	0.714	0.247	0.446	
9	T	0.737	0.715	0.879	0.627	0,763	0.296	0.527	0.692

In Table 4 above, the value of HTMT for assess discriminant validity it is recommended, because every variable is lower than 0.90. The model measurement findings for each latent variable are valid and reliable in these studies; this implies that further analysis of these factors could be conducted.

Structural Model

Evaluation after the reliability and validity of the construct measures are established, the subsequent step involves the analysis of the structural model's outcomes. It is recommended that a substantial number of bootstrap samples, preferably no fewer than 10,000, be utilized to ensure the robustness of the results (Hair *et al*., 2022).

Table 4. Structural Model Testing

Average path coefficient (APC)	0.212	P<0.001
Average R-squared (ARS)	0.497	P<0.001
Average adjusted R-squared (AARS)	0.492	P<0.001
Average block VIF (AVIF)	2.013	Acceptable if <= 5, ideally <= 3.3
Average full collinearity VIF (AFVIF)	2.061	Acceptable if <= 5, ideally <= 3.3
Average GoF (GoF)	0.555	small >= 0.1, medium >= 0.25, large >= 0.36

According to Table 5 above, shows the average R^2 to measure the influence of independent variables on the dependent variable indicates a result of 49.7% (0.497), and falls into the weak category. In these studies, have strong predictive-relevant values. Based on the table above, the AVIF value is 2.061, which falls within the ideal range, indicating no collinearity. The results of the GoF calculation are on table 5 above, and that indicate this study's GoF value is 0.555. The large criteria with more than 0.36 represent as excellent model, contain this studies model.

Hypotheses Testing

Within the structural model, the relationships among constructs are quantified by path coefficients. These coefficients, when approaching a value of +1, signify robust and statistically significant positive correlations. Conversely, coefficients nearing 0 typically indicate a lack of statistical significance. (Hair *et al*., 2022). The values derived from the Path Coefficient test are delineated in Table 6.

Table 6. Total Effect

Variable	Path Coefficients	T-Values	P-Values	Remarks
EE -> BI	-0.023	0.330	0.741	Not Significant
FC -> BI	0.002	0.029	0.977	Not Significant
HSQ -> S	0.733	19.946	0.000	Significant
PE -> BI	0.089	1.264	0.206	Not Significant
PR -> BI	-0.033	0.895	0.371	Not Significant
S -> BI	0.205	2.337	0.019	Significant
SI -> BI	0.254	3.601	0.000	Significant
T -> BI	0.279	4.544	0.000	Significant

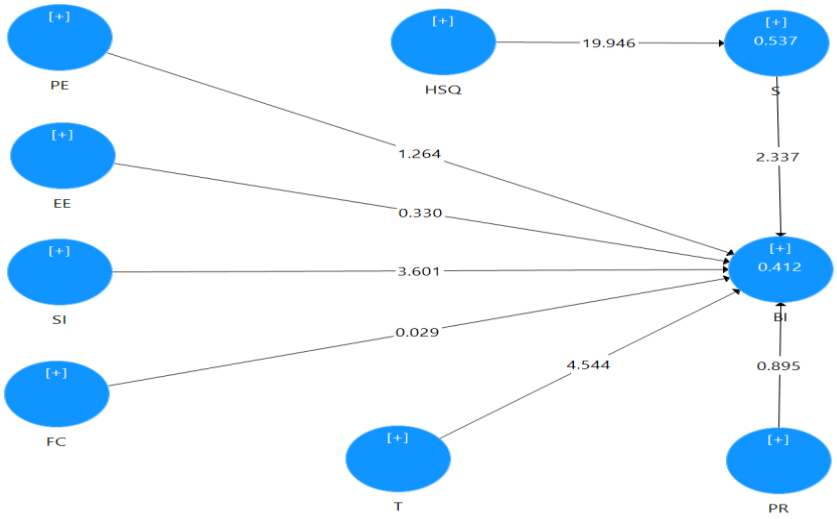

Figure 2. Summarizes the Results of Testing the Direct Relation Variables

Based on Table 6, assuming a 5% significance level, the structural model shows that only the paths HSQ -> S (β = 0.733), S -> BI (β = 0.205), SI -> BI (β = 0.254), and T -> BI (β = 0.279) are significant. The paths EE -> BI (β = -0.023), FC -> BI (β = 0.002), PR -> BI (β = -0.033), and PE -> BI (β = 0.089) are not significant. Therefore, some hypotheses in this research yield significant and positive results, while others do not.

DISCUSSION

This study seeks to ascertain the motivators that prompt outpatients to utilize Mobile JKN for online registration and appointment scheduling. It specifically targets outpatients who have not adopted Mobile JKN or those who opt for alternative online registration methods for hospital services. The research examines the influence of performance expectancy, effort expectancy, social influence, facilitating conditions, trust, perceived risk, quality of health services, and satisfaction in shaping patients' intentions to use Mobile JKN for online registration and appointments (Aydin, 2023; Nie *et al*., 2023; Semiz & Semiz, 2021; Zhu *et al*., 2023). The outcomes of this investigation will pinpoint the factors that motivate outpatient usage of Mobile JKN for online services, enabling hospitals to devise strategic initiatives to bolster its adoption.

The analytical findings reveal that variables such as effort expectancy, facilitating conditions, performance expectancy, and perceived risk do not exert a significant influence on outpatients' intentions to employ Mobile JKN for online registration and appointments. These results align with prior research, which suggests that these factors do not markedly affect the decision to use mobile health solutions (Palas *et al*., 2022; Perdana & Abidin, 2024; Salgado *et al*., 2020; Uncovska *et al*., 2023; Utomo *et al*., 2021). In this study, perceived risk also did not demonstrate a significant effect on the intention to use mobile health services (Cao *et al*., 2022; Zhu *et al*., 2023). Thus, the study indicates that effort expectancy, facilitating conditions, performance expectancy, and perceived risk are not significant determinants in motivating outpatients to use Mobile JKN for online registration and appointments.

Contrastingly, other studies have identified that effort expectancy, facilitating conditions, performance expectancy, and perceived risk significantly impact the intention to engage with mobile health services (Alhadid *et al*., 2022; Aydin, 2023; Klaver *et al*., 2021). Within the scope of this investigation, it has been determined that certain factors traditionally deemed influential in technology adoption models do not significantly sway the decision to utilize Mobile JKN for registration and appointment scheduling. Although these elements; effort expectancy, facilitating conditions, performance expectancy, and perceived risk, do not serve as direct motivators, the findings imply that outpatients do not perceive them as

hindrances or direct incentives to adopt Mobile JKN. This suggests that these factors may not be the central drivers for patients considering the use of the Mobile JKN platform.

Secondly, the study reveals that social influences and trust significantly shape outpatients' intentions to engage with Mobile JKN for online registration and appointments. This aligns with existing literature, which underscores the positive impact of social factors and trust on the willingness to use mobile health applications (Alviani *et al*., 2023; Aydin, 2023; Perdana & Abidin, 2024; Semiz & Semiz, 2021; Zhu *et al*., 2023). Despite some studies suggesting otherwise (Alkhalifah, 2022; Salgado *et al*., 2020; Aydin, 2023). The consensus indicates that these elements are pivotal in fostering the adoption of Mobile JKN. The implication is clear: by enhancing social interactions and building trust, Mobile JKN can become a preferred option for online registration and appointment scheduling at Muhammadiyah Bandung Hospital.

Thirdly, the research establishes that satisfaction is a critical determinant in outpatients' decision to use Mobile JKN for online services. This observation is in harmony with prior findings that satisfaction, influenced by the quality of health services, positively affects the adoption of mobile health solutions (Tian & Wu, 2022). Consequently, it is imperative for Muhammadiyah Hospital Bandung to sustain and enhance healthcare service quality to promote the use of Mobile JKN, adhering to the Regulation of the Minister of Health of the Republic of Indonesia Number 30 of 2022.

Based on the findings, RSMB should focus on enhancing social influence and trust to increase the adoption of Mobile JKN for online registration and appointment scheduling. Leveraging word-of-mouth promotion and patient testimonials can significantly impact patients' intentions. Building trust through transparent communication, safeguarding patient data, and providing reliable services is crucial. Patient satisfaction, closely tied to healthcare service quality, is a key driver. Continuous improvement in service quality is essential to maintain and enhance satisfaction, motivating patients to use Mobile JKN. Implementing regular feedback mechanisms can help understand patient needs and address concerns promptly.

While effort expectancy, facilitating conditions, performance expectancy, and perceived risk were found to be non-significant, these aspects should not be neglected. Simplifying the registration process and providing adequate support can help remove potential barriers for those less familiar with technology. By focusing on social influence, trust, and satisfaction, Muhammadiyah Bandung Hospital can effectively increase the adoption rate of Mobile JKN, improving patient access to online registration and appointment services.

The study has several strengths, including a comprehensive analysis of various factors influencing outpatients' intentions to use Mobile JKN, practical applicability, and alignment with existing literature, particularly regarding the importance of social influence and trust. It also offers actionable recommendations for enhancing adoption at RSMB. However, the study's limitations include its limited generalizability, potential self-selection bias, reliance on cross-sectional and self-reported data, and insufficient exploration of why certain factors were found to be non-significant.

CONCLUSION

The analysis results indicate that performance expectancy, effort expectancy, facilitating condition, and perceived risk do not significantly influence outpatients' intention to use Mobile JKN for online registration/appointments. However, social influence (SI) and trust (T) play an important role in driving intention to use Mobile JKN. Patients are influenced by recommendations from other patients and relatives to use Mobile JKN, despite some concerns about lack of knowledge on how to use it. Additionally, satisfaction (S) significantly impacts the intention to use Mobile JKN, with healthcare service quality (HSQ) playing a crucial role. Outpatient patients express satisfaction with healthcare services in Hospital, emphasizing the need for continuous improvement.

SUGGESTION

The research findings indicate that performance expectations, effort expectations, facilitating conditions, and perceived risks do not significantly influence outpatient patients' tendency to adopt Mobile JKN for online registration and appointment scheduling Instead, social influence and trust emerge as key factors shaping the intention to use Mobile JKN Patients' inclination towards Mobile JKN is greatly influenced by support from friends, fellow patients, and family members, despite doubts about their ability to use the platform due to limited knowledge Additionally, a deep level of satisfaction significantly affects the willingness to use Mobile JKN, with the quality of healthcare services provided by the hospital being a crucial element.

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CONFLICT OF INTEREST

The authors declare have no conflict of interest.

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AUTHOR CONTRIBUTION

Zain Syafrudin Pratama as the main author, carries out journal compilation, data collection, and processing. Dwi Suhartanto provides input, guidance, and supervision.

REFERENCES

Abu-Taieh, E. M., AlHadid, I., Abu-Tayeh, S., Masa'deh, R., Alkhawaldeh, R. S., Khwaldeh, S., & Alrowwad, A. 2022. Continued Intention to Use of M-Banking in Jordan by Integrating UTAUT, TPB, TAM and Service Quality with ML. *Journal of Open Innovation: Technology, Market, and Complexity, 8*(3), 120. https://doi.org/10.3390/joitmc8030120

Alhadid, I., Abu-Taieh, E., Alkhawaldeh, R. S., Khwaldeh, S., Masa'deh, R., Kaabneh, K., & Alrowwad, A. 2022. Predictors for E-Government Adoption of SANAD App Services Integrating UTAUT, TPB, TAM, Trust, and Perceived Risk. *International Journal of Environmental Research and Public Health, 19*(14), 8281. https://doi.org/10.3390/ijerph19148281

Alkhalifah, T. 2022. A Structural Equation Modelling of Governing Factors Influencing Patient Acceptance of Mobile Health in Saudi Arabia: A Modified UTAUT Model. *International Journal of E-Services and Mobile Applications, 14*(1), 1-17. https://doi.org/10.4018/IJESMA.295963

Alviani, R., Purwandari, B., Eitiveni, I., & Purwaningsih, M. 2023. Factors Affecting Adoption of Telemedicine for Virtual Healthcare Services in Indonesia. *Journal of Information Systems Engineering and Business Intelligence, 9*(1), 47–69. https://doi.org/10.20473/jisebi.9.1.47-69

Aranha, M., Shemie, J., James, K., Deasy, C., & Heavin, C. 2024. Behavioural intention of mobile health adoption: A study of older adults presenting to the emergency department. *Smart Health, 31*, 100435. https://doi.org/10.1016/j.smhl.2023.100435

Aydin, G. 2023. Increasing mobile health application usage among Generation Z members: evidence from the UTAUT model. *International Journal of Pharmaceutical and Healthcare Marketing, 17*(3), 353–379. https://doi.org/10.1108/IJPHM-02-2021-0030

Burns, A. C., Veeck, A., &. Bush, R.F. 2020. *Marketing Research*. London: Pearson Education.

Cao, J., Kurata, K., Lim, Y., Sengoku, S., & Kodama, K. 2022. Social Acceptance of Mobile Health among Young Adults in Japan: An Extension of the UTAUT

Model. *International Journal of Environmental Research and Public Health*, *19*(22), 15156. https://doi.org/10.3390/ijerph192215156

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. 2022. *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM) 3rd ed*. Newyork: Sage Publishing.

Jin, C., Wang, C., Zhu, X., & Zhu, L. 2022. *The Impact on Healthcare Service Quality and Patients Satisfaction via Adopting Mobile Health Technologyan Empirical Study in a Public Ophthalmologic Hospital in China*. Preprint. https://doi.org/10.21203/rs.3.rs-1850727/v1

Klaver, N. S., van de Klundert, J., van den Broek, R. J. G. M., Askari, M. 2021. Relationship Between Perceived Risks of Using mHealth Applications and the Intention to Use Them Among Older Adults in the Netherlands: Cross-sectional Study. *JMIR Mhealth Uhealth*, *9*(8), e26845. https://doi.org/10.2196/26845

Kotler, P., & Armstrong, G. 2017. *Principles of Marketing.* United States: Pearson Higher Education.

Nie, L., Oldenburg, B., & Cao, Y. 2023. Continuous Usage Intention of Mobile Health Services：Model Construction and Validation. *JMIR Preprints*. https://doi.org/10.2196/preprints.36863

Nie, L., Oldenburg, B., Cao, Y., & Ren, W. 2023. Continuous usage intention of mobile health services: model construction and validation. *BMC Health Services Research*, *23*(1). https://doi.org/10.1186/s12913-023-09393-9

Palas, J. U., Sorwar, G., Hoque, M. R., & Sivabalan, A. 2022. Factors influencing the elderly's adoption of mHealth: an empirical study using extended UTAUT2 model. *BMC Medical Informatics and Decision Making*, *22*(1), 191. https://doi.org/10.1186/s12911-022-01917-3

Lacap, J. P., & Alfonso, K. J. 2022. The Mediating Role of Patient Loyalty on the Relationship Between Satisfaction on Physical Environment and Intention to Recommend. *Asia-Pacific Social Science Review*, *22*(2), 83-99. https://doi.org/10.59588/2350-8329.1422

Kementrian Kesehatan Republik Indonesia. 2022. Peraturan Kementerian Kesehatan Republik Indonesia No. 30. 2022. Tentang Indikator Nasional Mutu Pelayanan Kesehatan Tempat Praktik Dokter Dan Dokter Gigi, Klinik, Pusat Kesehatan, Rumah Sakit, Laboratorium Kesehatan, dan Unit Transfusi Darah, Pub. L. No. 30 Tahun 2022. www.peraturan.go.id

Perdana, M. P., & Abidin, Z. 2024. Examination of the Factors Impacting the Interest of Residents in Semarang City in Mobile Health Applications: An UTAUT Analysis. *Scientific Journal of Informatics*, *11*(1), 107–118. https://doi.org/10.15294/sji.v11i1.48130

Salgado, T., Tavares, J., & Oliveira, T. 2020. Drivers of mobile health acceptance and use from the patient perspective: Survey study and quantitative model development. *JMIR MHealth and UHealth*, *8*(7), e17588. https://doi.org/10.2196/17588

Semiz, B. B., & Semiz, T. 2021. Examining consumer use of mobile health applications by the extended UTAUT model. *Business & Management Studies: An International Journal*, *9*(1), 267–281. https://doi.org/10.15295/bmij.v9i1.1773

Situmorang, B., & Herlina. 2024. Effectiveness National Health Insurance (JKN) Using Mobile Application to Patients Bpjs Health Services in Sibolga City. *Journal of Innovation Research and Knowledge*, *3*(8).

Suhartanto, D. 2020. *Analisis Data untuk Riset Bisnis: SPSS, AMOS, PLS (2nd ed)*. Bandung: Politeknik Negeri Bandung.

Suhartanto, D., Alty, F., Mukhamad, A., & Arsawan, W. E. 2023. *Edisi 2023 Dasar-dasar Mendesain dan Melakukan*

Riset di Konteks Bisnis. Ponorogo: Uwais Inspirasi Indonesia

Tian, X. F., & Wu, R. Z. 2022. Determinants of the Mobile Health Continuance Intention of Elders with Chronic Diseases: An Integrated Framework of ECM-ISC and UTAUT. *International Journal of Environmental Research and Public Health*, *19*(16), 9980. https://doi.org/10.3390/ijerph19169980

Tugiman, T., Herman, H., & Yudhana, A. 2023. The UTAUT Model for Measuring Acceptance of the Application of the Patient Registration System. *MATRIK: Jurnal Manajemen, Teknik Informatika Dan Rekayasa Komputer*, *22*(2), 381–392. https://doi.org/10.30812/matrik.v22i2.2844

Uncovska, M., Freitag, B., Meister, S., & Fehring, L. 2023. Patient Acceptance of Prescribed and Fully Reimbursed mHealth Apps in Germany: An UTAUT2-based Online Survey Study. *Journal of Medical Systems*, *47*(1). https://doi.org/10.1007/s10916-023-01910-x

Ursavaş, Ö. F. 2022. *Conducting Technology Acceptance Research in Education*. Springer International Publishing. https://doi.org/10.1007/978-3-031-10846-4

Utomo, P., Kurniasari, F., & Purnamaningsih, P. 2021. The Effects of Performance Expectancy, Effort Expectancy, Facilitating Condition, and Habit on Behavior Intention in Using Mobile Healthcare Application. *International Journal of Community Service & Engagement*, *2*(4), 183-197. https://doi.org/10.47747/ijcse.v2i4.529

Venkatesh, V., Thong, J. Y., & Xu, X. 2012. Quarterly Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology1. *MIS Quarterly*, *36*(1), 157-178. https://doi.org/https://doi.org/10.2307/41410412

Wulandari, M., Sriwahyuni, S., & Gunawan, D. 2023. Quality Management of Health Services On Patient Satisfaction At Montella Private Hospital West Aceh District. *Medalion Journal: Medical Research, Nursing, Health and Midwife Participation*, *4*(2), 49–64. https://doi.org/10.59733/medalion.v4i2.

Ye, C., Cao, C., Yang, J., & Shao, X. 2022. Explore How Online Healthcare Can Influence Willingness to Seek Offline Care. *International Journal of Environmental Research and Public Health*, *19*(13), 7925. https://doi.org/10.3390/ijerph19137925

Zhu, Y., Zhao, Z., Guo, J., Wang, Y., Zhang, C., Zheng, J., Zou, Z., & Liu, W. 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*(4), 3139. https://doi.org/10.3390/ijerph20043139