

Characteristics of Primary Health Care Facilities (FKTP) That Influence the Adoption of Online Appointment Scheduling via the National Health Insurance Mobile App (MJKN) in Blitar and Nganjuk Regencies

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ABSTRACT

The National Health Insurance (Jaminan Kesehatan Nasional/JKN) program administered by BPJS Kesehatan has covered 278.1 million participants, representing 98.45% of Indonesia's population. The increasing number of participants has consequently led to longer waiting times at primary healthcare facilities (Fasilitas Kesehatan Tingkat Pertama/FKTP). To address this issue, BPJS Kesehatan introduced the online queue feature through the Mobile JKN (MJKN) application in 2018. However, the utilization rate of the online queue system in Blitar Regency (10.65%) and Nganjuk Regency (12.28%) remains below the national target of 18%. This study aimed to analyze the influence of FKTP facility characteristics, including ownership status, facility type, and service type, on the adoption of the MJKN online queue system in Blitar and Nganjuk Regencies. This study employed a quantitative approach with a cross-sectional design. The population consisted of 133 FKTP, of which 103 facilities were selected using proportional random sampling. Secondary data were obtained from the Health Facilities Information System (HFIS) and the BPJS Kesehatan Business Intelligence Dashboard. Data were analyzed using binary logistic regression. The results showed that the type of FKTP significantly influenced the utilization of the MJKN online queue system ($p=0.044$; $OR=14.786$). In contrast, FKTP ownership ($p=0.396$; $OR=3.702$) and service type ($p=0.550$; $OR=1.966$) did not significantly affect online queue utilization. In conclusion, the type of FKTP plays a significant role in determining the achievement of MJKN online queue utilization, whereas ownership and service type do not. Therefore, FKTP and BPJS Kesehatan should formulate targeted strategies and prioritize optimization efforts based on FKTP characteristics to improve the adoption of the MJKN online queue system. Further studies are also recommended to examine individual-level determinants among MJKN application users.

INTRODUCTION

The digital transformation of healthcare has become a global strategic priority for improving the efficiency, accessibility, and quality of healthcare services. The digitization of healthcare services is viewed not only as a technological innovation but also as an effort to reform the healthcare system to support the achievement of Universal Health Coverage (UHC) (Paré et al., 2021). In Indonesia, this transformation is realized through the National Health Insurance (JKN) program administered by BPJS Kesehatan. As of July 2025, the number of JKN participants reached 278.1 million people, or 98.45% of Indonesia's total population. This high enrollment coverage demonstrates the government's success in expanding access to healthcare services; however, it has also increased the complexity of care delivery at healthcare facilities, particularly at Primary Healthcare Facilities (FKTP) (Sari, 2024).

One of the problems that still frequently occurs in healthcare services is long wait times due to long patient queues. This situation is generally influenced by high patient volume, limited service resources, and suboptimal queue management systems in healthcare facilities. Long queues can reduce service efficiency, hinder patient access to healthcare, and impact public satisfaction and trust in the quality of healthcare services (Widianawati et al., 2021). Therefore, digital-based service innovations are needed to enhance the effectiveness and efficiency of the healthcare system.

As part of the digital transformation of healthcare services, BPJS Kesehatan has launched the Mobile JKN (MJKN) app, which includes an online queue feature. This feature allows participants to obtain a queue number digitally before arriving at a healthcare facility, thereby reducing waiting times and improving service certainty. Various studies indicate that the use of online queuing via MJKN can improve administrative efficiency, expedite the registration process, and reduce queue congestion at healthcare facilities (Nainggolan et al., 2025; Nasution et al., 2023). However, the implementation of online queuing at Primary Healthcare Facilities (FKTP) has not yet been fully optimized.

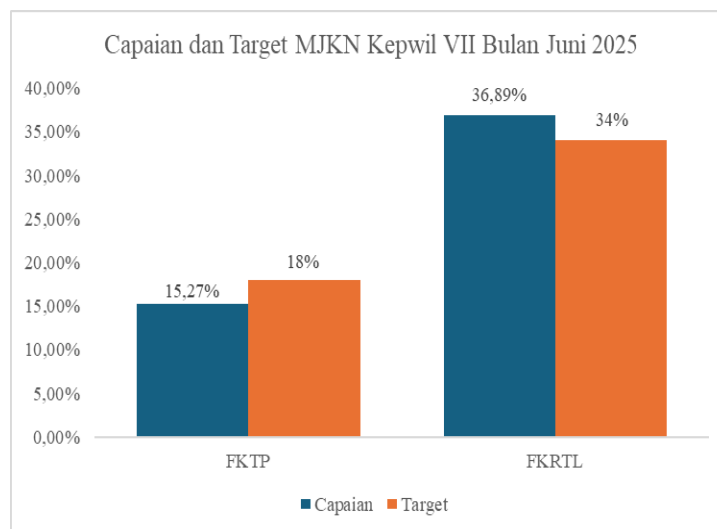


Figure 1. Achievements and Targets for the Utilization of the MJKN Regional Office VII for June 2025

Data from the East Java Regional Office VII for 2025 shows that the utilization rate of the MJKN online queue system at primary health care facilities (FKTP) reached only 15.27%, still below the national target of 18%. Within the jurisdiction of the Kediri Branch Office, Nganjuk and Blitar Regencies are the areas with the lowest adoption rates, at 12.28% and 10.65%, respectively. Furthermore, the majority of primary healthcare facilities (FKTP) that have not met the target are community health centers with high patient volumes and facilities providing inpatient care. This situation indicates that the success of online queue implementation is not solely influenced by technological aspects but is also related to the characteristics of healthcare facilities (Nugroho et al., 2024; Paré et al., 2021).

From the perspective of Donabedian's theory, the quality of healthcare services is influenced by three main dimensions: structure, process, and outcome (Donabedian, 1966). In this study, primary healthcare facility characteristics—such as facility type, service type, and number of visits—are positioned as structural aspects that can influence the outcome of online queue utilization via the MJKN. Previous research indicates that healthcare facility characteristics influence the success of digital service adoption, though findings remain inconsistent.

Research by Binzer et al. (2024) and Joudyian et al. (2021) states that healthcare facility ownership influences the success of digital service implementation, whereas Eriksson et al. (2024) found that patients' socioeconomic factors are more dominant than healthcare facility characteristics. Furthermore, the majority of previous studies have focused more on user factors such as age, education, and patient digital literacy (Atherton et al., 2024; Eriksson et al., 2024), whereas research on the influence of healthcare facility characteristics on the adoption of online queuing systems remains relatively limited.

Given these issues, this study is important for analyzing the impact of primary health care facility (FKTP) characteristics on the utilization of online queuing through the MJKN system in Blitar and Nganjuk Regencies. This study is expected to make an academic contribution to the development of research on digital transformation in health care and to provide strategic input to BPJS Kesehatan in optimizing the implementation of digital services at primary health care facilities to improve the efficiency and quality of health care services.

METHOD

This study employs a quantitative approach with an analytical observational design using a cross-sectional design to analyze the influence of Primary Health Care Facility (FKTP) characteristics on the utilization of the Mobile National Health Insurance (MJKN) online queue system in Blitar and Nganjuk Regencies. The cross-sectional approach was chosen because it allows for the systematic, efficient, and measurable evaluation of relationships between variables within a single observation period, making it relevant for research evaluating the implementation of digital health services (Notoatmodjo, 2018; Creswell, 2014).

This study also employs Donabedian's theoretical framework (Structure–Process–Outcome/SPO) as a conceptual foundation to explain the relationship between healthcare service organization characteristics and the outcomes of digital innovation implementation (Donabedian, 1966). In this study, primary health care facility (FKTP) characteristics such as ownership of the health facility, type of FKTP, and type of service are positioned as the “structure” dimension influencing the implementation of online queuing as the “process,” while the level of utilization of online queuing through the MJKN is positioned as the “outcome” of digital health services.

The study was conducted at primary health care facilities (FKTP) partnered with BPJS Kesehatan in Blitar and Nganjuk Regencies, East Java Province. The selection of the study locations was based on the low utilization rates of the MJKN online queue system in both regions compared to the established national targets. The study was conducted from October 2025 to May 2026, encompassing the research preparation phase, data collection, data processing, statistical analysis, and the preparation of the research report.

The study population consisted of all BPJS Kesehatan partner primary healthcare facilities (FKTP) in Blitar and Nganjuk Regencies, with a total of 133 FKTP, comprising 68 FKTP in Blitar Regency and 65 FKTP in Nganjuk Regency. The research sample was determined using the Krejcie and Morgan table for limited populations, resulting in a minimum sample size of 103 FKTPs (Krejcie & Morgan, 1970).

The sample size was determined to increase the statistical power of the test and ensure the representativeness of the data in each study area. The sampling technique used proportional random sampling so that each primary health care facility (FKTP) had an equal chance of being selected as a research sample in accordance with the proportion of health facilities in each area (Sugiyono, 2019). Based on this technique, the sample allocation consisted of 53 primary health care facilities in Blitar Regency and 50 primary health care facilities in Nganjuk Regency. The study's inclusion criteria included primary health

care facilities that had collaborated with BPJS Kesehatan throughout 2025 and had implemented online queuing via the MJKN application.

The independent variables in this study include the ownership of primary healthcare facilities (FKTP), categorized as government-run and private; the type of FKTP, consisting of community health centers (puskesmas), primary clinics, and independent practices of doctors or dentists; and the type of services provided by FKTP, categorized as outpatient care and outpatient care combined with inpatient care. The dependent variable is the achievement of MJKN online queue utilization, categorized as achieved or not achieved based on a cut-off point of 18% in accordance with the national target set in the policy of the Directorate of Health Service Guarantee of BPJS Kesehatan (BPJS Kesehatan, 2025).

The research utilized secondary data obtained from BPJS Kesehatan's official information systems, namely the Health Facilities Information System (HFIS) and the BPJS Kesehatan Business Intelligence (BI) Dashboard. HFIS data was used to obtain information regarding the characteristics of primary health care facilities (FKTP), while the BI Dashboard was used to obtain data on the utilization of the MJKN online queue system at each health facility. Data collection was conducted after obtaining official permission from BPJS Kesehatan and research ethics approval. Data validity was ensured through the use of official data sources, the consistency of operational definitions of variables, and alignment between theoretical concepts and research indicators (Polit & Beck, 2017). Since the study utilized administrative secondary data, validity testing focused primarily on content validity and construct validity rather than instrument validity.

Data processing was conducted through the stages of editing, coding, entry, cleaning, and analysis using IBM SPSS Statistics software. The editing stage was performed to check the completeness and consistency of the research data, while coding was carried out by assigning numerical codes to each variable category to facilitate statistical analysis (Sugiyono, 2019).

Next, the data was entered into statistical software and cleaned to ensure there were no entry errors, duplicate data, or illogical values. Data analysis was conducted using descriptive and inferential analysis. Descriptive analysis was used to describe the distribution of FKTP characteristics and the utilization of the MJKN online queue in terms of frequency and percentage. Inferential analysis was performed using binary logistic regression to analyze the influence of FKTP characteristics on the utilization of the MJKN online queue (Hosmer, Lemeshow, & Sturdivant, 2013).

Prior to conducting the binary logistic regression analysis, model suitability was tested using several statistical indicators, namely the -2 Log Likelihood ($-2LL$) value, the Omnibus Test of Model Coefficients, the Hosmer and Lemeshow Test, and the Pseudo R-Square using Cox & Snell and Nagelkerke R^2 . The model was deemed acceptable if the Hosmer and Lemeshow significance value was > 0.05 and the Omnibus Test value was < 0.05 (Hosmer et al., 2013). The results of the binary logistic regression analysis are presented in the form of odds ratios (OR), 95% confidence intervals (95% CI), and significance values (p-values). A variable is considered to have a significant effect if the p-value is < 0.05 and the confidence interval does not cross the value of 1.

RESULTS AND DISCUSSION

This study utilized secondary data from primary health care facilities (FKTP) partnered with BPJS Kesehatan in Blitar and Nganjuk Regencies, which are part of the Kediri Branch Office's service area. These two regions were selected because the utilization rate of online queuing via the Mobile National Health Insurance (MJKN) system remained below the national target of 18% (BPJS Kesehatan, 2025). The research data were obtained from the Health Facilities Information System (HFIS) and the BPJS Kesehatan Business Intelligence (BI) Dashboard, which contain information on the characteristics of primary health care facilities (FKTP) and the utilization rates of the MJKN online queue system.

Table 1. Variable Characteristics

Ownership of	Description	Frequency (n)	Percentage (%)
Primary	Government	37	35,9

Health Care Facilities	Private	66	64,1
Total		103	100,0
Type of Primary Health Care Facility	Description	Frequency (n)	Percentage (%)
	Community Health Center	34	33,0
	Primary Care Clinic	24	23,3
	Private Practice Physician	45	43,7
	Total	103	100,0
Type of Primary Health Care Facility Services	Description	Frequency (n)	Percentage (%)
	Outpatient Care	58	56,3
	Outpatient and Inpatient Care	45	43,7
Total		103	100,0
MJKN Targets	Description	Frequency (n)	Percentage (%)
	Achieved ($\geq 18\%$)	69	67,0
	Not Achieved ($< 18\%$)	34	33,0
Total		103	100,0

Based on a sample of 103 primary health care facilities (FKTP), it was found that the majority—66 FKTP (64.1%)—are privately owned, while 37 FKTP (35.9%) are government-owned. In terms of facility type, the majority of primary health care facilities are private practices, totaling 45 facilities (43.7%), followed by community health centers (puskesmas) at 34 facilities (33.0%), and primary clinics at 24 facilities (23.3%). Meanwhile, based on the type of service, the majority of FKTPs provide outpatient services, totaling 58 FKTPs (56.3%), while 45 FKTPs (43.7%) provide both outpatient and inpatient services.

Analysis of the utilization of the MJKN online queue system indicates that 69 primary healthcare facilities (67.0%) have met the target of $\geq 18\%$ online queue utilization, while 34 primary healthcare facilities (33.0%) have not yet met the established national target. These findings indicate that although the majority of primary health care facilities have been able to implement online queuing optimally, there remains a proportion of health facilities that face limitations in the utilization of digital health services (Paré et al., 2021).

Table 2. Values -2 Log Likelihood ($-2LL$)

No	Model	-2 Log Likelihood
1	Initial Model (Constant Only)	130,655
2	Model with Variables (Type of Primary Health Care Facility, Ownership, and Type of Service)	51,284

Multivariate analysis was conducted using binary logistic regression to identify the influence of FKTP characteristics on the utilization of the MJKN online queue system. Prior to the regression analysis, a model fit test was performed. The test results showed that the -2 Log Likelihood value decreased from 130.655 in the initial model (constant only) to 51.284 after independent variables were included in the model. This decrease indicates that the model with independent variables has better predictive power than the model without predictors (Hosmer, Lemeshow, & Sturdivant, 2013).

Table 3. Omnibus Test of Model Coefficients

No	Test	Chi-square	df	p-value
1	Step	79,371	3	0,000
2	Block	79,371	3	0,000
3	Model	79,371	3	0,000

Table 4. Hosmer-Lemeshow Test

Step	Chi-square	df	p-value
1	6,710	3	0,082

The results of the Omnibus Test of Model Coefficients showed a Chi-square value of 79.371 with 3 degrees of freedom (df) and a significance level of $p < 0.001$. These results indicate that the simultaneously constructed logistic regression model is significant in explaining the relationship between FKTP characteristics and the utilization of the MJKN online queue (Hosmer et al., 2013). Furthermore, the results of the Hosmer and Lemeshow Test show a Chi-square value of 6.710 with a p-value of 0.082 (>0.05), indicating that the model has a good goodness of fit because there is no significant difference between the observed values and the model's predicted values (Hosmer et al., 2013).

Table 4. Pseudo R-square (Cox & Snell and Nagelkerke R²)

Step	-2 Log Likelihood	Cox & Snell R Square	Nagelkerke R Square
1	51,284	0,537	0,747

The model's ability to explain the variation in the dependent variable was analyzed using the Pseudo R-Square. The results of the analysis showed a Cox & Snell R-Square value of 0.537 and a Nagelkerke R-Square value of 0.747. The Nagelkerke R-Square value indicates that FKTP characteristics—including ownership, FKTP type, and service type—account for 74.7% of the variation in MJKN online queue utilization, while the remaining 25.3% is influenced by other factors outside the research model.

Table 5. Binary Logistic Regression Test

Variable	B	S.E.	Wald	p-value	OR (Exp(B))	95% CI OR
Ownership	1,309	1,543	0,720	0,396	3,702	0,180 – 76,108
Type of Primary Health Care Facility	2,694	1,336	4,067	0,044	14,786	1,079 – 202,691
JSERVICE Type	0,676	1,131	0,357	0,550	1,966	0,214 – 18,059
Constant	-2,484	1,094	5,153	0,023	0,083	-

The results of the binary logistic regression indicate that the type of primary health care facility (FKTP) has a significant effect on the utilization rate of the MJKN online queue system, with a p-value of 0.044 and an odds ratio (OR) of 14.786 (95% CI: 1.079–202.691). These findings suggest that the type of health facility plays a crucial role in determining the success of online queue implementation in primary health care. Primary Health Care Facilities (FKTP) with specific characteristics are approximately 14.8 times more likely to achieve the online queue utilization target compared to the reference category. These results indicate that differences in organizational capacity, managerial flexibility, resource readiness, and service complexity among types of primary healthcare facilities influence the success rate of digital health service adoption (Ngusie et al., 2022; Vax et al., 2022).

In contrast, the variable of primary health care facility ownership did not show a significant effect on the utilization of the MJKN online queue ($p=0.396$; $OR=3.702$; 95% CI: 0.180–76.108). These results indicate that the ownership status of health facilities—whether government or private—has not yet become a primary factor determining the success of online queue implementation. Similarly, regarding the type of primary healthcare facility service variable, the analysis results showed no significant effect on the utilization of the MJKN online queue ($p=0.550$; $OR=1.966$; 95% CI: 0.214–18.059). These findings indicate that differences in outpatient or inpatient services do not directly determine the level of online queue utilization at primary health care facilities.

Overall, the study results show that the type of primary healthcare facility is the primary determinant influencing the success of online queue implementation through the MJKN in primary healthcare services. These findings reinforce Donabedian's theoretical perspective that the "structure" aspect within healthcare

organizations plays a crucial role in determining the success of digital innovation implementation and healthcare service outcomes (Donabedian, 1966).

DISCUSSION

The Effect of Primary Health Care Facility (FKTP) Ownership on the Adoption of the Mobile JKN Online Queue System

The research results show that FKTP ownership does not have a significant effect on the adoption of the Mobile JKN online queue system. These findings indicate that the digital transformation of primary health care services within the National Health Insurance (JKN) ecosystem has proceeded relatively uniformly across both government- and privately-owned health facilities. Thus, an organization's ownership status is no longer a primary determinant of the successful implementation of digital health services when systems, regulations, and interoperability standards are centrally controlled by BPJS Kesehatan (Binzer et al., 2024).

This phenomenon can be explained through the lens of institutional isomorphism, which refers to a situation where different organizations tend to adopt uniform practices and operational mechanisms due to regulatory pressures and external standards (DiMaggio & Powell, 1983). In the context of the Mobile JKN implementation, all Primary Health Care Facilities (FKTP) are required to meet system integration standards through BPJS bridging, Electronic Medical Record (EMR) integration, and connectivity with the SATUSEHAT platform. This standardization renders variations in organizational characteristics—including the ownership of health facilities—less relevant in determining the success of online queuing.

Additionally, the Mobile JKN application was developed as part of a national digital transformation strategy that is universal and participant-centered, ensuring that all BPJS Health partner healthcare facilities have relatively similar implementation obligations. Integration of membership data based on the National Identity Number (NIK) enables participants to access services without administrative differences between government and private primary healthcare facilities (FKTP). This indicates that the digitization of healthcare services in Indonesia is beginning to move toward a national interoperability model that reduces structural disparities among primary healthcare organizations (Ministry of Health of the Republic of Indonesia, 2022).

The findings of this study reinforce the argument that the success of health technology implementation is more influenced by organizational readiness than by the structural characteristics of the organization. Vax et al. (2022) explain that organizational readiness encompasses technological capacity, human resource readiness, digital leadership, and the ability to adapt to changes in work systems. In line with this, Ngusie et al. (2022) demonstrate that the successful implementation of digital health systems is influenced by infrastructure readiness, healthcare workers' technological literacy, and perceptions of the benefits of technology.

In the context of implementing the Mobile JKN online queue system, organizational readiness is reflected through the availability of digital infrastructure, bridging system integration, internet network quality, RME interoperability, and the capacity of healthcare workers to deliver technology-based services. With the uniformity of integration standards and national regulations, the influence of organizational ownership becomes increasingly minimal because all primary healthcare facilities (FKTP) operate within the same digital ecosystem.

The findings of this study also indicate a shift in the determinants of successful digital health service implementation from administrative factors toward technological factors and implementation capacity. In the early phases of digital transformation, institutional characteristics such as organizational ownership often influence funding capacity, managerial flexibility, and technological readiness. However, once digital

governance is nationally integrated through regulations and system standardization, these influences become less dominant (DiMaggio & Powell, 1983).

The implications of these findings suggest that strategies to improve the performance of the Mobile JKN online queue system should no longer focus on differentiating the types of healthcare facility ownership but should instead be directed toward strengthening overall digital implementation capacity through enhanced system interoperability, improved digital literacy among healthcare workers, optimized technical support, and enhanced information technology infrastructure quality across all BPJS Kesehatan partner primary healthcare facilities (FKTP).

The Effect of Primary Health Care Facility Type on Mobile JKN Online Appointment Achievement

The research results indicate that the type of primary health care facility has a significant effect on the achievement of Mobile JKN online appointments. Primary care clinics and private practices have a greater likelihood of meeting online appointment utilization targets compared to community health centers. These findings suggest that the characteristics of primary health care organizations influence the effectiveness of digital health system implementation.

The most relevant perspective in explaining this phenomenon is the difference in the scale of services and the complexity of workload management among different types of primary health care facilities. Community health centers (Puskesmas) structurally bear more complex service responsibilities because they not only provide curative care but also promotive, preventive, and community-based public health programs (Ministry of Health of the Republic of Indonesia, 2019). The high volume of visits, the scope of health programs, and limited administrative capacity mean that managing online queues is just one of many operational priorities that must be managed simultaneously.

In contrast, primary care clinics and private practices have relatively lower numbers of registered patients and visit volumes, making the online queue management process simpler, easier to monitor, and easier to optimize consistently. This finding supports the results of Ningsih et al. (2022), which indicate that the ratio of registered patients to the administrative capacity of a healthcare facility influences the success of digital system implementation. The higher the organization's administrative workload, the greater the risk of administrative overload, which can hinder the effectiveness of health technology implementation.

In addition to workload factors, the results of this study also indicate a mismatch between the service system design of Community Health Centers (Puskesmas) and the system architecture of the Mobile JKN digital queueing system. Puskesmas are currently beginning to adopt a cluster-based service system that is multidisciplinary and integrated, whereas the Mobile JKN queueing system still uses a clinic-based approach that is more static (Indonesian Ministry of Health, 2023).

The misalignment between technology design and organizational workflows is one of the main factors contributing to the low effectiveness of health technology implementation. The complexity of cluster-based service systems makes the patient triage process at community health centers more dynamic, making it difficult to integrate optimally with digital queueing systems based on clinic divisions. In practice, patients who register via Mobile JKN are not always placed in the appropriate service flow after clinical assessment, so staff often have to make manual adjustments. This situation reduces the efficiency of the online queueing system and increases the administrative burden of service delivery.

These findings reinforce the task-technology fit theory, which explains that the success of technology implementation is influenced not only by the quality of the technology but also by the fit between the technology and the organization's work processes (Goodhue & Thompson, 1995). Weik et al. (2024) explain that multidisciplinary healthcare systems require adaptive and flexible information systems to effectively support service dynamics.

Another factor explaining the high uptake of online appointment systems at primary care clinics and private practices is the organizations' ability to implement local technical adaptations and provide user support. Primary care clinics and independent practices have greater flexibility in developing additional communication strategies, such as using WhatsApp or social media as supplementary channels for digital

services. These communication channels serve as a bridge between formal digital systems and the needs of users on the ground, particularly for patients facing technical difficulties in using the app.

Previous research indicates that the success of health technology implementation is determined not only by the availability of digital systems but also by the effectiveness of user support systems and user guidance strategies (Paré et al., 2021). The use of additional communication channels has proven effective in enhancing patient engagement and promoting more optimal utilization of digital health services.

In addition to organizational factors, the results of this study also indicate that the success of online queuing is influenced by the characteristics of the participants served by each type of primary health care facility (FKTP). Community health centers (Puskesmas) generally serve a more socioeconomically heterogeneous population, including vulnerable groups with low digital literacy such as the elderly, rural communities, and participants in the Premium Assistance Program (PBI). Conversely, primary care clinics and private practice physicians primarily serve participants with higher levels of education and digital literacy, leading to more optimal adoption of the Mobile JKN features (Eriksson et al., 2024).

These findings indicate that the success of implementing the Mobile JKN online queue system results from a complex interplay between organizational capacity, technological system suitability, user support strategies, and the social characteristics of service users. Therefore, improving online queue performance at Puskesmas requires a more adaptive approach through the development of a queue system aligned with a cluster-based service model, strengthening administrative capacity, and enhancing community digital literacy.

The Effect of Primary Health Care Facility (FKTP) Service Types on the Adoption of the Mobile JKN Online Queue System

The results of the study indicate that the type of service provided by primary health care facilities (FKTP) does not have a significant effect on the adoption of the Mobile JKN online queue system. These findings suggest that the complexity of health facility services—including the availability of inpatient care—does not directly determine the success of implementing a digital queue system in primary health care.

Theoretically, healthcare facilities with inpatient services tend to have a more complex service structure, a higher workload, and a broader distribution of administrative tasks compared to outpatient healthcare facilities. In previous studies, this complexity has been associated with low effectiveness in the implementation of digital health technologies because organizations must divide their service focus across various types of services simultaneously (Jeilani & Hussein, 2025).

However, the results of this study indicate that this effect is not statistically significant. This can be explained by the fact that the online queue feature in the Mobile JKN app is functionally designed specifically to support the outpatient service registration process; thus, the presence of inpatient services does not directly interact with the operational mechanisms of the digital queue system.

From a health information system design perspective, Mobile JKN is an outpatient-oriented system, so its primary focus is on optimizing the outpatient service registration workflow. Consequently, the variety of service types offered by Primary Health Care Facilities (FKTP) does not create a fundamental difference in the use of the online queue system. This finding aligns with the task-technology fit principle, which explains that the effectiveness of technology implementation is more influenced by the fit of the technology with specific tasks than by the overall complexity of the organization (Goodhue & Thompson, 1995).

Furthermore, the results of this study also indicate that the complexity of healthcare services does not necessarily lead to an increased burden of technology implementation if digital systems are well-integrated into the organization's work processes. Jeilani and Hussein (2025) explain that the implementation of health technology in the early stages can increase the organization's workload; however, in the long term, it can actually improve operational efficiency if the system is successfully and optimally integrated.

In the context of this study, the success of online queue systems appears to be more influenced by the quality of digital system integration, technological implementation readiness, information system interoperability, and the organization's capacity to manage outpatient services than by the presence of

inpatient services themselves. Thus, the type of primary healthcare facility (FKTP) is not the primary determinant of the success of the Mobile JKN online queue implementation.

These findings imply that the development of digital queuing systems in primary health care should focus on improving system alignment with outpatient service workflows, optimizing data interoperability, and strengthening organizational capacity for technology implementation. This approach is considered more relevant than differentiating system development based on the type of health facility services.

CONCLUSION

Based on the research findings, it can be concluded that the type of primary health care facility (FKTP) does not have a significant effect on the achievement of Mobile JKN online queues in Blitar and Nganjuk Regencies. This indicates that the implementation of digital health services through Mobile JKN has proceeded relatively uniformly across both public and private FKTPs, as all health facilities partnered with BPJS Kesehatan operate under the same regulatory framework and digital integration standards. Conversely, the type of FKTP was found to have a significant effect on the achievement of Mobile JKN online queues.

Primary care clinics and independent private practices have a higher likelihood of achieving this compared to Community Health Centers (Puskesmas) because they have lower service volumes, simpler service systems, and participants with better digital literacy, allowing the implementation of online queues to run more optimally. Meanwhile, the type of primary healthcare facility (FKTP) service does not significantly affect the implementation of the Mobile JKN online queue system because the online queue feature on the Mobile JKN app is specifically designed to support outpatient services; thus, the complexity of inpatient services does not directly impact the implementation of this digital queue system.

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