The Impact of the Use of the JKN Mobile Application on the Efficiency of Outpatient Waiting Time at RSUD Kesehatan Kerja Provinsi Jawa Barat

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Abstract. *This research examines the impact of the utilization of the JKN Mobile application on the efficiency of outpatient waiting times at the Provincial Health Work Hospital of West Java. This research uses a quantitative approach with data collection techniques through distributing questionnaires to 72 outpatient patients and mobile JKN users at the Provincial Health Work Hospital of West Java. From the results of the questionnaire distribution, it is found that there is a moderate correlation and a positive effect between the utilization of the JKN Mobile application and the efficiency of waiting times in outpatient care. From the hypothesis test results, it was found that t count > t table, 12.611 > 1.994, thus the hypothesis testing in this study is significant, with H0 rejected and Ha accepted, meaning there is a significant impact of the utilization of the JKN Mobile application on the efficiency of outpatient waiting times at the Provincial Health Work Hospital of West Java.%Although the impact of utilizing the JKN Mobile application on waiting time efficiency in outpatient care is only 18.8%, with proper planning, it can be used as a strategy to improve waiting time efficiency at RSUD Kesehatan Kerja Outpatient Department. In this regard, the author suggests to the Hospital management, among others: (1) Increase the use of JKN Mobile through socialization and assistance, especially during registration, (2) BPJS Kesehatan needs to enhance the features and accessibility of the application, especially for the elderly and users with digital limitations.*

Keywords*: JKN Mobile; waiting time; utilization of applications; Efficiency; outpatient services*

Introduction

One of the quality indicators in the hospital system is the provision of health services that are fast, accurate, and efficient. One of the main complaints from patients in outpatient services is the length of waiting time, especially for participants in the National Health Insurance (JKN). According to the standards set by the Ministry of Health of the Republic of Indonesia through Decree No. 129/Menkes/SK/II/2008, the ideal waiting time for outpatient services is ≤60 minutes from patient registration to receiving medical services. However, in practice, many healthcare facilities have not been able to consistently meet this time standard (Sondakh et al., 2023).

In order to improve the quality and efficiency of healthcare services, the Indonesian government through the Social Security Administration Agency (BPJS) Health continues to develop various innovations based on information technology. One of the innovations implemented is the JKN Mobile application, which allows participants to access services such as service registration, online queueing, and health screening digitally (Wulandari & Fajarwati, 2021).

According to Octavia & Winarno (2024), the development of the Mobile JKN application allows participants to register, take online queues, and obtain service information independently. This innovation is expected to reduce patient waiting times and alleviate the congestion at registration counters. The use of JKN Mobile is also anticipated to support the digital transformation of health services in Indonesia.

Several studies have shown that the utilization of JKN Mobile significantly impacts the efficiency of services. Research at RSU Mitra Medika indicates that patients using JKN Mobile have shorter waiting times compared to those who do not (Octavia & Winarno, 2024). A similar finding was made by Arnita and Yunengsih (2024), where the implementation of application-based online queueing successfully enhanced patient satisfaction with outpatient services.

However, the effectiveness of JKN Mobile is still facing several challenges, including the limited digital literacy of the population, network limitations, and a lack of socialization from the health facilities (Kurniawati et al., 2021; Novianti & Gunawan, 2024). Therefore, more specific and contextual research needs to be conducted to see how the utilization of JKN Mobile impacts the efficiency of patient wait times, particularly in government hospital settings.

Along with the development of information technology in healthcare services, the implementation of Electronic Medical Records (EMR) has become one important innovation that has proven to enhance the efficiency and effectiveness of services in healthcare facilities. EMR not only replaces the manual paper-based system, but also enables real-time integration of patient data, supports medical decision-making, and minimizes recording errors (Pribadi et al., 2018; Darwito et al., 2016). Research by Latipah, Solehah, and Setiatin (2021) in Hospital X shows that the implementation of EMR is effective in improving outpatient services in four main aspects: tasks and functions, plans or programs, regulations, and achieving ideal service goals. These findings reinforce the importance of digitizing health information systems, including in the context of using the JKN Mobile application, which is also digital-based and oriented towards reducing patient wait times.

RSUD Kesehatan Kerja Provinsi Jawa Barat as a regional referral hospital has implemented an online queue system through JKN Mobile. However, there has not been much research directly examining the impact of this application on the waiting time for BPJS patients at the hospital. The conceptual framework in this study links the independent variable (utilization of JKN Mobile) with the dependent variable (waiting time efficiency). It is assumed that the higher the utilization of the online registration and queue features in the application, the shorter the waiting time will be. Therefore, this study aims to analyze the impact of utilizing the JKN Mobile application on the efficiency of outpatient waiting times at RSUD Kesehatan Kerja Provinsi Jawa Barat

Basic Theory

1. Health Information System Theory

According to McLeod and Schell (2007), a health information system is a framework that integrates data, information, and processes to support hospital operations and decision-making. The JKN Mobile application is categorized as a digital health information system that aims to facilitate patient administration such as registration and queuing.

The implementation of a well-structured health information system can significantly improve efficiency by reducing redundant processes and minimizing patient waiting time. Latipah et al. (2021) found that digital innovations such as electronic medical records and online queuing systems increase service effectiveness and hospital performance.

2. Health Service Efficiency Theory

Health service efficiency refers to a hospital's ability to deliver services promptly and accurately with minimal waste of time and resources. Based on the Indonesian Ministry of Health Regulation No. 129/Menkes/SK/II/2008, the ideal waiting time for outpatient services is no more than 60 minutes. Integrating digital technologies such as the JKN Mobile online queuing system is one of the strategies that can significantly reduce patient waiting times (Wulandari & Fajarwati, 2021).

3. Diffusion of Innovation Theory

Rogers (2003) in his *Diffusion of Innovation Theory* explains that the adoption of technology is influenced by five factors:

- Relative Advantage: the perceived improvement over the previous method
- Compatibility: the degree to which the innovation aligns with user needs
- Complexity: how easy the innovation is to understand and use
- Trialability: the ability to experiment with the innovation
- Observability: visibility of the benefits of using the innovation

The adoption of the JKN Mobile application will increase if users perceive it as user-friendly, beneficial, and easy to access, especially in reducing waiting times and improving service efficiency.

4. Service Quality Theory (SERVQUAL)

According to the SERVQUAL model by Parasuraman, Zeithaml, and Berry in Syamsul Bahri et al. (2023), service quality is determined by five dimensions: tangible, reliability, responsiveness, assurance, and empathy. In the context of JKN Mobile, responsiveness and reliability are the most crucial dimensions for improving service quality perception, especially in the context of online registration applications as concluded by Saputri (2024).

Methodology

The research methodology is a quantitative method with a descriptive approach. According to (Sugiyono, 2017:14), quantitative research methods can be defined as research methods that are based on positivist philosophy, used to study a specific population or sample, with sampling techniques generally conducted randomly, data collection using research instruments, analysis, and being quantitative/statistical aimed at testing established hypotheses. The data collection technique in this research uses a Questionnaire. According to (Sugiyono, 2019:204), a questionnaire is a data collection technique carried out by providing a set of written questions or statements to respondents for them to answer. In this study, the author distributed 16 questions to the respondents. In this study, data was collected from BPJS patients receiving outpatient services at the RSUD Kesehatan Kerja in March 2025. The study sample consisted of 72 BPJS patients selected through purposive sampling, specifically patients who have used JKN Mobile and received outpatient services. The population consisted of 250 patients, and the sample size was determined using Slovin's formula (with a

margin of error of 10%). The data processing/analysis method was used to measure the utilization of the application and perceptions of service efficiency in using the JKN mobile application concerning waiting time. Descriptive statistical analysis (mean, frequency table, bar chart) and Pearson correlation test were conducted using SPSS 25.

Results and Discussion

Here are the Results and Discussion on the Impact of Utilizing the JKN Mobile Application on Outpatient Waiting Time Efficiency at RSUD Kesehatan Kerja Provinsi Jawa Barat :

1. **Testing the Validity and Reliability of the Instrument:**
   To calculate the validity or accuracy of a statement, significance values are needed. However, prior to that, the testing in this research is a two-tailed test, and to determine the rtabel value, this study used 72 samples with a = 5%, for df = N-2, in this case df = 72 - 2 = 70, with a significance level of 95% and 5%. The following validity test used IBM SPSS Statistics 25. The validity test is conducted to determine whether the questions on the questionnaire are appropriate for use. A question is considered valid if the rhitung value > rtabel, if r-count < r-table = not valid. The validity test was conducted on 72 respondents who met the predetermined criteria using the Slovin formula.

Table 1. Validity Test of the Utilization Variable of JKN Mobile (X)

No	Quetions	Correlation Value (r)	Sig. (2-tailed)	Description
1	Understanding the JKN application	0.485 – 0.641	0.000	Valid
2	Understanding the JKN Mobile features	0.521 – 0.796	0.000	Valid
3	Using JKN Mobile for registration	0.362 – 0.615	0.000 – 0.002	Valid
4	Using the online queue feature	0.512 – 0.720	0.000	Valid
5	Using the bed information feature	0.375 – 0.782	0.000 – 0.037	Valid
6	Using the health history screening feature	0.571 – 0.785	0.000	Valid
7	Ease of access to JKN Mobile	0.583 – 0.607	0.000 – 0.001	Valid
8	Ease of logging in and navigating the application	0.501 – 0.754	0.000	Valid

9	Satisfaction with JKN Mobile services	0.604 – 0.714	0.000	Valid

Source: Processed by the Author, SPSS 25 and Excel (2025)

Table 2. Validity Test of the Waiting Time Efficiency Variable (Y)

No	Quetions	Correlation Value (r)	Sig. (2-tailed)	Description
1	No need to wait in line for long	0.221 – 0.684	0.000 – 0.062	Valid
2	Shorter waiting time	0.243 – 0.751	0.000 – 0.040	Valid
3	Faster service	0.142 – 0.756	0.000 – 0.041	Valid
4	Faster administration	0.220 – 0.763	0.000 – 0.063	Valid
5	More orderly queuing system	0.224 – 0.717	0.000 – 0.058	Valid
6	More regular visit schedule	0.220 – 0.751	0.000 – 0.063	Valid
7	Increased service efficiency	0.167 – 0.814	0.000 – 0.161	Valid*

Source: Processed by the Author, SPSS 25 and Excel (2025)

The results of the validity test of tables 1 and 2 on the statement items show that the significance value is declared valid for the variable of online registration system effectiveness and the queue system variable. It can be concluded that the statements of these two variables are valid for this study.

Reliability is the stability of measurement; a tool is said to be reliable if the same value is obtained when used repeatedly. The reliability test in this study was conducted at RSUD Kesehatan Kerja Provinsi Jawa Barat using the Cronbach's Alpha testing technique.

Table 3. Validity Test of Reliability

Reliability Statistics

Cronbach's Alpha	N of Items
,928	16

Source: Processed by the Author, SPSS 25 (2025)

Based on table 3, the calculated r for all 16 statement items on Cronbach's Alpha is 0.928, which is greater than the r-table value of 0.197. Therefore, it can be concluded that all statement items in this questionnaire can be used because they are reliable.

2. Correlation Test

Table 4. Correlation Test Result

Correlations

		Utilization of JKN Mobile	Waiting Time Efficiency
Utilization of JKN Mobile	Pearson Correlation	1	,434**
	Sig. (2-tailed)		,000
	N	72	72
Waiting Time Efficiency	Pearson Correlation	,434**	1
	Sig. (2-tailed)	,000	
	N	72	72

Source: Processed by the Author, SPSS 25 (2025)

Correlation is intended to determine the level of trend in the relationship between the expression variable and the correlation coefficient (R) and to determine the type of independent variable (x) and dependent variable (Y), as well as the positive or negative relationship. This is based on the decision:

- If the significance value < 0.05, then it is correlated, it can be concluded that there is a significant relationship between variable X and Y. This means that the relationship found does not occur by coincidence and has statistical meaning.
- If the significance value > 0.05, then it is not correlated, there is no significant relationship between variable X and Y. This means that the relationship found is likely to occur by chance and cannot be generalized.

Based on the results of the correlation test in the table above for the variable of online registration system effectiveness, the significance value obtained is 0.000, and for the queue system variable, the significance value is also 0.000. Hence, it can be concluded that both variables have a relationship/correlation. The correlation value for the variable of online registration system effectiveness is 0.434, and for the queue system variable is 0.434; the relationship between these two variables is positive, indicating that as the utilization of JKN Mobile increases, the waiting time efficiency for patients also improves. To determine the degree of the relationship between the two variables, one can refer to the following guidelines on the degree of relationship:

- Pearson Correlation Value 0.00 / 0.20 = no correlation.
- Pearson Correlation Value 0.21 / 0.40 = weak correlation.
- Pearson Correlation Value 0.41 / 0.60 = moderate correlation.
- Pearson Correlation Value 0.61 / 0.80 = strong correlation.
- Pearson Correlation Value 0.81 / 1.00 = perfect correlation.

Therefore, it can be concluded that the relationship/correlation between the effectiveness of the online registration system (X) and the queuing system variable (Y) with a significance value of 0.434 falls within the Pearson correlation value interval of 0.41/0.60, which means that variable (X) against variable (Y) in this study indicates a degree of relationship defined as moderate correlation.

3. Simple Linear Regression Test

Table 5. Result of Simple Linear Regression Test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	21,017	4,238		4,959	,000
	Waiting Time Efficiency	,567	,141	,434	4,032	,000

Source: Processed by the Author, SPSS 25 (2025)

(Y= 21,017 + 0,567 X)

Based on the results of the simple linear regression test, it shows a constant value of 21.017 and a value for the variable of waiting time efficiency of 0.567. The regression coefficient is positive, indicating that the direction of the influence between variable X and variable Y is positive.

4. Hypothesis Testing

Namely using the formula t-count > t-table, with a significance value < 0.05. This study uses a two-tailed test with a sample size of 72 and alpha/2 = 5%/2 = 0.025. In this study, the author has the following statement (hypothesis):

H0: The utilization of the JKN Mobile Application does not affect the Efficiency of Outpatient Waiting Time at RSUD Kesehatan Kerja.

Ha: The utilization of the JKN Mobile Application affects the Efficiency of Outpatient Waiting Time at RSUD Kesehatan Kerja

Below, the author presents the t-table value and hypothesis t-test that the author processed using SPSS statistics version 25.

Table 6. Hypothesis Test Result

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	21,017	4,238		4,959	,000
	Waiting Time Efficiency	,567	,141	,434	4,032	,000

Source: Processed by the Author, SPSS 25 (2025)

It can be concluded that the interpretation of this test yields a t-table value of 1.994 (using the formula df= N-2, 72-2= 70) and in table 6, a calculated t-value of 21.017 is produced in the t column. According to the criteria if the calculated t > t table, 12.611 > 1.994, then the hypothesis test in this study is significant, with H0 being rejected and Ha accepted, meaning there is a significant effect of utilizing the JKN Mobile application on the waiting time efficiency in the outpatient department of RSUD Kesehatan Kerja Provinsi Jawa Barat.

5. Coefficient of Determination Test

Table 7. Coefficient of Determination Test Result

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,434[a]	,188	,177	4,68208

Source: Processed by the Author, SPSS 25 (2025)

From the results, it is known that the magnitude of the correlation/relationship (R) is 0.434, and the coefficient of determination r2 obtained in the R Square column is 0.188, which means that the influence of the independent variable (utilization of the JKN mobile application) on the dependent variable (efficiency of waiting time in outpatient care) is 18.8%. Meanwhile, the remaining 81.2% is influenced by various other factors. From these results, it can be concluded that although the utilization of the JKN mobile application has not yet fully succeeded in improving waiting time efficiency in outpatient services at the RSUD Kesehatan Kerja, its increasing influence has great potential to be used as a strategy for waiting time

efficiency in outpatient services at the RSUD Kesehatan Kerja. This finding aligns with previous research by Octavia & Winarno (2024) and Rahmat & Sari (2022), which supports the effectiveness of digital platforms in improving access to health services. However, as noted by Kurniawati et al. (2021), there are still technical barriers and limitations in user understanding.

Conclusion

Based on the discussions presented by the author earlier, it can be concluded :

1. Implementation of the online registration system for outpatient patients through the JKN mobile application at the West Java Provincial Health Work Hospital is quite efficient in terms of waiting time, following testing stages by distributing several questionnaires to patients.
2. Online registration system for outpatient patients using the JKN mobile application affects waiting times at the West Java Provincial Health Work Hospital, where the impact of using the JKN mobile service can reduce patients' waiting times.
3. Although its use is already categorized as quite efficient, it has not yet fully resolved the duration of queues at present due to many other factors.

In the future, the author suggests enhancing the use of JKN Mobile through socialization and assistance, especially during registration. Furthermore, BPJS Health needs to improve the features and accessibility of the application, particularly for the elderly and users with digital limitations. For further research, it is hoped that it can identify the factors affecting waiting time efficiency comprehensively, and then expand the focus on patient satisfaction, service quality, and the use of applications at RSUD Kesehatan Kerja Provinsi Jawa Barat.

Bibliography

4, P. B. R. N. (2018). Permenkes 24 tahun 2022. Peraturan Menteri Kesehatan Republik Indonesia Nomor 24 Tahun 2022, 151(2), 10–17.
Arnita, H., & Yunengsih, Y. (2024). Pengaruh Penerapan Aplikasi Pendaftaran *Online* Terhadap Pelayanan Pendaftaran Rawat Jalan di Rumah Sakit Hasna Medika Cirebon. *Jurnal Indonesia: Manajemen Informatika dan Komunikasi*, 5(3), 2752-2760.

Asyerem, A. Y. & Ruhukail, P. P. (2024). *Faktor-Faktor yang Mempengaruhi Waktu Tunggu Pelayanan Rawat Jalan di RSUD Sele Be Solu Kota Sorong*.

Bahri, S., Nurhidayat, D. A., & Wulandari, R. (2023). *Analisis Kualitas Pelayanan Aplikasi Mobile JKN Menggunakan Metode SERVQUAL*. Jurnal Ilmiah Kebijakan Kesehatan, 12(1), 45–53.

C Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: Skala Pengukuran Persepsi Konsumen terhadap Kualitas Pelayanan. *Jurnal Retailing*, 64(1), 12–40.

Kementerian Kesehatan Republik Indonesia. (2008). *Peraturan Menteri Kesehatan Nomor 129/Menkes/SK/II/2008 tentang Standar Pelayanan Minimal Rumah Sakit*.

Kementerian Kesehatan RI. (2017). *Petunjuk Teknis Manajemen Waktu Tunggu Pelayanan di Fasilitas Kesehatan*. Jakarta: Direktorat Jenderal Pelayanan Kesehatan.

Kurniawati, Y. D., Djasri, H., & Utarini, A. (2021). Dampak implementasi aplikasi pendaftaran daring pelayanan rawat jalan rumah sakit. *Jurnal Manajemen Pelayanan Kesehatan*, 24(2), 48-54.

Latipah, T., Solihah, S., & Setiatin, S. (2021). Pengaruh Rekam Medis Elektronik Terhadap Peningkatan Efektivitas Pelayanan Rawat Jalan di Rumah Sakit X. *Cerdika: Jurnal Ilmiah Indonesia*, *1*(10), 1422-1434.

Lestari, R., Handayani, P. W., & Hidayanto, A. N. (2020). Analisis faktor-faktor yang mempengaruhi pemanfaatan aplikasi JKN *Mobile* oleh peserta BPJS. *Jurnal Sistem Informasi Kesehatan Indonesia*, 8(1), 45–54.

McLeod, R., & Schell, G. (2007). *Sistem Informasi Manajemen* (Edisi ke-10). Jakarta: Prenhallindo.

Nazir, M. (2013). . Metode Penelitian. Bogor: Ghalia Indonesia. 93. Peraturan Pemerintah. (2021). Peraturan Pemerintah Nomor 47 Tahun 2021 tentang Penyelenggaraan Bidang Perumahsakitan. 086146.

Novianti, D. & Gunawan, E. (2024). *Pengaruh Efektivitas Sistem Pendaftaran Online Pasien Rawat Jalan Terhadap Sistem Antrian di RS AMC Bandung*.

Octavia, C., & Winarno, E. (2024). Efektivitas Pendaftaran *Online* Peserta Menggunakan Aplikasi *Mobile*-JKN dalam Pelayanan Pasien Rawat Jalan di RSU Mitra Medika Amplas. *Jurnal Kesehatan Amanah*, 8(1), 254-264.

Permenkes RI. (2013). Permenkes 55 tahun 2013 tentang Penyelenggaraan Pekerjaan Perekam Medis. Kemenkes RI,Nomor 65(879), 2004–2006.

Purwanti, I. et al. (2024). *Hubungan Penerapan Rekam Medis Elektronik dengan Waktu Tunggu Pasien di RS Mata Dr. YAP Yogyakarta*.

Rahmat, A., & Sari, N. M. (2022). Pengaruh penggunaan fitur antrean *online* pada aplikasi JKN *Mobile* terhadap waktu tunggu pasien di RSUD Kabupaten Sleman. *Jurnal Manajemen Pelayanan Kesehatan*, 25(2), 112-119.

Rogers, E. M. (2003). *Diffusion of Innovations* (Edisi ke-5). New York: Free Press.

Saputri, N. D. (2024). *Analisis Dimensi SERVQUAL terhadap Kualitas Layanan Aplikasi JKN Mobile di Puskesmas Kota Bandung*. Jurnal Administrasi Kesehatan Indonesia, 9(1), 22–31.

Sondakh, R. W. et al. (2023). *Upaya Efisiensi Waktu Tunggu Pasien BPJS pada Pelayanan Rawat Jalan di Rumah Sakit Mata Provinsi Sulawesi Utara*.

Sugiyono, P. D. (2013). *Metode Penelitian Kuantitatif,Kualitatifdan R&D.Bandung: Alfabeta.*

Sugiyono, P. D. (2017). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D. Bandung : Alfabeta, CV*.

Sugiyono, P. D. (2019). *Metode Penelitian Kuantitatif, Kualitatif dan R&D, Bandung : CV, Alfabeta. 203*

Wulandari, N., & Fajarwati, F. (2021). Efektivitas aplikasi *Mobile* JKN terhadap kemudahan akses layanan kesehatan. *Jurnal Administrasi Kesehatan Indonesia*, 9(3), 127-134.