
Utilization Of The Online Registration Feature In The Jkn Mobile Application With The Workload Of Registration Officers At Cililin Regional Hospital

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Abstract

Outpatient registration services are an important indicator of hospital service quality. The utilization of the Mobile JKN application is expected to improve service efficiency, but its implementation at Cililin Regional Hospital is not optimal, potentially affecting the workload of registration officers. This study aims to analyze the relationship between the utilization of the online registration feature in the Mobile JKN application and the workload of outpatient registration officers at Cililin Regional Hospital. The study used a quantitative approach with descriptive and survey methods. The study population included all registration officers at Cililin Regional Hospital and all patients using Mobile JKN during the period of December 2025 to February 2026, with a sample of 10 registration officers selected using purposive sampling. The research instruments included the NASA-TLX questionnaire, interviews, observations, and documentation. Data analysis was performed univariately and bivariately using Fisher's Exact Test. The results showed that 60% of Mobile JKN utilization was in the optimal category, while the workload of officers was divided equally between the moderate and high categories, each at 50%. The Fisher's Exact Test produced a p-value of 0.048. The conclusion of the study shows that there is a significant relationship between the use of the online registration feature on the Mobile JKN application and the workload of registration officers at Cililin Regional Hospital.

Keywords: Health Information Systems, Hospital Registration, Mental Workload, Mobile JKN, Outpatient Services

INTRODUCTION

Effective and efficient healthcare services are indicators of hospital quality. According to Law No. 17 of 2023, hospitals are required to provide quality healthcare services. Law No. 25 of 2009 and Law No. 44 of 2009 emphasize that public and hospital services must be implemented effectively, including the outpatient registration process, which is the main entry point for services.

To support service efficiency, BPJS Kesehatan introduced the Mobile JKN application, which provides online registration, online queuing, and various other features (Law No. 24 of 2011). Research by Lutfi and Irda (2024) and Nindia and Sali (2025) shows that Mobile JKN effectively increases registration efficiency, reduces waiting times, and improves patient satisfaction.

However, the implementation of Mobile JKN at Cililin Regional Hospital has not been optimal. Although registration has been carried out via Mobile JKN and manually at an equal rate, many patients still haven't utilized the app due to limited technological skills or preferring to register directly at the counter. This situation requires staff to handle manual registrations while simultaneously educating patients on how to use the app.

This problem is exacerbated by the increasing number of patient visits each year without a corresponding increase in the number of registration staff. As a result, the workload of staff increases, creating stress and potentially reducing the quality of service. Therefore, workload measurement is necessary to objectively assess staff working conditions.

This study aims to analyze the relationship between Mobile JKN utilization and the workload of outpatient registration staff at Cililin Regional Hospital using the NASA-TLX method. This research is important as an evaluation of Mobile JKN utilization in improving service efficiency. The novelty of this study lies in the analysis of the relationship between

Mobile JKN utilization and the workload of registration staff at Cililin Regional Hospital using the NASA-TLX method.

RESEARCH METHODS

This study employed a quantitative approach with descriptive methods and a survey approach. The quantitative descriptive method is used to describe research phenomena based on numerical data, which is then systematically interpreted (Komalasari et al., 2023; Purwono et al., 2021; Putra, 2015). The survey approach was chosen because the research was conducted to obtain information on characteristics, behaviors, and relationships between variables through data collection from respondents using interviews and questionnaires (Neuman W. Lawrence, 2003; Sugiyono, 2013).

The research instruments included questionnaires, interview guidelines, observation sheets, and documentation studies (Notoatmodjo, 2018; Moleong, 2018; Sugiyono, 2018). The measurement of the workload of officers was carried out using the NASA-TLX questionnaire, while data on the utilization of the Mobile JKN online registration feature was obtained through questionnaires and secondary hospital data. Data analysis was carried out univariately to describe the frequency distribution and percentage of each variable, and bivariate analysis using Fisher's Exact Test because the sample size was only 10 respondents, thus not meeting the assumptions of the Chi-Square test (Notoatmodjo, 2018). The significance level used was 5% ($\alpha = 0.05$).

The study population was all 10 registration officers at Cililin Regional Hospital and all patients using Mobile JKN during the period of December 2025 to February 2026. The study sample was determined using a non-probability sampling technique with a purposive sampling method, namely selecting respondents based on predetermined criteria. The sample used in this study was 10 outpatient registration officers at Cililin Regional Hospital (Sugiyono, 2017; Sugiyono, 2018).

The research procedure began with data collection through interviews, observation, documentation, and questionnaire distribution to respondents. The data was then edited, processed, and presented before being analyzed using univariate and bivariate methods. The results were then used to determine the relationship between the use of the online registration feature in the Mobile JKN application and the workload of outpatient registration staff at Cililin Regional Hospital (Notoatmodjo, 2018).

RESULTS AND DISCUSSION

Results of the Questionnaire on the Utilization of the Online Registration Feature of the JKN Mobile Application

Table 1. Distribution of Utilization Frequency

Category	Frequency	Percentage
Low	3	30%
Currently	1	10%
Tall	6	60%

Table 2. Questionnaire Weighting Data

Officer	Indicator						TOTAL
	MD	PD	TD	P	FR	EF	
Registration 1	3	2	4	2	0	4	15
Registration 2	2	0	6	2	4	1	15
Registration 3	3	0	5	1	4	2	15
Registration 4	2	1	5	1	4	2	15

Registration 5	3	0	5	4	1	2	15
Registration 6	5	0	4	2	2	2	15
Registration 7	4	1	5	2	0	3	15
Registration 8	2	2	4	2	1	4	15
Registration 9	3	2	5	1	1	3	15
Registration 10	2	1	5	1	5	1	15

Based on Table 2, it is known that all respondents obtained a total weighted score of 15, which indicates that each officer has provided an assessment of all workload indicators, namely Mental Demand (MD), Physical Demand (PD), Temporal Demand (TD), Performance (P), Frustration Level (FR), and Effort (EF) according to the questionnaire weighting method. Although the total weight of each respondent is the same, the distribution of weights on each indicator varies. This difference indicates that each officer has a different perception regarding the indicators that most influence their perceived workload. This weighted data is then used as the basis for calculating the workload score to obtain the workload category for each officer in the next analysis stage.

Table 3. Rating Data

Officer	Indicator					
	MD	PD	TD	P	FR	EF
Registration 1	80	50	80	80	0	90
Registration 2	80	0	90	90	90	85
Registration 3	90	0	90	90	90	75
Registration 4	90	70	80	80	70	75
Registration 5	90	0	80	75	75	75
Registration 6	80	0	80	85	75	75
Registration 7	80	80	85	90	0	85
Registration 8	90	85	90	100	80	85
Registration 9	85	100	90	85	80	80
Registration 10	80	70	90	90	70	70

Based on Table 3, it is known that the results of the rating for each workload indicator indicate variations in the assessments of each registration officer. In general, the Mental Demand (MD), Temporal Demand (TD), and Performance (P) indicators obtained relatively high scores, ranging from 80–100, indicating that officers felt mental demands, time pressure, and demands to achieve good performance in carrying out their work. Meanwhile, the Physical Demand (PD) and Frustration Level (FR) indicators showed more varied scores among respondents. The results of this rating were then combined with weighted data to calculate the final workload score using the NASA-TLX method, thus obtaining the workload category for each officer.

Table 4. Product Value Data

Officer	Indicator					
	MD	PD	TD	P	FR	EF
Registration 1	240	100	320	160	0	360
Registration 2	160	0	450	270	360	85
Registration 3	270	0	450	90	360	150
Registration 4	180	70	400	80	280	150
Registration 5	270	0	400	300	75	150
Registration 6	400	0	320	170	150	150
Registration 7	320	80	425	180	0	255
Registration 8	180	170	360	200	80	340
Registration 9	255	200	450	85	80	240
Registration 10	160	70	450	90	350	70

Based on Table 4, it is known that the product value for each indicator is obtained from the multiplication of the weight and rating of each indicator in the NASA-TLX method. The product value for each officer shows variations in each indicator according to the level of workload they feel. In general, the Temporal Demand (TD) indicator has the highest product value for most respondents, with values ranging from 320–450, indicating that time pressure is the most dominant factor influencing the workload of registration officers. In contrast, the Physical Demand (PD) indicator has a relatively lower product value for most respondents, with some respondents even scoring 0, indicating that physical demands are not a major factor in the work of registration officers. This product value data is then summed and divided by the total weight (15) to obtain the final workload score that will be used in determining the workload category of each officer.

Table 5. Calculation of Weighted Workload (WWL) Value

Officer	Mark	TOTAL
	Product Value Results	
Registration 1	1180 ÷ 15	78.67
Registration 2	1325 ÷ 15	88.33
Registration 3	1320 ÷ 15	88.00
Registration 4	1160 ÷ 15	77.33
Registration 5	1195 ÷ 15	79.67
Registration 6	1190 ÷ 15	79.33
Registration 7	1260 ÷ 15	84.00
Registration 8	1330 ÷ 15	88.67
Registration 9	1310 ÷ 15	87.33
Registration 10	1190 ÷ 15	79.33

Based on Table 5, it is known that the results of the Weighted Workload (WWL) calculation using the NASA-TLX method show that the workload score of registration officers ranges from 77.33 to 88.67. This value is obtained from the result of dividing the total product value by the total weight (15) for each respondent. The calculation results show that Registration Officer 8 has the highest workload score, namely 88.67, while Registration Officer 4 has the lowest score, namely 77.33. In general, the WWL scores of all respondents are in the range of 77–89, which indicates that the workload of registration officers at Cililin Regional Hospital tends to be at a moderate to high level. The results of this WWL calculation are then used as a basis for grouping the workload level of each respondent into workload categories in the next analysis stage.

Table 6. Workload Assessment Categories

Officer	Workload Value	Category
Registration 1	78.67	Currently
Registration 2	88.33	Tall
Registration 3	88.00	Tall
Registration 4	77.33	Currently
Registration 5	79.67	Currently
Registration 6	79.33	Currently
Registration 7	84.00	Tall
Registration 8	88.67	Tall
Registration 9	87.33	Tall
Registration 10	79.33	Currently

Based on research conducted by Yustina Ria Wahyu Dwi (2024) in a journal entitled "Comparative Analysis of Medical Records Officers' Workload Using the Nasa-Tlx Method Before and After the Implementation of Electronic Medical Records at Kanjuruhan Regional

Hospital" it is known that before the implementation of EMR all officers were in the high workload category with an average score of 59.96, while after the implementation of EMR the average workload score decreased to 26.36 and was in the moderate category. This decrease indicates that the use of information technology can help increase work efficiency and reduce the workload of officers.

Table 7. Frequency Distribution of Officer Workload

Category	Frequency	Percentage
Low	0	0%
Currently	5	50%
Tall	5	50%

Table 7 shows that of the 10 respondents, no officers had a low workload. Five respondents (50.0%) were in the medium category, while another five (50.0%) were in the high category. These results indicate that the workload of registration officers at Cililin Regional Hospital tends to be moderate to high.

Table 8. Hypothesis Testing with Fisher Exact

Utilization of Mobile JKN	Medium Workload	High Workload	Total	p-value
Not yet optimal	4	0	4	
Optimal	1	5	6	
Total	5	5	10	0.048

Based on the results of the Fisher's Exact Test, a p-value of 0.048 was obtained. This value is smaller than the established significance level ($\alpha = 0.05$), so H_0 is rejected and H_1 is accepted. Thus, it can be concluded that there is a significant relationship between the use of the online registration feature in the Mobile JKN application and the workload of registration officers at Cililin Regional Hospital.

Based on the cross-tabulation results, it was found that respondents who had suboptimal utilization of the Mobile JKN feature were all in the moderate workload category, with 4 respondents (100%). Conversely, in the group of respondents with optimal utilization of the Mobile JKN feature, the majority had a high workload, with 5 respondents (83.3%), while 1 respondent (16.7%) was in the moderate workload category.

Discussion

The Relationship Between the Utilization of Online Registration Features and the Workload of Registration Officers

Based on the results of the bivariate analysis using Fisher's Exact Test, a p-value of 0.048 was obtained. This value is smaller than the established significance level ($\alpha = 0.05$), so H_0 is rejected and H_1 is accepted. Thus, it can be concluded that there is a significant relationship between the use of the online registration feature in the Mobile JKN application and the workload of registration officers at Cililin Regional Hospital.

The cross-tabulation results show that respondents who reported suboptimal utilization of the Mobile JKN feature were all in the moderate workload category, while respondents who reported optimal utilization of the Mobile JKN feature were mostly in the high workload category. This finding suggests a relationship between the two variables, but this relationship does not necessarily indicate that Mobile JKN utilization leads to higher workload.

This situation is understandable because the use of the Mobile JKN application is part of the registration service process. Even though patients have registered online, registration officers still have to complete various service steps, such as verifying patient identity, validating JKN membership, checking the completeness of administrative requirements, printing necessary documents, and coordinating with the designated service unit. Therefore, the use of Mobile JKN does not necessarily immediately reduce the workload of officers if

there are still other service activities that must be carried out manually. The results of this study indicate that the use of Mobile JKN is related to the workload of registration officers. However, workload is not solely influenced by the use of the Mobile JKN application. Other factors, such as the number of patient visits per day, the number of officers on duty, the division of tasks, the duration of service, the competence of officers, and the condition of the hospital information system can also affect the level of workload experienced by registration officers.

Factors Influencing the Utilization of Mobile JKN

Several factors that influence the use of the online registration feature at Cililin Regional Hospital include:

- 1) The level of digital literacy of the community, where the ability to use smartphones and applications is an important factor in the successful implementation of digital services.
- 2) Socialization from hospitals and BPJS Kesehatan, which plays a role in increasing public understanding regarding the benefits and procedures for using the Mobile JKN application.
- 3) Availability of internet network and devices, because limited internet access can hinder the online registration process.
- 4) The app's ease of use includes a simple interface, a clear registration process, and minimal technical issues.

User trust in digital systems, especially regarding the security of personal data and assurance that online registration is processed properly.

CONCLUSION

This study shows that the utilization of the online registration feature in the Mobile JKN application at Cililin Regional Hospital is mostly in the optimal category at 60%, while the workload of registration officers is dominated by the medium and high categories with the same proportion, each at 50%. The results of measurements using the NASA-TLX method indicate that time demands are one of the most dominant components of workload. Bivariate analysis using Fisher's Exact Test obtained a p-value of 0.048, so it can be concluded that there is a significant relationship between the utilization of the online registration feature in the Mobile JKN application and the workload of registration officers at Cililin Regional Hospital. However, this study has limitations because it only involved 10 registration officers at one hospital so that the results of the study cannot be generalized widely. In addition, this study only focused on the analysis of the relationship between Mobile JKN utilization and workload without examining other factors that could potentially influence officer workload.

The results of this study provide practical implications for the management of Cililin Regional Hospital to continue optimizing the use of Mobile JKN through increased outreach to patients, improved service processes, and evaluation of the distribution of staff workloads to make registration services more effective and efficient. These efforts are expected to improve service quality while supporting the implementation of digital-based healthcare services. Future research is recommended to involve a larger number of respondents, cover more than one hospital, and consider other factors that influence workload, such as the number of patient visits, the number of staff, staff competency, service duration, and hospital information systems to obtain a more comprehensive picture of the factors that influence the workload of registration staff.

REFERENCES

- Komalasari, A., et al. (2023). Quantitative descriptive method. (Adapted from the sources used in the manuscript).
- Law of the Republic of Indonesia Number 17 of 2023 concerning Health.
- Law of the Republic of Indonesia Number 24 of 2011 concerning the Social Security Administration Agency.
- Law of the Republic of Indonesia Number 25 of 2009 concerning Public Services.
- Law of the Republic of Indonesia Number 44 of 2009 concerning Hospitals.
- Lutfi, & Irda. (2024). Effectiveness of Mobile JKN on online registration of outpatients at Dustira Hospital.
- Moleong, LJ (2018). Qualitative research methodology. PT Remaja Rosdakarya.
- Neuman, W. L. (2003). Social research methods: Qualitative and quantitative approaches (5th ed.). Allyn & Bacon.
- Nindia, S., & Sali. (2025). Review of the use of Mobile JKN in improving the efficiency of the outpatient registration process at Bandung Kiwari Regional Hospital.
- Notoatmodjo, S. (2018). Health research methodology. Rineka Cipta.
- Purwono, et al. (2021). Quantitative research methods. (Adapted from the sources used in the manuscript).
- Putra. (2015). Quantitative descriptive research method. (Adapted to the sources used in the manuscript).
- Sugiyono. (2013). Quantitative, qualitative, and R&D research methods. Alfabeta.
- Sugiyono. (2017). Quantitative, qualitative, and R&D research methods. Alfabeta.
- Sugiyono. (2018). Quantitative, qualitative, and R&D research methods. Alfabeta.
- Wahyu Dwi, YR (2024). Comparative analysis of medical records officers' workload using the NASA-TLX method before and after the implementation of electronic medical records at Kanjuruhan Regional Hospital.