

Transformation of Communication Media: An Analysis of The Effectiveness of The JKN Mobile App as an External Communication Channel in Reducing Information Asymmetry Among Participants

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Keywords:

JKN Mobile Application;
Information Asymmetry; External
Communication

Abstract

Digital transformation has significantly changed the communication mechanisms of public healthcare services, particularly in improving information accessibility and reducing gaps between service providers and users. The National Health Insurance (JKN) program in Indonesia faces challenges in disseminating information effectively to millions of participants, resulting in information asymmetry regarding participants' rights, obligations, and healthcare procedures. This study aims to analyze the effectiveness of the Mobile JKN application as an external communication channel and evaluate its contribution to reducing information asymmetry between BPJS Kesehatan and JKN participants. This research employed a quantitative approach using a cross-sectional survey design. Data were collected from 290 active JKN participants who had used the Mobile JKN application for at least three months. The research instrument was a structured questionnaire measured using a five-point Likert scale, while data analysis was conducted through descriptive statistics and Structural Equation Modeling (SEM). The results showed that Mobile JKN had high effectiveness as an external communication medium with an overall score of 3.67. The highest dimension was information accessibility (4.12), indicating that the application successfully improved participants' access to healthcare information. Furthermore, the application reduced information asymmetry by 33.9%, particularly in improving participants' understanding of their rights. However, challenges remained, including low digital literacy (43.8%), technical application problems (33.8%), and limited internet access (29.7%). This study concludes that Mobile JKN plays an important role in strengthening digital communication and reducing information disparities in public healthcare services. Continuous system improvement, digital literacy enhancement, and broader socialization strategies are required to optimize its effectiveness.

INTRODUCTION

The era of digitalization has brought a fundamental transformation in the communication ecosystem of public organizations, especially in the context of universal health services. The implementation of information technology as an external communication medium reflects systematic efforts to reduce the information gap between service providers and users (Rifky, Jannatin, Communication, Philosophy, & Paramadina, 2025). The National Health Insurance (JKN) as the largest social security program in Indonesia faces complex challenges related to the dissemination of information to more than 242 million participants

spread throughout the archipelago. Information asymmetry that occurs between the Health Social Security Administration Agency (BPJS) and JKN participants often causes *Misconception* on the rights, obligations, and procedures for the use of health services (Hasnida & Adrian, 2024).

Application *Mobile* JKN is present as a digital communication channel designed to optimize transparency and accessibility of information. App adoption *Mobile* in the public sector shows a positive correlation with increasing people's digital literacy and organizational communication efficiency (Firdaus & Saputra, 2026). Previous research has identified that digital health apps contribute significantly to the increase in *Health Literacy* and user satisfaction. The study of organizational communication in the context of public service emphasizes the importance of responsive two-way communication to build public trust (Scott, 2025). However, there is still a research gap (*Research gap*) related to a comprehensive evaluation of the effectiveness of the application *Mobile* JKN in reducing information asymmetry, especially from the perspective of communication theory and user behavior (Mikraj & Hajri, 2023).

Based on the research gap, this study formulates problems regarding the effectiveness of *the Mobile* JKN application as an external communication channel in conveying information to participants, as well as the extent to which the application is able to reduce information asymmetry between JKN organizers and participants. This study aims to analyze the level of effectiveness of *the Mobile* JKN application as an external communication medium in disseminating information to participants, as well as evaluate its contribution in reducing *information asymmetry* between BPJS Kesehatan and program participants. This research is expected to make a theoretical contribution to the development of digital organizational communication studies and practical for policy makers in optimizing technology-based external communication strategies to improve the quality of public services.

Digital transformation in public services has encouraged various health agencies to adopt application technology *Mobile* as a means of external communication. Research on the effectiveness of the application *Mobile* JKN shows that this technological innovation has the attributes of relative advantage, suitability, and ease of observation that make it an effective communication instrument in health service bureaucratic reform (A. U. Hakim, 2024). The implementation of this application has been proven to contribute positively to improving the quality of service in terms of information quality, service quality, user satisfaction, and net benefits, although it still requires improvements in the aspects of system quality and user intent (Saerang, Lembong, Deity, & Sumual, 2023).

The main obstacles faced in optimizing the use of applications *Mobile* JKN includes limited digital literacy of participants, technical problems in applications, information missynchronization between applications and physical services, and a lack of massive socialization from the organizers (Nashrullah, Rahman, Majid, Hariyati, & Purwoko, 2025). These inhibiting factors result in the suboptimal use of applications as a medium to reduce information asymmetry between BPJS Kesehatan and JKN participants, so a comprehensive strategy is needed that integrates system improvement, user education, and technology infrastructure support (Synesthesia, 2022).

In Indonesia, these challenges can be observed in the implementation of the National Health Insurance (JKN) Program managed by the Health Social Security Administration

Agency (BPJS Kesehatan), which represents one of the largest social security programs in the country. The JKN program has covered more than 242 million participants distributed across various regions of Indonesia, creating significant challenges in disseminating information regarding participants' rights, administrative obligations, healthcare procedures, and membership status. Information asymmetry between BPJS Kesehatan and JKN participants remains a major concern because many individuals still lack sufficient understanding of healthcare service mechanisms. This condition may lead to misconceptions, delays in accessing healthcare services, and increased dependence on conventional face-to-face services.

To address these challenges, BPJS Kesehatan introduced the Mobile JKN application as a digital communication innovation aimed at improving information accessibility and facilitating interaction between healthcare providers and participants. The application provides various features, including membership information, administrative services, healthcare facility information, and digital healthcare access. Previous studies indicate that the Mobile JKN application contributes positively to improving service quality, information quality, user satisfaction, and service benefits. Hakim (2024) stated that Mobile JKN possesses attributes of relative advantage, compatibility, and observability, making it capable of supporting healthcare bureaucratic reform. Furthermore, Angelita et al. (2021) demonstrated that Mobile JKN-based service innovation improves BPJS Kesehatan service effectiveness by enhancing information accessibility and facilitating healthcare services.

Although previous studies have examined the implementation and quality of the Mobile JKN application, most existing research has focused on service quality, user satisfaction, administrative effectiveness, or technology acceptance. Studies that specifically position Mobile JKN as an external organizational communication instrument for reducing information asymmetry remain relatively limited. Research on digital communication transformation in public services needs to extend beyond technological success indicators by examining how digital platforms function as communication channels that connect community information needs with official information provided by service organizations.

This research gap indicates the necessity of a more comprehensive investigation into the effectiveness of Mobile JKN communication in reducing information imbalance between BPJS Kesehatan and JKN participants. Previous studies have identified several barriers that hinder the optimization of Mobile JKN utilization, including low digital literacy among participants, technical problems within the application, limited internet access, and insufficient socialization regarding application benefits. Nashrullah et al. (2025) emphasized that successful digital transformation depends not only on technological availability but also on user readiness, system quality, and organizational communication strategies. Therefore, the existence of a digital application does not automatically eliminate information gaps unless it is supported by effective communication strategies.

The urgency of this research is increasingly significant because the success of national healthcare programs is determined not only by the availability of medical services but also by society's ability to understand and utilize healthcare information. In modern public services, effective communication plays an essential role in strengthening public trust toward government institutions. When JKN participants receive clear, accessible, and relevant information, potential problems such as procedural errors, service dissatisfaction, and excessive reliance on conventional service channels can be minimized. Therefore, evaluating

the role of Mobile JKN as an external communication medium is essential to ensure that digital transformation provides broad social benefits.

The novelty of this study lies in integrating the perspective of digital organizational communication with the concept of information asymmetry to evaluate the role of Mobile JKN. Unlike previous studies that mainly assess service performance or technology adoption, this research positions the application as a strategic communication channel that functions to reduce information disparities between healthcare institutions and society. This approach provides new insights into how digital technology can serve as a public communication mechanism that supports transparency, information accessibility, and improved relationships between healthcare organizations and service users.

Based on these problems and research gaps, this study aims to analyze the effectiveness of the Mobile JKN application as an external communication channel in delivering information to participants and evaluating its contribution to reducing information asymmetry between BPJS Kesehatan and JKN participants. This study also seeks to identify effective aspects of digital communication and explore factors that continue to limit application optimization, including system constraints, digital literacy issues, and technological accessibility barriers.

The findings of this study are expected to provide both theoretical and practical contributions. Theoretically, this research contributes to the development of digital organizational communication studies, particularly regarding the role of information technology in reducing communication disparities within public service sectors. Practically, the findings may serve as recommendations for BPJS Kesehatan and policymakers in developing more inclusive technology-based communication strategies, improving application system quality, strengthening digital education programs, and ensuring that digital transformation in healthcare services creates a more transparent, effective, and user-oriented service ecosystem.

METHOD

This study used a quantitative approach with a survey design *Cross-sectional* to measure the effectiveness of the application *Mobile JKN* in reducing information asymmetry. The research population is active JKN participants who have downloaded and used the application *Mobile JKN* is at least three months. Sampling technique using *purposive sampling* with sample size determined by the Slovin formula at a 95% confidence level. The research instrument was in the form of a structured questionnaire developed based on the dimensions of communication effectiveness and information asymmetry theory, measured using a Likert scale of 1-5. The validity of the instrument is tested through *Expert Judgment* and construct validity test, while reliability is measured using Cronbach's Alpha coefficient. Data analysis was carried out with descriptive statistics to illustrate the effectiveness of communication and the level of information asymmetry, as well as a different paired t-test to compare the level of information asymmetry before and after the use of the Mobile JKN application (Creswell & Creswell, 2023).

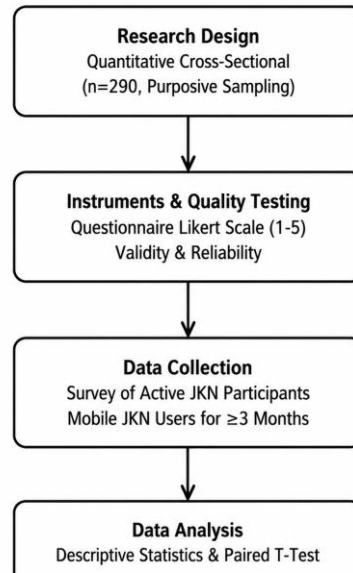


Figure 1. Method framework
Source. Researcher, 2026

RESULTS AND DISCUSSION

This study involved as many as 290 respondents who were active participants of the National Health Insurance Program (JKN) and had used the Mobile JKN application regularly for at least three months. The selection of respondents with these criteria is carried out to ensure that all participants have sufficient experience in utilizing the various features available in the Mobile JKN application, so as to be able to provide an objective assessment regarding the effectiveness of communication delivered through the application. Respondents come from various demographic backgrounds that include differences in age, gender, education level, occupation, and length of JKN membership, so it is expected to provide a more comprehensive picture of user perception of digital services provided by BPJS Kesehatan.

The data collection process was carried out using a structured questionnaire that was compiled based on research indicators that had been developed from various theories and previous research results. The research instrument used a five-point Likert scale, with a value range of 1 indicating the lowest level of disagreement to a value of 5 indicating the highest level of approval of each statement submitted. The use of the Likert scale was chosen because it was able to systematically measure respondents' perceptions, attitudes, and assessments of the variables studied, namely the effectiveness of communication and the level of information asymmetry in the use of the Mobile JKN application.

Before data analysis, all questionnaires that have been collected first go through a process of checking the completeness and consistency of answers to ensure the quality of the data obtained. Data that met the criteria were then processed and analyzed using a descriptive statistical approach to provide an overview of the characteristics of respondents and the distribution of answers in each research indicator. Descriptive analysis was used to determine the tendency of respondents' perception of the effectiveness of communication carried out through the Mobile JKN application and the level of information asymmetry felt by JKN participants.

Furthermore, to test the relationship between variables in more depth, this study uses the Structural Equation Modeling (SEM) method. The SEM method was chosen because it has the ability to analyze complex causal relationships between latent variables and indicator variables simultaneously. In addition, SEM allows researchers to test the validity and reliability of research constructs while evaluating the suitability of the research model with the empirical data obtained. Through this approach, the study can provide a more accurate picture of the effect of communication effectiveness on reducing information asymmetry among JKN participants who use the Mobile JKN application.

The results of the analysis obtained are then presented in three main tables representing the findings of the research. The first table presents the characteristics of the respondents and the results of the descriptive analysis of the research variables. The second table shows the results of the validity and reliability testing of the constructs used in the research model. Meanwhile, the third table presents the results of testing the structural relationships between variables through SEM which are used to answer the research hypothesis. The presentation of the results in the form of a table is expected to make it easier for readers to understand the research findings and provide a clear picture of the effectiveness of communication through the Mobile JKN application in reducing information asymmetry in JKN participants.

Table 1. The Level of Effectiveness of the JKN Mobile Application as an External Communication Channel

Dimension of Effectiveness	Red	Categories
Information Accessibility	4.12	Height
Timeliness of Delivery	3.87	Height
Clarity of Information	3.65	Medium
Ease of Use	3.42	Medium
System Responsiveness	3.28	Medium
Overall Average	3.67	Height

Source : Data processed by researchers, 2026

Table 1 Based on the results of the descriptive analysis of the communication effectiveness variables in the Mobile JKN application, an overall average score of 3.67 was obtained which was included in the high category. These findings show that in general, respondents consider that the communication conveyed through the Mobile JKN application has run quite effectively in supporting the information needs of JKN participants. The average value in the high category indicates that most respondents feel that the Mobile JKN application is able to be an adequate communication medium between BPJS Kesehatan and participants. This condition shows that the digital transformation carried out through the development of the Mobile JKN application has had a positive impact on the delivery of health service information to the public. However, there are still some dimensions that receive lower scores than others, thus showing that there is room for improvement that can be done to improve the quality of communication more optimally.

The information accessibility dimension obtained the highest average score of 4.12 and was included in the high category. These results show that respondents feel that the information available in the Mobile JKN application is easy to find and can be accessed at any time according to their needs. The high assessment of this dimension indicates that the application

has succeeded in providing an information channel that is easily accessible to participants without having to come directly to the BPJS Kesehatan office. In addition, the timeliness dimension of information delivery also obtained a relatively high value, which was 3.87. The findings show that most respondents rated the information provided through the app quite quickly and available at the time needed. Furthermore, the dimension of information clarity obtained an average value of 3.65 which was in the medium category. Although it still shows a fairly good assessment, these results indicate that some respondents still have difficulty understanding certain information conveyed through the application. This can be due to the use of technical terms, the presentation of information that is too concise, or the lack of supporting explanations that help users understand the information more deeply.

Meanwhile, the ease of use dimension obtained an average score of 3.42 and the system responsiveness dimension obtained an average value of 3.28, both of which are included in the medium category. The value of the ease of use dimension shows that even though the Mobile JKN application has been designed to make it easier for users to access various services, there are still a number of respondents who feel that the process of using the application is not completely simple and intuitive. Some users may still face problems with menu navigation, searching for certain features, or completing services digitally. On the other hand, system responsiveness is the dimension with the lowest average value compared to other dimensions. These results indicate that there is still a perception from respondents about the slow response of the system under certain conditions, such as longer access times, technical problems when using certain features, or delays in updating information. Therefore, even though the effectiveness of Mobile JKN communication as a whole has been in the high category, improving the quality of the system, especially in terms of ease of use and responsiveness, needs to be a major concern. Improvements in these two dimensions have the potential to improve the user experience, strengthen the effectiveness of digital communication, and encourage more optimal use of the Mobile JKN application by JKN participants.

Table 2. The Level of Information Asymmetry between BPJS Kesehatan and JKN Participants

Information Asymmetry Indicator	Before Mobile JKN (%)	After Mobile JKN (%)	Difference (%)
Lack of understanding of participants' rights	68.3	32.4	-35.9
Lack of understanding of the Participant's Obligations	61.7	28.6	-33.1
Unclear Service Procedures	72.1	38.2	-33.9
Ignorance of the Service Schedule	55.9	22.1	-33.8
Ignorance of Membership Status	48.6	15.5	-33.1
Average	61.3	27.4	-33.9

Source : Data processed by researchers, 2026

Based on Table 2, there was a significant decrease in the level of information asymmetry by 33.9% after the implementation of *the Mobile JKN* application. The largest decrease occurred in the indicator of lack of understanding of participants' rights (35.9%), which showed that the application had succeeded in increasing the transparency of information regarding the rights of JKN participants. However, there were still 27.4% of participants who experienced information asymmetry, indicating the need for further optimization.

Table 3. Obstacles to Using the JKN Mobile Application

Types of Barriers	Frequency	Percentage (%)
Low Digital Literacy	127	43.8
Application Technical Glitches	98	33.8
Limitations of Internet Access	86	29.7
Lack of Socialization	74	25.5
Difference in Information with Physical Services	52	17.9
Difficulty Navigation Feature	48	16.6

Source : Data processed by researchers, 2026

Table 3 identifies that low digital literacy is the main obstacle with a percentage of 43.8%, followed by technical problems with applications (33.8%) and limited internet access (29.7%). These findings confirm that human resource factors and technological infrastructure are significant obstacles in optimizing the use of *the Mobile JKN* application as an external communication medium.

The Effectiveness of the JKN Mobile Application as an External Communication Channel

The results of the study show that the application *Mobile JKN* has high effectiveness as an external communication channel with an average value of 3.67. These findings are in line with research that states that the application *Mobile JKN* has been running effectively in terms of information quality, service quality, user satisfaction, and net benefits (Promise, 2022). The dimension of information accessibility obtained the highest rating (4.12), confirming that digital transformation through applications *Mobile* allows participants to access services anywhere and anytime without space and time limitations (Angelita, Lukman, Tahir, Krech, & Health, 2021).

The advantage of this application lies in its ability to cut the manual registration flow and provide certainty of doctor quotas, so that it is considered fast and practical by users (Hakim & Setiatin, 2025). Research at the Jatiasih Health Center in Bekasi City also proves that the effectiveness of services *Mobile JKN* reached 82.35%, indicating that this application contributes positively to improving the quality of public services (Rain, 2023). Innovation attributes that the app has *Mobile JKN*, including relative advantages, suitability, and ease of observability, makes it an effective communication instrument in health service bureaucratic reform (Adya, Putri, Adi, Wijaya, & Wayan, 2024).

However, the responsiveness of the system obtained the lowest score (3.28), indicating that there are still technical problems that hinder the optimization of communication functions. Technical glitches such as frequent applications *Error* and the limitation of integration with the Participant Eligibility Letter (SEP) system is an obstacle that reduces user trust (Nita & Mukhsin, 2026). These findings are reinforced by research that identifies that some features of the app are not fully optimized and still require participants to come directly to the branch office. The missynchronization of information between the application and the physical service also creates confusion among participants.

Mobile JKN's Contribution in Reducing Information Asymmetry

This study proves that *the Mobile JKN* application contributes significantly to reducing information asymmetry with an average decrease of 33.9%. The most substantial decrease

occurred in the aspect of understanding participants' rights (35.9%), indicating that the application succeeded in increasing transparency and accessibility of information to JKN participants. The transformation of communication mediums from conventional to digital allows for faster, more accurate, and equitable dissemination of information to all participants regardless of geographical location.

However, there are still 27.4% of participants who experience information gaps, especially related to low digital literacy. The research identified that the majority of respondents (44%) had less knowledge of the application *Mobile JKN*, with the category of early adults and high school education level, dominated the group with low understanding. This condition is exacerbated by the implementation that has not been optimal in several regions, where BPJS Kesehatan has not determined special, massive, and focused human resources in socializing the application to the community (Masudi, Efkelin, & Lamba, 2025).

Geographical factors also contribute to the persistence of information asymmetry, especially for participants in rural areas with limited internet and signal access. The resistance of some medical personnel and the lack of education from BPJS officers worsened the situation, where participants did not receive adequate guidance in optimizing the use of the application. This resulted in many participants being reluctant to use the application and preferring to come directly to the service office (N. S. Hakim & Setiatin, 2025).

To overcome these obstacles, a comprehensive strategy is needed that includes improving the quality of the application system, in-depth education to participants about the benefits and added value of the application, and continuous monitoring of the *Error* application. Better system integration between applications and physical services, increased hospital internal support, and strengthening of technology infrastructure are key to the success of the application *Mobile JKN* in eliminating information asymmetry as a whole (Safarah, 2017).

CONCLUSION

This study concluded that *the Mobile JKN* application shows high effectiveness as an external communication channel with an average score of 3.67, where the information accessibility dimension received the highest rating (4.12). The transformation of communication mediums from conventional to digital has been proven to contribute significantly to reducing information asymmetry with an average decrease of 33.9%, especially in the aspect of understanding participants' rights (35.9%). However, there are still 27.4% of participants who experience information gaps due to low digital literacy (43.8%), application technical problems (33.8%), and limited internet access (29.7%). The theoretical implications of this research enrich the study of digital organizational communication in the context of public services, especially regarding the role of technology in eliminating information asymmetry. In practical terms, these findings indicate the need for a comprehensive strategy that integrates system quality improvement, massive education to participants, and strengthening technology infrastructure to optimize the function of *the Mobile JKN* application as an effective external communication medium in the universal health care ecosystem in Indonesia.

REFERENCES

- Adya, M., Putri, F., Adi, K., Wijaya, S., & Wayan, N. (2024). The Effectiveness of the National Health Insurance (JKN) Mobile Application in Improving Service Quality (Case Study of the Office of the Social Security Organizing Agency Denpasar Branch). 1(2), 42–54.
- Angelita, M., Lukman, S., Tahir, I., Krech, D., & Health, J. (2021). Innovation and Service Effectiveness through Mobile Jkn at Bpjs Kesehatan in South Jakarta. 9(2), 292–305.
- Creswell, J. W., & Creswell, J. D. (2023). *Research design: Qualitative, quantitative, and mixed methods approaches* (6th ed.). SAGE Publications.
- Firdaus, N., & Saputra, H. E. (2026). The Effectiveness of the Mobile JKN Application (National Health Insurance) at the Office of the Health Social Security Organizing Agency Bengkulu Branch. 5(1), 653–660.
- Hakim, A. U. (2024). Analysis of the effectiveness of the use of the jkn mobile application as part of public services at BPJS Kesehatan in Bekasi City. 5(2), 1087–1095.
- Hakim, N. S., & Setiatin, S. (2025). A Review of the Use of Mobile Jkn in Improving the Efficiency of the Outpatient Registration Process at Bandung Kiwari Hospital. 6, 14007–14015.
- Hasnida, S. S., & Adrian, R. (2024). Transformation of Education in the Digital Era. 2(1).
- Kaunang, D. R. (2025). Transformation of Employee Communication Patterns in Public Health Services in the Digital Era: A Sociocultural Study. 15(Salbiyah 2024), 1096–1111.
- Masudi, S. N. A., Efkelin, R., & Lamba, H. (2025). Overview of the Perception of Social Security Administration Agency (BPJS) Participants on the Effectiveness and Improvement of Mobile JKN Services at the BPJS Kesehatan North Jakarta Branch Office. (September), 233–246.
- Maulana, I. (2023). Implementation of the Mobile Jkn Application of Bpjs Kesehatan Sukabumi Branch 2018 – 2021. 9, 44–52.
- Mikraj, A. L., & Hajri, M. F. (2023). Islamic Education in the Digital Era: Challenges and Opportunities in the 21st Century. 4(1), 33–41.
- Nashrullah, M., Rahman, S., Majid, A., Hariyati, N., & Purwoko, B. (2025). Implementation of Digital Transformation at SD Antawirya Islamic Javanese School through Transformational Leadership. *Indonesian Journal of Education and Learning (JPPI)*, 5(1), 206–217. <https://doi.org/10.53299/jppi.v5i1.917>
- Nita, & Mukhsin, A. (2026). An overview of the level of knowledge of the people of Selanggeng Village towards the mobile JKN application. 129, 1522–1530.
- Prasetyo, R. A. (2022). The effectiveness of using the Jkn mobile application in reducing queues. 7(2).
- Rifky, P. M., Jannatin, I. S., Communication, M. I., Philosophy, F., & Paramadina, U. (2025). Literature Review on the Effect of Satusehat Mobile and Mobile JKN Health Applications on Healthy Lifestyle Awareness in Indonesia (2019-2023). 5(1), 327–352.
- Saerang, H. M., Lembong, J. M., Deity, S., & Sumual, M. (2023). Strategies for Developing Teacher Professionalism in the Digital Era: Challenges and Opportunities. 9(1), 65–75.
- Safarah, A. (2017). The Effectiveness of the National Health Insurance (JKN) Mobile Service at the Pacet Health Center, Mojokerto Regency. 2097–2106.
- Synesthesia, J. (2022). Innovative Learning Methods in the Era of Digitalization Introduction. 12(1), 136–151.