

Bridging the Digital Gap: Evaluating Mobile JKN E-Service Quality at Cisaga Health Center

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Abstract

The digitalization of public healthcare services in Indonesia, marked by the introduction of the Mobile JKN application, aims to streamline administrative processes and reduce facility congestion. However, a significant "utilization gap" remains prevalent in rural health centers, where technological availability does not always translate into adoption. This study aims to evaluate the digital service quality of the Mobile JKN online queuing feature at the Cisaga Public Health Center (Puskesmas Cisaga) through the lens of the E-Service Quality (E-SERVQUAL) framework. A qualitative descriptive approach was employed, utilizing in-depth interviews, field observations, and documentation. Data were gathered from a diverse group of informants, including BPJS administrative staff and both active and non-active JKN participants, to capture a 360-degree perspective on service delivery. The findings reveal a stark contrast between technological potential and practical reality; despite being a pioneer of digital transformation in Ciamis Regency, nearly 90% of participants still rely on manual queuing systems. Evaluated against the seven E-SERVQUAL dimensions, "Efficiency" emerged as the most significant potential strength for tech-savvy users, whereas "Responsiveness" and "System Availability" were found to be the weakest due to technical disruptions and the absence of integrated on-site support. The study identifies that low digital literacy, inadequate socialization by BPJS Kesehatan, and infrastructural disparities are the primary inhibitors of digital adoption. This study concludes that for digital health transformation to be effective at the grassroots level, it must be supported by a "hybrid" implementation strategy that aligns digital features with local user readiness and technical reliability.

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1. Introduction

The Indonesian government shoulders a key responsibility in setting up a holistic health insurance scheme as a means of protecting their citizenry. The above is achieved through the implementation of the National Health Insurance (JKN) Program that is coordinated by the Social Security Agency for Health (BPJS Kesehatan). The institution was established following the provisions in Laws Nos. 40 and 24 of 2004 and 2011, respectively, and acts as a public legal entity tasked with ensuring efficient and fair management of the JKN program (Arntanti, 2023; Juniati, 2022). Currently, the program has gained a great deal of success as seen in its large membership base which consists of around 86.87% of Indonesians, translating into 237 million people. To handle a huge number of members and work towards realizing universal health coverage, the adoption of digital technology is increasingly becoming crucial. Digital transformation in the above field, commonly known as e-government, changes everything about service provision in terms of efficiency and effectiveness, as well as increasing transparency and participation from

citizens (Dewi et al., 2025; Gantika, 2025; Syafarudin & Haris, 2025). This process is enabled through institutions such as Presidential Instruction No. 3 of 2003, among others, that provide the basis for e-government development in Indonesia.

Service quality underlies the provision of community health services and becomes the key driver behind patients' levels of satisfaction and confidence (Amelinda et al., 2025; Azis et al., 2025). In the contemporary world, medical institutions are being increasingly assessed in terms of both tangible results and so-called non-medical factors, including responsiveness, empathy, and effectiveness of administrative services. These factors provide the basis of the patients' experience and ensure that everyone feels valued and supported while visiting the healthcare institution. A focus on patients' needs means that there should be constant evaluation of service efficiency in light of public expectations. By managing to combine actual service with expected quality, the healthcare system creates an environment of trust and loyalty on the part of its participants (Agustina et al., 2023; Taufiq, 2023). In the case of massive social protection programs, the quality of service is crucial for the effectiveness of the entire program in place.

Table 1. Number of JKN Participants Nationally and in Ciamis Regency

Region	Number of JKN Participants	Percentage Participation (%)	Total Population
Indonesia	280.073.651 People	98,46%	284.440.000 People
Ciamis Regency	1.231.015 People	95%	1.295.800 People

Source: CNBC Indonesia and the Regional Secretary of Ciamis 2024.

Based on the data in Table 1, the National Health Insurance (JKN) program's coverage rate as of May 31, 2025, had reached 280,073,651 people, or 98.46% of Indonesia's total population. Meanwhile, in Ciamis Regency, the number of JKN participants was recorded at 1,231,015, or approximately 95% of the region's total population. This high participation rate demonstrates the government's success in quantitatively expanding access to the JKN program. However, various issues related to service quality remain challenges that require further attention. Initially, JKN services were delivered conventionally through the establishment of service offices in various regions. However, this system faced several administrative obstacles, such as slow data verification and healthcare claims settlement. Data from the Ombudsman of the Republic of Indonesia shows that public complaints regarding health services, including BPJS Kesehatan services, reached 216 reports in 2023 and decreased to 164 reports in 2024. Most of these reports were related to delays in service administration, inconsistencies in participant data, and slow health service claims processing (Ombudsman RI, 2023; Ombudsman RI, 2024).

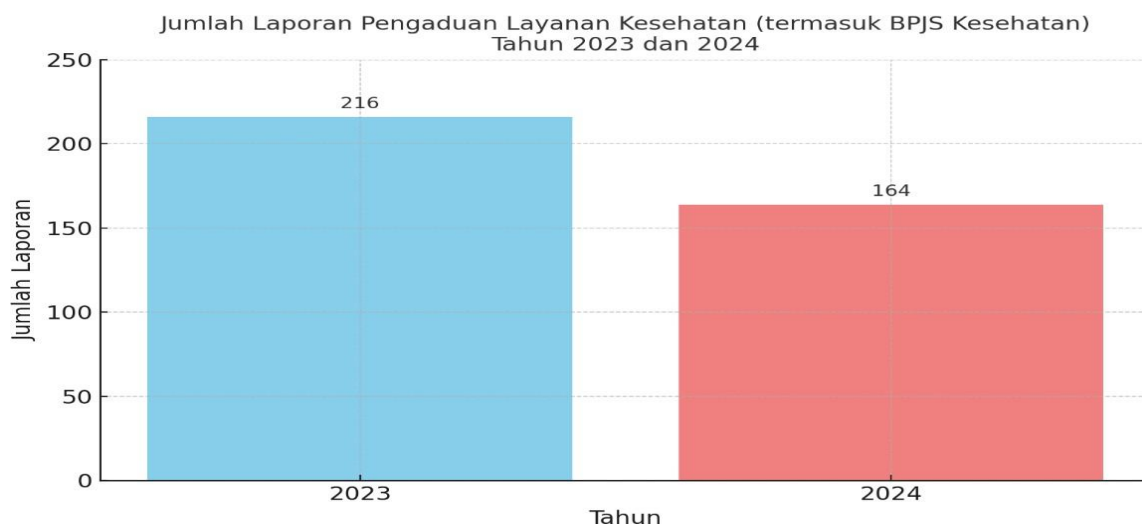


Figure 1. Number of BPJS Kesehatan Administrative Complaints in 2023-2024 and Service-Related Complaints in 2023-2024

Source: Indonesian Ombudsman Reports in 2023 and 2024, processed by the author (2025)

To address these various administrative issues, BPJS Kesehatan (Social Security Agency for Health) has begun implementing digital transformation in its service system through the development of the Mobile JKN application. This application makes it easier for participants to independently access various services, such as checking bills, using digital cards, changing primary health care facilities (FKTP), and updating participant data. Among the various features available, the online queuing service is a prominent feature designed to improve the effectiveness and efficiency of healthcare services. Through this feature, participants can register for healthcare services without having to arrive at the facility in advance. The Mobile JKN application is available on Android and iOS platforms and has been downloaded more than 50 million times (Asikin & Alam, 2024; Bahri et al., 2022). However, according to data from BPJS Teaching Materials in 2023, the number of active Mobile JKN users was recorded at only 16,034 out of all BPJS Kesehatan service participants.

The great number of participants in the JKN scheme does not coincide entirely with the effective use of digital services, especially the Mobile JKN app. It is possible to say that there is a mismatch between the amount of participants in JKN schemes and the use of the digital services of BPJS Kesehatan, including mobile application. It should be noted that participants of JKN and users of JKN applications have their own special meaning. Being a participant of JKN means to have the registered status of being included in JKN, either individually, as an employee, or as a beneficiary of the premium assistance scheme (PBI). The latter term is used for those who actively use the services of the JKN mobile application.

The low adoption rate of the Mobile JKN application among the public indicates that the implementation of digital services still faces various obstacles. Digital literacy significantly influences the public's ability to adopt and utilize electronic public services effectively (Supriyanto et al., 2021). One key factor is the public's low digital literacy, which causes some users to experience difficulties accessing, downloading, and using available features, including online queuing services (Amelinda et al., 2024; Ariyanto et al., 2023). Initial observations indicate that the majority of patients at the Cisaga Public health center are aged 45 and over, who generally have limited understanding of how to use digital technology. Furthermore, limited internet infrastructure also hinders the smooth operation of digital services. Based on network mapping in Cisaga District, several villages still experience unstable internet signal quality, especially during certain hours (Ciamis Regency Communication and Information Office, 2023).

In addition to that, other individuals find it convenient to seek manual services at health facilities since they find them easy and familiar to them. The few people who use the Mobile JKN application in the neighboring environment affects the public view on the efficacy of the online queuing system. This is as a result of the few success stories which have been observed, thus causing the public to doubt the effectiveness of this digital process, hence opting for the traditional queuing service that they know. This shows the lack of trust by the general public towards digital services. This lack of confidence among members of the public is due to the lack of technological awareness in them and slow adoption of the applications (Carter & Bélanger, 2005; Nurlaila Nurlaila et al., 2024).

The example of this digital transformation includes the development of the Mobile JKN application, an advancement meant to offer convenient administration services since users can now avail themselves of them at any time and anywhere they want to. This mobile application makes things easier in terms of difficulties associated with traditional ways of offering services, which include long lines and bureaucratization, through its functionalities of digital registration, health screening services, and information accessibility (Asikin & Alam, 2024; Nurhayati et al., 2025; Salsabila et al., 2025; Taufiq & Andikaputra, 2023). It is suggested that "e-service quality" and "ease of use" are important variables determining customer satisfaction, and quality services that meet users' expectations greatly improve their level of trust and organization performance (Vatolkina et al., 2020; Wulandari et al., 2025). In spite of the positive developments, there are various challenges associated with the implementation of digital healthcare services, which include the difference in digital infrastructures between regions and the varying degrees of digital competence of users. Studies on mobile applications and innovations in general have identified important criteria, which include reliability, responsibility, and assurance that define users'

satisfaction with the service. Even though digital systems have positively impacted service quality, improvements of their efficiency and security issues should be ensured to guarantee equitable healthcare protection in Indonesia.

The Cisaga Public health center, as one of the first-level health facilities (FKTP) in Ciamis Regency, also implements the JKN program, with 20,384 participants, both Premium Assistance Recipients (PBI) and non-PBI. This high number of participants makes the administrative burden of services quite complex. According to information from health workers at the Cisaga Public health center, although the JKN membership rate is relatively high, utilization of digital services, particularly the online queue feature on the Mobile JKN application, remains very low, with only around 30 active users.

In the context of digital health services, evaluating the service quality of the Mobile JKN application is crucial. These various issues can be analyzed using the E-Service Quality (E-SERVQUAL) approach developed by Parasuraman et al. (1985, 1991). The E-SERVQUAL model is an extension of the SERVQUAL model focused on assessing the quality of electronic-based services, including public services in the health sector. The quality of electronic health services affects user satisfaction, trust, and intention to continue using digital health applications (Zeithaml et al., 2002). The E-SERVQUAL approach is used to assess the quality of digital services from the user's perspective, particularly the online queue feature. This model encompasses several assessment dimensions, such as efficiency, which relates to the ease and speed of service access; system availability, which assesses the technical reliability of the system; and fulfillment, which measures the service's ability to meet customer needs.

2. Methods

This research methodology constitutes the framework through which the current scientific study will be conducted. It details the systematic process used and the theory used in order to accomplish the objectives set out in the research proposal. In the current research study, a qualitative research design coupled with a descriptive perspective is used in order to conduct an in-depth examination of the phenomena under consideration regarding the digitalization of health service delivery. The use of qualitative research design is unlike quantitative research design since the former focuses on the depth of human experience as well as complex processes rather than the broadness of data provided by the latter. Qualitative descriptive research employs an inductive logical process whereby data collection begins at the specific end before moving into generalization and conceptualization of the findings (Miles et al., 2014; Sugiyono, 2019). The main tool in this kind of research method is the researcher themselves.

The empirical setting of the study was established at the Cisaga Public health center (UPTD Puskesmas Cisaga), which can be found in the Ciamis Regency. The choice of this particular area is highly purposeful since Puskesmas Cisaga has been recognized as an innovator in terms of the application of digital technology for health care management, becoming a key "living laboratory" where a shift from traditional to digitalized health administration may be seen. At the same time, the organization, being a pioneer in the domain, still experiences a serious "utilization gap" – that is, a gap between the use of innovative technologies and their practical utilization by the population, caused by such social-demographic factors as age-related restrictions in technology usage, different levels of digital competence, and economic limitations when purchasing mobile devices. Thus, this empirical setting offers an interesting environment for investigating the effectiveness of JKN digital services, in particular online queuing.

To ensure the reliability and depth of the findings, the study employed a purposive sampling technique for selecting research informants. This non-probability sampling method involves the deliberate selection of participants based on their specific expertise, experience, and proximity to the research object. By focusing on "information-rich" cases, the researcher can ensure that the collected data is both relevant and accurate. The informants were categorized into several key groups to provide a 360-degree perspective on service quality. This included the Social Security Agency (BPJS) Person-in-Charge (PIC) at the health center and administrative counter staff, both of whom possess technical and operational knowledge regarding the digital shift. Furthermore, the study sought the perspectives of JKN participants themselves, divided into two distinct strata: active users who regularly engage with the Mobile JKN application, and non-users who continue

to rely on conventional, face-to-face administrative processes. By including healthcare facility staff directly involved in the BPJS administrative workflow, the research was able to capture a comprehensive picture of the operational challenges and systemic obstacles encountered in the field. This diversity in the informant pool—spanning various ages, professional roles, and levels of technological proficiency—allowed for a robust evaluation of the online queuing feature and provided a broad lens through which to identify the friction points of digital implementation.

The data corpus for this research was derived from both primary and secondary sources. Primary data, constituting the core of the evidence, were gathered through direct field observations and rigorous in-depth interviews. These interviews were designed to be semi-structured, allowing for the flexibility to pursue emerging themes while remaining anchored to the core research questions. Through these interactions, the researcher sought to understand the "why" and "how" of digital service adoption at Cisaga Public health center. Complementing these primary insights, secondary data were retrieved from official documentation, including digital archives on the JKN website, internal regulatory documents from the health center, and service performance reports. This dual-source approach ensures that the subjective experiences of participants are balanced against the objective administrative realities of the institution. The data analysis process was conducted using an interactive model, as proposed by Miles et al., (2014) . This model involves a cyclical and continuous process consisting of three integrated stages: data reduction, data presentation, and conclusion drawing or verification. During data reduction, the vast amount of raw data from interviews and field notes was sharpened, focused, and organized by selecting information strictly relevant to the research goals. Subsequently, the data were presented in a descriptive narrative format. This structured presentation is vital for identifying patterns, relationships, and anomalies within the findings. Finally, conclusions were drawn incrementally; initial insights were constantly verified and cross-referenced with the evolving data set to ensure that the final conclusions were grounded in empirical evidence. To maintain the highest standards of academic integrity and data validity, this study utilized source triangulation. This involved comparing and verifying the consistency of information obtained at different times and through different means—such as comparing an informant's interview statement with actual behavioral observations and supporting administrative documents. This analytical rigor is underpinned by a theoretical framework of digital service quality, which emphasizes that technology-based healthcare must be evaluated through its reliability, ease of use, and ability to meet the practical needs of a diverse public. Through this systematic methodology, the study aims to provide a definitive account of JKN digital implementation at Cisaga Public health center, ultimately offering a set of best practices and strategic references to enhance the sustainability of national public healthcare services.

3. Results and Discussion

Before discussing each dimension of E-SERVQUAL, it is important to understand that the quality of digital healthcare services can be assessed through several indicators that reflect users' experiences in accessing and utilizing electronic-based services. In this study, the E-SERVQUAL approach was used to evaluate the quality of the Mobile JKN online queue service at the Cisaga Public health center from the users' perspective. The analysis focuses on several dimensions, namely efficiency, system availability, fulfillment, privacy, responsiveness, compensation, and contact, to identify the strengths and challenges of implementing digital healthcare services. Through these dimensions, the study aims to provide a comprehensive understanding of how far the Mobile JKN application has succeeded in supporting effective, accessible, and user-oriented healthcare services for JKN participants.

3.1. Efficiency Dimension

The efficiency dimension in E-SERVQUAL theory relates to the ease and speed with which users can access and use digital services. Based on research at the Cisaga Public health center, the online queue feature in the Mobile JKN application was deemed to have made it easier for some users to register for healthcare services without having to arrive early at the facility. This feature helps people save time and reduce manual queues at the registration counter. For users who are

familiar with digital technology, the Mobile JKN application is considered quite practical because various administrative services can be accessed independently via mobile phone.

However, the efficiency aspect of the Mobile JKN digital service is still not optimal. Observations show that a large proportion of the population, particularly those aged 45 and older, experience difficulties operating the application. Users often encounter problems logging in, registering for online queues, and understanding the flow of available features. This situation leads some people to still prefer to register in person at the Cisaga Public health center rather than using digital services. This indicates that the ease of use of the application has not been equally felt by all levels of society.

Table 2. Number of Active and Manual JKN Participants at Cisaga Public health center

No	Category	Total
1	JKN Participant	20.384
2	Active Mobile JKN Users	30
3	Manual Service Users	20354 (90%)

Source: Processed by the Researcher (2025).

The table shows that the number of JKN participants at the Cisaga Public health center reached 20,384 people. However, only 30 participants actively used the Mobile JKN application, while the majority of participants still relied on manual services. This indicates that the utilization of digital health services, particularly the Mobile JKN online queue feature, remains very low compared to the total number of JKN participants. The data also reflects that most users still prefer conventional service methods over digital-based healthcare services.

Users who are already familiar with the app do indeed experience efficiency. They don't need to arrive early or wait too long because the system distributes queues digitally. However, utilization of this feature is not yet widespread. Based on observations over three consecutive days no patients were found using the online queue, despite the availability of infrastructure and visual education, such as posters and guide monitors. This indicates low app penetration, likely due to limited devices and digital literacy.

In addition to digital literacy, the efficiency of application use is also affected by limited internet access in some areas of the Cisaga District. Unstable internet connections cause application access to be slow and sometimes even fail during certain hours. This situation has resulted in low public interest in utilizing the online queuing feature, as it is perceived as less practical than conventional services. Consequently, the primary goal of developing the Mobile JKN application, which is to create faster and more efficient services, has not been fully achieved at the Cisaga Public health center.

Based on these findings, it can be concluded that the efficiency dimension of the Mobile JKN online queuing service at the Cisaga Public health center still faces various obstacles in its implementation. Although the application has provided easy access to digital healthcare services, its effectiveness is still influenced by the community's digital literacy level, user age, and the quality of internet infrastructure. Therefore, efforts are needed to increase public education on application use and strengthen internet network infrastructure so that the Mobile JKN digital service can be utilized more optimally and efficiently by all JKN participants.

3.2. System Availability Dimension

The system availability dimension in E-SERVQUAL theory relates to the ability of a digital service system to function optimally, stably, and be accessible to users whenever needed. Based on research at the Cisaga Public health center, the online queue feature in the Mobile JKN application has essentially supported the digital healthcare process. This system makes it easier for JKN participants to register for services without having to visit the health facility in person to obtain a queue number. The existence of this feature demonstrates BPJS Kesehatan's efforts to improve service quality through the use of digital technology in the healthcare sector.

However, the implementation of the system availability in the Mobile JKN application still faces several technical challenges. Based on observations and user interviews, the application sometimes experiences disruptions such as slow loading times, login failures, and errors during

the online queue registration process (Amelinda et al., 2025; Ariyanto et al., 2023). These disruptions generally occur during certain service hours when many users are accessing the application simultaneously. This condition makes it difficult for users to optimally utilize the service and undermines public trust in the reliability of the available digital system.

In addition to system disruptions, service availability is also affected by the condition of the internet network infrastructure in the Cisaga District. Several villages still experience unstable network quality, hindering user access to the Mobile JKN application. Internet network instability causes data synchronization to be slow and sometimes the system fails to process. This situation has resulted in low utilization of the online queue feature, as the public perceives digital services as not yet fully reliable in meeting their healthcare needs quickly and accurately.

Although the Mobile JKN application system is technically available and has been declared functional by service providers, practical system availability remains uneven. Suboptimal internet network access in patients' residential areas is a major obstacle, directly impacting user trust and experience. Therefore, improving network infrastructure and providing more equitable digital access is crucial to ensure the system's optimal utilization by all levels of society.

Based on the research results, it can be concluded that the system availability dimension of the Mobile JKN application at the Cisaga Public health center is not yet optimal. Although the system is available and usable by the public, various technical obstacles still exist that impact service stability and reliability. Therefore, increasing the application's system capacity, improving server quality, and providing more adequate internet infrastructure support is necessary to ensure the Mobile JKN online queue service operates more stably and responsively, providing a better digital service experience for the public.

3.3. Fulfilment Dimension

The fulfillment dimension in E-SERVQUAL theory relates to the ability of digital services to meet user needs and expectations according to their promised functions. Based on research at the Cisaga Public health center, the online queue feature in the Mobile JKN application has essentially benefited JKN participants in obtaining healthcare services more conveniently. Users who successfully utilize this feature can register for healthcare services without having to arrive at the public health center in advance. Furthermore, information regarding service schedules and queue numbers can be accessed directly through the application, helping users schedule their healthcare visits.

However, the level of user needs met through the online queue feature is still suboptimal. This is evident in the low number of people utilizing digital services compared to the number of JKN participants registered at the Cisaga Public health center. Some people believe that the Mobile JKN application has not fully met their expectations of providing easy and practical services. Some users still experience difficulties during the queue registration process, such as system failures in processing data or inconsistencies between the service schedules available in the application and the actual service conditions.

This fulfillment issue is also influenced by the lack of alignment of manual service flows at public health centers with digital mechanisms. Although the online queuing feature is available, there is no dedicated queue line or clear separation process between online and offline patients, resulting in overlap and confusion. This situation aligns with the findings of Bahri et al. (2022), who stated that the fulfillment dimension is a major cause of dissatisfaction with digital service users, as it is directly related to the final outcome of the service received. When the system fails to deliver on service promises, such as convenience, queue priority, and data accuracy, trust in the digital innovation is shaken. This mismatch between the system and user expectations ultimately hinders the digital transformation process in public services.

Thus, the fulfillment issue in the implementation of the Mobile JKN online queue at the Cisaga Public health center is not only technical but also structural and managerial. Coordination between the application system and the direct service process needs to be strengthened. Furthermore, educating the public about the procedures and advantages of digital queuing is crucial to realistically shape and meet expectations. Without this, application usage will remain low, and service digitalization will become a mere formality without any real impact on the ground.

Furthermore, some people still prefer using the manual service system because they perceive it as more reliable and easier to understand than digital services. This situation indicates that the online queue feature has not fully assured users that the promised service will run as expected. Low levels of application usage among the public also reinforce the perception that the online queue service is not fully effective in supporting daily healthcare needs. Consequently, public satisfaction with the fulfillment of digital services remains limited.

Based on the research results, it can be concluded that the fulfillment dimension of the Mobile JKN application at the Cisaga Public health center still needs improvement. Although the application provides fairly comprehensive digital service features, service delivery has not been able to consistently meet user expectations. Therefore, improvements in the quality of the service system, adjustments to more accurate service information, and optimization of the online queue feature's functionality are needed so that the digital services provided can truly meet the needs and expectations of the public effectively.

3.4. Privacy Dimension

The privacy dimension in E-SERVQUAL theory relates to the ability of digital services to safeguard users' personal data and provide a sense of security during the service process. Based on research at the Cisaga Public health center, the Mobile JKN application provides a login system using participant ID and password to protect user data. Furthermore, participant personal information, such as JKN card numbers, membership data, and service history, can only be accessed by the account holder. This demonstrates that BPJS Kesehatan has made efforts to implement user data protection when using the Mobile JKN digital service. Field officers have implemented the principle of data minimization, namely only accessing necessary data and handing over full control of the application account to the patient. However, public perception of system security is determined not only by technical implementation in the field, but also by the reputation of the managing institution and public communication. The lack of public awareness regarding the data security system in the Mobile JKN application can create a gap that reduces the public's sense of security, especially for new or inexperienced users.

This finding aligns with research by Asikin & Alam (2024), which states that the privacy dimension significantly influences user intention to use digital health applications. When users feel uncertain about the security of their personal data, the tendency to avoid using the application increases. This is particularly relevant among new users, the elderly, and those who frequently receive negative information regarding the digitalization of public services.

Therefore, it can be concluded that although some users have developed trust in the Mobile JKN system, challenges related to the privacy dimension still require serious attention, particularly in terms of education and transparency. BPJS Kesehatan needs to explicitly communicate how data protection mechanisms operate and provide strong guarantees of personal information protection. This is important to increase public trust and expand technology adoption equitably across all segments of society.

However, some people still have concerns about the security of their personal data when using digital applications, including Mobile JKN. Interviews revealed that some users hesitate to use digital features due to fears of misuse or information leaks. These concerns generally arise among users who are unfamiliar with digital technology and have limited understanding of application security systems. This situation leads some people to prefer using manual services directly rather than utilizing digital services through applications.

In addition to public understanding, low digital literacy also affects users' level of trust in application system security (Rahman & Taufiq, 2024; Taufiq & Karunia, 2023). Some users still lack understanding of the importance of maintaining account confidentiality, such as using secure passwords and protecting personal data when using digital devices. Furthermore, limited information and public awareness regarding the security system of the Mobile JKN application means the public doesn't fully understand that the application has been designed with user data protection mechanisms (Eriksson et al., 2023; Nurhayati et al., 2025; Rahman & Taufiq, 2024). This has resulted in low levels of public confidence in the security of available digital services.

Based on the research results, it can be concluded that the privacy dimension of the Mobile JKN application at the Cisaga Public health center has been implemented through a user account

and data protection system, but public trust in the security of digital services remains suboptimal. Low digital literacy and a lack of public understanding of application system security are factors that influence the use of digital services. Therefore, increased public awareness regarding the security of the Mobile JKN application and education regarding personal data protection are needed to ensure the public feels safer and more confident in using BPJS Kesehatan digital services.

3.5. Responsiveness Dimension

The responsiveness dimension in E-SERVQUAL theory relates to the service provider's ability to respond quickly and appropriately to the needs, complaints, and challenges experienced by digital service users. Based on research at the Cisaga Public health center (Puskesmas), BPJS Kesehatan, through its Mobile JKN application, has provided various support facilities for users, such as an information center, a complaints service, and service officers at health facilities who assist the public in using the application. The presence of these support services demonstrates an effort to respond to challenges faced by JKN participants, particularly in using the online queue feature.

The responsiveness of the Mobile JKN digital system is not yet optimally functioning independently and is still heavily dependent on manual support from officers. The complaint feature available in the application is still unknown or unfamiliar to some users, especially those less familiar with technology. This aligns with the argumentation from Darmawan et al. (2022), who stated that good responsiveness in digital services is not only determined by the speed of the system's response, but also by the extent to which users can resolve issues without relying on external assistance (Alif & Andikaputra, 2024; Nurhayati et al., 2025). Therefore, education and assistance are crucial elements in improving the responsiveness of digital services.

Therefore, efforts to improve responsiveness in Mobile JKN are not sufficient simply by providing a digital complaint feature. Intensive outreach on how to use the complaint feature, increasing user digital literacy, and improving the quality of the application's automated response features are also needed. These steps are expected to reduce dependence on officers and strengthen the digital system's position as the primary solution provider for user problems. However, in practice, the responsiveness dimension of the Mobile JKN service is still not optimal. Based on observations and interviews, some users complained about slow response times when system disruptions occurred, such as login difficulties, application errors, or failures when obtaining an online queue number. In some cases, people had to visit the health facility in person for assistance because the problems they experienced could not be immediately resolved through the application. This resulted in a less efficient service process and reduced user experience when using digital services.

The public's limited understanding of digital technology also influences the need for a more intensive service response. The majority of users at the Cisaga Public health center are adults and elderly, who still require assistance in operating the Mobile JKN application. However, limited staff and minimal outreach regarding the application's use have prevented the assistance process from being fully implemented. Consequently, some residents experience difficulties when encountering technical issues and ultimately opt to revert to the manual service system. Based on the research results, it can be concluded that the responsiveness dimension of the Mobile JKN digital service at the Cisaga Public health center still requires improvement. Although assistance and complaint services are available, the speed and effectiveness of responses to user issues do not fully meet community expectations. Therefore, it is necessary to improve the quality of support services, optimize the response to system disruptions, and strengthen outreach and assistance in application use so that the community can receive more responsive and accessible digital services.

3.6. Compensation Dimension

The compensation dimension in E-SERVQUAL theory relates to the service provider's ability to provide solutions, handling, or compensation when users experience disruptions or inconveniences while using digital services. Based on research at the Cisaga Public health center (Puskesmas), when problems arose with the Mobile JKN online queue feature, the health facility still provided alternative services to JKN participants through a manual registration system. This

measure ensured that people could still access healthcare services despite experiencing difficulties using the application. With this alternative service, users were not completely disadvantaged when the digital system experienced disruptions.

However, the compensation provided was still rudimentary and not fully integrated into the digital service system. Interviews revealed that users experiencing app issues were generally directed to visit the Puskesmas without a quick technical solution through the Mobile JKN application itself. Furthermore, there was no clear notification or information provided to users when the system experienced disruptions. This situation led some people to feel uncertain about service delivery when the application could not be used properly.

Another problem identified was the public's lack of understanding regarding procedures for handling digital service issues. Some users don't know what to do when they fail to access the application or encounter errors during online queue registration. As a result, people prefer to revert to the manual system, perceived as safer and providing more immediate service assurance. This indicates that the digital service disruption response mechanism is not yet fully capable of providing a sense of comfort and trust to users.

Based on the research results, it can be concluded that the compensation dimension of the Mobile JKN service at the Cisaga Public health center remains suboptimal. Although the health facility has provided alternative manual services in the event of system disruptions, the digital problem-solving mechanism still requires improvement. Therefore, it is necessary to develop a service disruption information system, provide clearer problem-solving guidance (Alif & Andikaputra, 2024; Nurhayati et al., 2025), and improve the ability of staff to assist users so that people can continue to receive certainty and comfort when experiencing problems using the Mobile JKN application.

3.7. Contact Dimension

The contact dimension in E-SERVQUAL theory relates to the ease with which users can contact service providers when they need assistance, information, or troubleshooting when using digital services. Based on research at the Cisaga Public health center (Puskesmas), BPJS Kesehatan (Indonesian Social Security Agency) has provided several communication channels for JKN participants, including staff services at health facilities, the BPJS Kesehatan call center, Pandawa services, and the help menu on the Mobile JKN application. The existence of these various communication channels demonstrates an effort to facilitate the public in obtaining information and assistance regarding the use of digital services, particularly the online queuing feature.

Limited signal reception in areas like Cisaga also reduces user accessibility to the app's support features. When the app is difficult to open or unresponsive, users' chances of contacting service providers are reduced. Observations at public health centers (Puskesmas) revealed no banners, brochures, or other visual media providing information about the Mobile JKN app's complaint feature, either online or through direct service contact. The absence of alternative contact channels such as customer service numbers, official WhatsApp, or direct assistance at the registration area also indicates that the system has not actively expanded communication support to the community. Users facing challenges outside of public health center service hours have virtually no access to direct assistance and must resolve their issues independently without assistance.

This finding aligns with previous scholars (Amelinda et al., 2024; Guilabert et al., 2024; Helms et al., 2024) assertion that digital service systems must be equipped with active and responsive helplines so that users feel cared for and protected from abandonment when experiencing problems. Without effective contact support, users are at greater risk of feeling confused, unheard, or even losing trust in digital services. Thus, the contact feature in Mobile JKN, both online through the app and offline support through officers, is still not functioning optimally. To improve the quality of digital services, active efforts by service providers are needed to introduce and expand communication channels to users, along with ongoing education. Only with an inclusive and responsive approach can the contact dimension contribute significantly to creating a trusted digital service experience that is oriented towards community needs.

The implementation of the contact dimension in the use of the Mobile JKN application still faces several obstacles. Based on interviews, some residents are not yet clear about the help

channels they can contact when experiencing difficulties using the application. Many users prefer to come directly to the Cisaga Public health center to seek assistance from staff rather than using the available digital help services or call center. This situation indicates that access to information about support services has not been optimally disseminated to JKN users.

The community's limited ability to use digital technology also affects the effectiveness of the contact dimension. The majority of users, from adults to the elderly, tend to experience difficulties utilizing digital-based support services. They feel more comfortable receiving direct explanations from health workers than using support features through apps or other communication channels. Furthermore, the limited number of service personnel prevents optimal support for users, especially when there are a large number of patients.

Based on the research results, it can be concluded that the contact dimension of the Mobile JKN digital service at the Cisaga Public health center still needs improvement. Although communication and support channels are available, the level of public utilization remains low due to a lack of public awareness and limited digital literacy. Therefore, it is necessary to improve the dissemination of information regarding support services, optimize the role of staff in providing support, and develop more accessible communication services so that the public can receive assistance quickly and effectively using the Mobile JKN application.

3.8. Theoretical dan Practical Implications

Synthesizing the findings from the Cisaga Public health center, the analysis of the digitalization of the JKN program shows there is a notable gap between technology availability and real adoption rates among people. Even though the Mobile JKN application provides many practical advantages, such as an online queue and independent administration, its use is largely impeded by several factors. One can see how stark the difference between theory and practice is when analyzing the numbers: although there are over 20,000 members of the JKN program, only 0.15% of them use any kind of digital service, while most people rely on the traditional way of working. It seems likely that this phenomenon can be attributed to poor literacy rates among older people, as well as general internet infrastructure problems.

Moreover, the performance of the E-SERVQUAL parameters such as availability, performance, and responsiveness reveals that the digital health care service presently operates as an auxiliary and not as a standalone approach. For instance, the problem with logging into the system and its poor performance during the high period of usage negatively impacts customer satisfaction. The failure to integrate the digital queues with the traditional procedures of the clinics causes overlap in operations. Whereas the digital healthcare services ensure ID-password protection as part of the privacy strategy, the absence of clear information on data protection raises concerns among new users. Overall, the results indicate that for the digital transformation process to be effective at the grassroots level, it should receive proper public education, technological support, and management focus.

The results of this study carry a lot of theoretical importance in the field of digital government and service quality paradigm, especially in relation to Indonesian rural health care services. The main contribution to the existing E-SERVQUAL theory can be seen in how the dimensions of efficiency, fulfillment, and responsiveness depend greatly not only on technical factors but also on "user readiness" and "infrastructural equity." The identification of the large usage gap despite a working information system shows that in the case of underdeveloped areas, the E-SERVQUAL paradigm needs to be combined with the Technology Acceptance Model (TAM). In doing so, it becomes clear that "Perceived Ease of Use" depends greatly on people's digital literacy and age, and thus, theoretical models of digital health need to focus on socio-demographic barriers as major impediments to achieving efficiency through technological means (Asikin & Alam, 2024). Practically speaking, this research provides a valuable strategic assessment for BPJS Kesehatan and local health care authorities in dealing with their digital transformations. First of all, the low rate of elderly people's usage and internet literacy among the general population means that a universal approach would be insufficient.

From the practical perspective, it is necessary to consider implementing the "hybrid service model" at Puskesmas Cisaga and other such institutions, when digital queue systems will be complemented with the presence of the human staff that will assist users in operating the

application. The idea is supposed to mitigate the literacy problem among users and build their confidence with time. Moreover, the study highlights the urgent need for a technical and managerial synergy. Service providers have to guarantee that there are dedicated physical lanes or priority counters that would complement the digital promise about “efficiency.” Otherwise, the absence of any distinction between the digital and non-digital processes leads to the situation in which the users do not see relative benefits and, thus, refuse to abandon their manual practices. Finally, the development of the Contact and Compensation dimensions should be considered in terms of creating local contacts and organizing digital socialization via official WhatsApp helpdesks.

4. Conclusion

The implementation of the Mobile JKN application, particularly the online queue feature at the Cisaga Public health center, represents an effort by BPJS Kesehatan to improve the quality of public health services through digital transformation. Based on the E-SERVQUAL approach, the study found that the digital service quality of the Mobile JKN application has provided several benefits, especially in facilitating healthcare registration processes and reducing manual queues for users who are familiar with digital technology. The application has also supported more efficient and practical access to healthcare services through mobile-based systems. However, the overall implementation of the online queue service has not yet operated optimally. The efficiency dimension indicates that many users, particularly older adults, still experience difficulties in operating the application due to limited digital literacy. In terms of system availability, technical issues such as unstable internet connections, login failures, and system errors continue to affect service reliability. Furthermore, the fulfillment dimension shows that the application has not fully met user expectations because many participants still prefer manual registration systems that are considered more reliable and familiar.

The study also reveals that the privacy, responsiveness, compensation, and contact dimensions still face several obstacles in practice. Public trust in the security of digital services remains relatively low due to limited understanding of technology and data protection systems. In addition, responses to user complaints and technical problems are still perceived as less effective, while communication and assistance services have not been optimally utilized by the community. As a result, the adoption rate of the Mobile JKN application at the Cisaga Public health center remains significantly low compared to the total number of JKN participants. Overall, the study concludes that the quality of the Mobile JKN online queue service at the Cisaga Public health center still requires improvement in various aspects of digital service delivery. Strengthening digital literacy, improving internet infrastructure, enhancing system reliability, and optimizing user assistance and socialization programs are essential to increasing public trust and encouraging wider adoption of digital healthcare services. Through these improvements, the Mobile JKN application is expected to provide more effective, efficient, and inclusive healthcare services for all JKN participants.

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