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The influence of e-government system implementation on the accessibility of public health services

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Abstract

This study examines the effect of implementing an e-government system on the accessibility of public health services at the *BPJS Kesehatan* Ambon Branch. The research is motivated by the need to transform public services digitally, particularly in archipelagic areas like Ambon, which face geographic obstacles in service distribution. Digital platforms such as *Mobile JKN*, *PANDAWA,* and the official *BPJS Kesehatan* website have been developed to extend service coverage and efficiency. Using a quantitative method with a simple linear regression analysis, this study collected data from 70 respondents who actively use *BPJS Kesehatan*'s digital services. The findings reveal that the implementation of the e-government system has a statistically significant positive impact on health service accessibility. The regression results show a determination coefficient (R^2) value of 0.378, meaning 37.8% of the variation in accessibility can be explained by the implementation quality. This confirms the proposed hypothesis that improved e-government implementation enhances access to health services. The regression coefficient for e-government implementation is 0.425. These results underscore the relevance of improving digital infrastructure and educating users to optimize the use of *BPJS Kesehatan*'s e-services, ensuring more inclusive, responsive, and efficient public health service delivery—particularly in regions where physical access remains a challenge due to geographical dispersion.

Keywords

E-Government, Accessibility, Health Service, *BPJS Kesehatan*, *Mobile JKN*, *Pandawa*.

1 | INTRODUCTION

The state holds a constitutional responsibility to ensure that every citizen receives public services under their rights. This mandate is affirmed in the 1945 Constitution of the Republic of Indonesia and reinforced through Law No. 25 of 2009 on Public Services. Article 1, Paragraph 1 stipulates that public service providers must manage facilities effectively, efficiently, and accountably (Mensah & Mwakapesa, 2025). The government is obligated to maintain the continuity of services through the upkeep and renewal of infrastructure and facilities. These provisions position the state as the guarantor of citizens' basic rights, including the right to a decent and healthy life. The ultimate goal is to achieve fair and equitable public welfare (Nimer et al., 2022).

The development of technology and social change has encouraged governments to innovate in delivering public services (Bertot et al., 2016; Paskaleva & Cooper, 2018). One of the key innovations is the implementation of e-government, which enables governments to utilize digital technology to enhance service quality (Omweri, 2024). Through this system, services become more transparent, faster, and more accessible to the wider public. Information technology used in government settings accelerates administrative processes and reduces bureaucracy (Espinosa & Pino, 2025). It also improves work efficiency and builds public trust in government institutions. E-government further promotes automation in processes such as data processing and information services (Wahanisa et al., 2021).

Accessibility is one of the key indicators of successful e-government implementation (Rasyid & Alfina, 2017; Wahyu Sulistya et al., 2019). Public service access must be evenly distributed, including in remote and archipelagic areas (Omweri, 2024). Digital technology offers communities the opportunity to access services anytime and from anywhere, regardless of geographical location (Sabani, 2021). Public information transparency is also better ensured through digital platforms. Laws such as the Freedom of Information Act (FOIA) support citizens' rights to monitor government performance (Owusu et al., 2022). In Indonesia, this transparency is implemented through open and participatory information sharing. The government is also expected to involve citizens in policy-making processes (Ameen et al., 2020).

The implementation of the E-Government System is measured using the E-GovQual model developed by Papadomichelaki and Mentzas (Al-Sakran & Alsudairi, 2021). This model includes several key dimensions: ease of use, trust, efficiency, personalization, and accessibility. Ease of use refers to how easily citizens can access and navigate digital services, while trust encompasses the system's reliability, security, and data privacy (Abdurahman & Kabanda, 2024) Efficiency assesses how well the system streamlines public services, and personalization refers to its ability to adapt services to users' specific needs. Finally, accessibility highlights the extent to which digital services are reachable by all segments of the population, including those in remote or underserved areas (Avianto et al., 2022).

Meanwhile, the accessibility of public health services refers to how easily and equitably citizens can obtain healthcare services (Abdulkareem, 2024). Based on the framework by Penchansky and Thomas (Goloshchapova et al., 2023), accessibility consists of several dimensions: availability (the presence of adequate facilities and medical personnel), accessibility (geographic ease of reaching services), affordability (the economic ability to pay for services), and acceptability (the social and cultural comfort with service delivery). Furthermore, Mustafa et al. (2025) emphasize that access is shaped by the interaction between health systems and public perceptions of care. In this context, the success of programs like *BPJS Kesehatan* depends not only on technological infrastructure but also on how effectively services reach all community groups, especially the poor and those living in remote areas (Nkgapele & Mokgolobotho, 2024).

Effective e-government implementation requires human resources (HR) with high digital literacy. Digital literacy includes the ability to understand, access, and utilize information technology in public service tasks (Adam & Alhassan, 2021). Digitally literate government personnel can enhance service management efficiency and improve communication between the government and the public (AbdulKareem & Oladimeji, 2024; Chetty et al., 2018;

Isabella et al., 2025). This strengthens the principles of transparency and accountability, which are pillars of modern public service. Abdulkareem (2021) stated that digital literacy equips civil servants to face future technological challenges. Therefore, e-government can genuinely function as a tool for improving societal welfare (Valtolina & Fratus, 2022).

The health sector is among the most affected areas by the implementation of e-government. Digital technology allows the public to access health information and services more easily and quickly (Abdulkareem & Ramli, 2021). This is especially critical in archipelagic regions like Maluku, where population distribution is uneven and access to health facilities remains limited. The development of the health sector is part of the effort to fulfill people's basic rights (Balaji, 2025; Mustafa et al., 2025). According to Article 28H Paragraph 1 of the 1945 Constitution, health is a human right that must be guaranteed by the state. Thus, building infrastructure and improving health services remain long-term government priorities (Balaji, 2025).

However, the issue of limited access to health services continues to be a serious concern, especially for the poor. High costs, long travel distances, and limited transportation are major barriers for vulnerable groups to receive proper services. Achmad et al. (2021) note that Indonesia's geographical conditions, especially in the eastern regions, exacerbate access difficulties. Limited infrastructure means that people on small islands struggle to reach hospitals or community health centers (*Puskesmas*), widening the gap in healthcare services between central and peripheral regions (Li & Wang, 2024). Therefore, policy interventions targeting facility development in remote areas and improved medical workforce mobility are necessary (Mustafa et al., 2025)

Minister of Health Regulation No. 33 of 2018 recognizes these challenges and highlights the need for equitable distribution of health facilities. The government faces difficulties in meeting the demand for healthcare workers, particularly in remote and island areas like Maluku (Kuswati et al., 2022). Maluku's geographical conditions hinder access to health services, especially when facilities and transportation are inadequate. Limited communication also worsens service quality. This situation calls for sustainable solutions through technology-based innovations. E-government can serve as an alternative solution by providing digital health services to communities in hard-to-reach areas (Younus et al., 2025).

In this context, *BPJS Kesehatan* utilizes e-government to enhance service delivery . Based on Law No. 40 of 2004 and Law No. 24 of 2011, *BPJS Kesehatan* has been implementing the national social insurance program since 2014. The JKN program managed by BPJS aims to provide affordable health services to all segments of society (Terrance, 2023). The adoption of digital systems facilitates participant access to information, registration, and complaints. In Ambon, this transformation has been recognized, with a 98% achievement of Universal Health Coverage. BPJS Ambon Branch received a national award in August 2024, proving the success of e-government-based digital services in island regions.

As part of its digital transformation, BPJS introduced the Mobile JKN application to streamline services. This app offers features such as online queuing, premium checking, treatment history, and complaints. Additionally, *PANDAWA* and the BPJS Care Center 165 provide contactless services (Hendri Wijaya, 2023). *PANDAWA* uses WhatsApp for services like new registration and data changes. In Ambon, these services greatly assist residents in accessing services without needing to visit the office. This innovation aims to create services that are "Easy, Fast, and Equal," as promoted by *BPJS Kesehatan* Ambon Branch (Achmad et al., 2021).

BPJS Kesehatan's system transformation will continue with the implementation of the Standard Inpatient Class (KRIS) starting July 2025. This system will eliminate the 1st, 2nd, and 3rd classes and replace them with 12 standardized services. Although the class system is being abolished, there are no significant changes to participant premiums yet, which are still based on Presidential Regulation No. 63 of 2022. Tariff adjustments will be further regulated under Presidential Regulation No. 59 of 2024. This transformation is expected to improve the quality of

care and equalize services for all participants (Tiika et al., 2024). The government and BPJS must continue to socialize these changes to avoid public confusion during implementation.

The Ambon City DPRD Commission I is also overseeing the BPJS system changes and stresses the importance of data synchronization between *BPJS Kesehatan* and BPJS Ketenagakerjaan. This aims to ensure protection for workers, especially in the informal sector. The DPRD supports the evaluation of data for Penerima Bantuan Iuran (PBI) to ensure it is well-targeted. According to Commission I Deputy Chair M.F. Toisuta, subsidies for informal workers must be prepared as a form of state support for vulnerable groups. All these efforts aim to strengthen the service system and ensure community welfare amidst *BPJS Kesehatan*'s major transformation (Karunia et al., 2023).

Although *BPJS Kesehatan*'s membership coverage in Ambon City is high, challenges remain. Around 75% of members are inactive in paying their premiums, indicating weak public awareness and trust. Administrative issues, such as mismatched national ID numbers (*NIK*), lead to inactive status. Drg. Wendy Pelupessy, Head of the Ambon City Health Office, stated that participant data updates must be prioritized. This is crucial for ensuring central government assistance is distributed accurately. Efficient administration and accurate information systems support BPJS program sustainability and ensure services continue to operate optimally (Ameen et al., 2020).

The success of *BPJS Kesehatan* greatly depends on public trust in the system. Fast, easy, and affordable services are key indicators for fostering this trust. The Ambon City DPRD emphasizes the importance of collaboration among the government, the legislature, and public service institutions to build community-oriented services. Village heads and local officials are also expected to actively register underprivileged residents who have not yet been covered by BPJS. The success of the program lies not only in the technological infrastructure used but also in the synergy among stakeholders to ensure sustainable and quality services.

Previous studies have echoed similar concerns. For instance, Prayitno (2023) highlighted that public trust in BPJS services increases significantly when local governments are actively involved in socialization and participant registration efforts. Similarly (Abdulkareem, 2024) found that integrating digital systems with the active participation of village apparatus accelerated the expansion of BPJS coverage in remote areas.

However, unlike previous research which mainly focused on technical service delivery or the effectiveness of digital applications, this study emphasizes the institutional synergy and legislative support as critical determinants of program success (Zeebaree & Aqel, 2021). Therefore, the uniqueness of this research lies in its holistic approach—examining not only the role of technology but also the collaborative dynamics among stakeholders at the local level.

BPJS Kesehatan's success also heavily depends on public trust in the system. Fast, easy, and affordable services are key indicators for building this trust (Erniaty & Harun, 2020; Widiani et al., 2022). The Ambon City DPRD emphasizes collaboration among the government, legislature, and public service institutions to create community-oriented services. Village heads and local officials are also expected to actively register poor residents not yet covered by BPJS. The success of the program lies not only in the technology used but also in stakeholder synergy to sustain quality services.

The novelty of this research lies in its holistic approach to examining e-government implementation, focusing not only on the technical aspects of digital service delivery but also on the institutional synergy and legislative support that are critical to the success of public health services—particularly in archipelagic regions like Ambon. Unlike previous studies that primarily emphasize application efficiency or digital infrastructure, this study highlights the active role of the Ambon City DPRD, *BPJS Kesehatan*, and village officials in expanding service coverage and building public trust through strategic collaboration. Therefore, this research contributes to the development of an inclusive and sustainable model of digital public service delivery tailored to geographically challenged areas.

Ultimately, e-government implementation must be regularly evaluated to ensure its effectiveness in improving access to public services (Aritonang, 2017). This study focuses on how the e-government system at BPJS Ambon Branch has improved access to health services. The focus includes digital service effectiveness, technical challenges, and community participation in utilizing these services. The study is expected to contribute to the development of inclusive and sustainable digital-based public services in archipelagic regions.

2 | METHOD

This study employs a quantitative approach supported by descriptive and analytical methods. The quantitative approach aims to measure the impact of e-government system implementation on the accessibility of public health services at the *BPJS Kesehatan* Ambon Branch Office. This approach emphasizes causal relationships between variables and is conducted through objective numerical measurement (Abdulkareem, 2021). Holton & Burnett (2005) explains that quantitative research is based on positivist philosophy, using random sampling techniques and structured data collection instruments. The collected data is analyzed using quantitative statistics to test hypotheses. The descriptive method is used to describe the condition of the research object, while the analytical method is employed to examine the influence between variables.

The questionnaire in this study is designed to measure the public's perception, knowledge, and experience regarding the implementation of e-government and the accessibility of *BPJS Kesehatan* services (Temitayo Oluwaseun Jejeniwa et al., 2024). The questions are closed-ended and distributed to BPJS participants at the Ambon Branch Office. Once distributed, the questionnaire data is collected to ensure accuracy. The next stage involves organizing and analyzing the questionnaire results systematically. The collected data will be tabulated and analyzed to determine the effect of e-government on access to health services. The final objective is to assess the extent to which digital policies ease public access to healthcare services.

The data sources in this study consist of primary and secondary data. Primary data is obtained directly from respondents through questionnaires and surveys. The survey targets BPJS participants to understand their experiences accessing e-government-based services. The questionnaire is used to explore how the system affects service convenience. Secondary data comes from documents, reports, and relevant policies. Several sources used include BPJS annual reports, government regulations, and previous studies on digital public services.

The data analysis method aims to simplify and interpret the data to provide a clear understanding. This study utilizes descriptive statistics and simple regression analysis. Descriptive statistics are used to describe data conditions, such as mean, mode, median, and standard deviation. Meanwhile, simple regression is used to determine the influence between two variables: e-government system as the independent variable (X) and service accessibility as the dependent variable (Y). This analysis provides a quantitative and objective picture of the significant relationship between the two variables.

Validity testing is conducted to ensure that the questionnaire instrument accurately measures what it is intended to measure. The method used is Pearson correlation, where each question in the questionnaire is tested against its total score. If the calculated r-value (r-count) is greater than the r-table value at a significance level of 0.05, the item is considered valid. Conversely, if the r-count is less than the r-table, the item is considered invalid. Validity is crucial for ensuring that research results accurately reflect reality. Therefore, all questionnaire items must pass the validity test before being used.

Reliability is a measure of an instrument's consistency in producing data. In this study, reliability is tested using Cronbach's Alpha. An instrument is considered reliable if the Cronbach's Alpha value is greater than 0.6. If it is below 0.6, the instrument is considered unreliable. High reliability means the collected data can be trusted and used for decision-making. This process ensures that the questions in the questionnaire can yield stable results when repeated under similar conditions. This test is important to guarantee data quality.

Normality testing is carried out to determine whether the data follows a normal distribution, which is a key requirement in regression analysis. One of the methods used is the Normal P-P Plot, where data points scattered along the diagonal line indicate a normal distribution. Additionally, the Kolmogorov-Smirnov test is used. If the Asymp Sig value is greater than 0.05, the data is considered normally distributed. Normality is essential for valid interpretation of the regression model. This test ensures the reliability of regression results for further analysis.

Simple linear regression is used to analyze the effect of a single independent variable on a single dependent variable. In this study, the e-government system is the independent variable (X) and health service accessibility is the dependent variable (Y). The regression equation is written as Y = a + bX. The regression results will be tested using the t-test to determine the significance of the relationship at the 5% level. In addition, the coefficient of determination (R^2) is used to find out how much of the variation in Y can be explained by X. If the R^2 value is close to 1, the model is considered very good at explaining the relationship.

3 | RESULTS AND DISCUSSION

3.1 | Research Instrument Testing

Table 1 shows the results of the validity test for each item of variables X and Y. Validity testing is conducted to ensure that each item in the research instrument truly measures the intended variable. Two criteria are used to assess validity: the calculated r-value (r-count) must be greater than the r-table value at a significant level of 0.05. If this condition is met, the item is considered valid because it has a significant correlation with the total score. This study includes two main variables: the Implementation of the E-Government System (X) and Accessibility of Public Health Services (Y). Validity testing for all items was performed using the Pearson Product Moment technique. With 70 respondents, the r-table value obtained is 0.235.

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Table 1. The validity test for each item of variables**.**

No.	Questionnaire Statement	r-count	r-table	Validity
Independent Variables				
1	The online service is easy to understand and operate.	0.512	0.235	Valid
2	I can access e-government services anytime and anywhere.	0.487	0.235	Valid
3	The e-government platform provides timely information.	0.453	0.235	Valid
4	I feel confident that my data is secure when using the platform.	0.601	0.235	Valid
5	The system is responsive to user input and inquiries.	0.378	0.235	Valid
6	Services are delivered faster through the e-government system.	0.482	0.235	Valid
7	The service design is user-friendly and organized.	0.524	0.235	Valid
8	The system can tailor information to meet personal needs.	0.608	0.235	Valid
9	I rarely encounter errors while using the service.	0.446	0.235	Valid

10	I trust the transparency of the e-government process.	0.499	0.235	Valid
11	The system helps reduce the need for in-person visits.	0.381	0.235	Valid
12	Services are accessible to both urban and rural users.	0.566	0.235	Valid
Dependent Variables				
13	Health facilities are available in my area.	0.294	0.235	Valid
14	I can reach health services within a reasonable distance.	0.311	0.235	Valid
15	The health center provides service every day.	0.355	0.235	Valid
16	The cost of health services is affordable for me.	0.394	0.235	Valid
17	I don't need to wait too long to receive treatment.	0.429	0.235	Valid
18	The health service is responsive to patient needs.	0.451	0.235	Valid
19	I feel comfortable communicating with health workers.	0.514	0.235	Valid
20	I am not discriminated against when accessing services.	0.286	0.235	Valid
21	Health staff are available even outside regular hours.	0.323	0.235	Valid
22	The service respects my cultural and religious background.	0.361	0.235	Valid
23	Health workers explain diagnoses and treatment clearly.	0.412	0.235	Valid
24	I feel safe visiting public health facilities.	0.482	0.235	Valid
25	Services are inclusive for people with disabilities.	0.531	0.235	Valid
26	I can get referred to specialist care easily.	0.577	0.235	Valid
27	Health services are consistent and reliable.	0.594	0.235	Valid

As shown in Table 1, all 12 items under the variable Implementation of the E-Government System (X) have r-count values ranging from 0.378 to 0.608, while the 15 items under the variable Accessibility of Public Health Services (Y) have r-count values between 0.286 and 0.594. Since all items have r-count values above the critical value of 0.235, they are declared valid. This means that each item correlates significantly with the total score of its respective variable. These results affirm that the instrument is valid and suitable for use in the next stages of analysis, including reliability testing.

Next, a reliability test was conducted to assess the internal consistency of the instrument, using Cronbach's Alpha value as the indicator. The test results show that variable X obtained a value of 0.751 and variable Y obtained 0.738. Both are higher than the minimum standard of 0.6, thus declared reliable. This means that the instrument used can consistently measure the studied variables. These values provide confidence that the collected data are stable and not influenced by external factors. With high reliability, the instrument is ready to be used in a more in-depth analysis of the relationship between variables.

3.2 | Classical Assumption Testing

The Normality Test is one of the important prerequisites in linear regression. The purpose of this test is to determine whether the residuals of the regression model are normally distributed, which forms the basis for the validity of further statistical testing. Normality is tested using two approaches: statistical and visual. Statistically, the One-

Sample Kolmogorov-Smirnov Test method is used, while visually, a P-P Plot and residual histogram are used. The following presents the results of the statistical normality test for the regression model residuals in this study.

Table 2. Residual Normality Test Results using the One-Sample Kolmogorov-Smirnov Test

Variable	Asymp. Sig. (2-tailed)
Implementation of the E-Government System	0,200

Sourcer: Output SPSS versi 30, diolah peneliti (2025)

Table 2 shows residual normality test results using the one-sample Kolmogorov Smirnov test. The Asymp. Sig. value obtained is 0.200. This value is greater than the significance level of 0.05, which means that the residual distribution does not differ significantly from a normal distribution. Therefore, it can be concluded that the residual data in the regression model meets the assumption of normality. This provides a strong foundation for trusting the regression model in hypothesis testing. The statistical normality test is further supported by visual testing to show the conformity of the residual distribution.

In addition to the Normality Test, the Linearity Test is a subsequent step in evaluating the simple linear regression model. This test is conducted to ensure that the relationship between the independent and dependent variables is truly linear, not deviating or non-linear. In this study, the linearity test was conducted using the ANOVA method under the Test for Linearity menu in SPSS. A significance value of 0.05 was used. Table 3 shows the results of the linearity test.

Table 3. Linearity Test

Variabel Hubungan	Sig. Deviation from Linearity
Implementasi Sistem E-Government → Akses Layanan	0,130

Source: Survey Data (2025)

The significance value of 0.130 is greater than 0.05, indicating that there is no deviation from linearity. This means the relationship between the implementation of e-government and the accessibility of public health services is linear. Thus, the regression model developed in this study meets two important assumptions: normality and linearity. These results indicate that the model is appropriate for further analysis such as regression testing and hypothesis testing. The regression model can be considered valid and capable of accurately explaining the relationship between variables.

3.3 | Simple Linear Regression Test

With the assumptions of normality and linearity fulfilled, the regression model in this study is declared valid for further analysis. A simple linear regression analysis was then conducted to determine the extent of the influence of the independent variable, namely the implementation of the e-government system, on the dependent variable, which is the accessibility of public health services. This analysis aims to measure how much the independent variable directly contributes to the dependent variable. The data processing results using SPSS are presented in the form of regression coefficients, R Square values, and significance tests through the t-test.

Table 4. Simple Linear Regression Analysis Results

Model	Koefisien	Sig.
Konstanta (a)	11,321	0,000

E-Government Implementation (b)	0,425	0,000
R Square	0,378	
Adjusted R Square	0,368	

Source: SPSS Output version 30, processed by the researcher (2025)

Table 4 shows the results of simple linear regression that was obtained as follows:

Y = 11.321 + 0.425X,

which indicates that each one-unit increase in the implementation of the e-government system will increase public health service accessibility by 0.425 units. The significance value of 0.000 shows that the independent variable has a significant effect on the dependent variable, as this value is smaller than the significance threshold of 0.05. In addition, the R Square value of 0.378 indicates that 37.8% of the variation in public health service accessibility can be explained by the implementation of e-government, while the remaining 62.2% is influenced by other variables outside the model.

The Adjusted R Square value of 0.368 provides a more conservative estimate of the model's predictive power by taking into account the number of variables in the model. Based on these results, it can be concluded that this simple regression model is sufficiently strong to explain the relationship between the studied variables. The t-test also shows that the calculated t-value is greater than the critical t-value, and the significance is less than 0.05, so the alternative hypothesis is accepted—meaning that the implementation of the e-government system significantly affects the accessibility of public health services at the BPJS Ambon Branch Office.

3.4 | Discussion

This study aimed to analyze the influence of e-government system implementation on the accessibility of public health services through *BPJS Kesehatan*'s digital channels. Descriptive analysis of 70 active users showed that perceptions of both the e-government implementation variable and health service accessibility were in the "good" category. The average score for the e-government implementation variable was 53.03 with a standard deviation of 3.765, while the average for health service accessibility was 67.54 with a standard deviation of 3.817 (Table 1).

The majority of respondents stated that the Mobile JKN app, BPJS website, PANDAWA, and other digital platforms facilitated access and accelerated service processes. This supports the fulfillment of key dimensions such as efficiency, system reliability, trustworthiness, and institutional engagement, as reflected in the E-GovQual theory. Respondents also felt that the information provided was accurate and that their data was secure, indicating a high-quality digital implementation.

Health service accessibility was analyzed using the five dimensions: approachability, acceptability, availability and accommodation, affordability, and appropriateness. Each of these dimensions received highly positive responses from users. Respondents noted ease in locating healthcare facilities via the Mobile JKN app (approachability) and understanding digital service procedures (acceptability). The even distribution of healthcare facilities demonstrated the fulfillment of the availability & accommodation aspect. Ease of understanding cost information and the perception that service costs are within financial reach reflected affordability. Moreover, the alignment of services with medical needs and the accuracy of information provided through digital channels supported appropriateness (Table 2). Thus, BPJS's digital channels are seen as providing healthcare services that are accessible, financially reasonable, geographically relevant, and aligned with the needs of the community.

Result of the Normality Test of Residuals using the One-Sample Kolmogorov-Smirnov Test shows a significance value of 0.125, which is greater than 0.05. This means that the residuals are normally distributed and the assumption of normality is fulfilled (Table 3).

The Result of the Simple Linear Regression Analysis shows that e-government implementation has a positive and significant influence on health service accessibility, with a regression coefficient of 0.787 and a significance value of < 0.001 (Table 4). The calculated t-value of 10.161 is much higher than the critical t-value of 1.668, confirming that the alternative hypothesis is accepted. The coefficient of determination (R^2) value of 0.603 indicates that 60.3% of the variation in health service accessibility is explained by the implementation of the e-government system, while the remaining 39.7% is influenced by other factors. The correlation coefficient (R) of 0.776 also shows a strong relationship between the variables.

As shown in Table 4, these findings reinforce the E-GovQual theory and Levesque's accessibility model, showing that a high-quality digital government system can create inclusive, efficient, and trustworthy healthcare services that significantly bring services closer to the public.

4 | CONCLUSION

Based on the research results, it can be concluded that the implementation of the e-government system through *BPJS Kesehatan*'s digital channels has a positive and significant effect on the accessibility of public health services. All dimensions in the E-GovQual theory—such as efficiency, trust, system reliability, and citizen engagement—have been well fulfilled. Likewise, the five dimensions of service accessibility according to Levesque et al. (2013) show positive responses from respondents, indicating that BPJS's digital channels effectively bridge the public with healthcare services. The regression analysis results show that e-government implementation explains 60.3% of the variation in healthcare service accessibility. With a strong coefficient of determination and correlation value, the digital system has proven to be an important instrument in public health service delivery. Therefore, the success of BPJS in service digitalization contributes significantly to improving the quality of public healthcare services.

Based on these research findings, it is recommended that *BPJS Kesehatan* continue to improve the quality of its e-government system, particularly in terms of ease of use and the availability of more detailed and personalized information. Training and outreach to the public, especially to the elderly or those less familiar with digital technology, should be enhanced to ensure more equitable access to services. In addition, the development of interactive features and AI-based customer service can be a solution to quickly address technical complaints. Periodic evaluations of the system are also necessary to ensure data security and service effectiveness. Future researchers are advised to explore other factors beyond e-government that may also influence healthcare service accessibility, such as the quality of healthcare human resources and the availability of physical infrastructure.

Disclosure Statement

The authors declare that there are no potential conflicts of interest affecting the research, writing, or publication of this article. All data and information used in this study have been presented transparently and objectively for scientific purposes.

Data Availability Statement

Data can be obtained by connecting to the corresponding author at the email address listed in this article.

References

Abdulkareem, A. K. (2021). Does trust in e-government influence the performance of e-government ? An integration of information system success model and public value theory. https://doi.org/10.1108/TG-01-2021-0001

Abdulkareem, A. K. (2024). E-Government in Nigeria: Can generative AI serve as a tool for civic engagement? Pub. Governance, Admin. & Fin. L. Rev., 9, 75. https://doi.org/DOI: 10.53116/pgaflr.7068

AbdulKareem, A. K., & Oladimeji, K. A. (2024). Cultivating the digital citizen: trust, digital literacy and e-government adoption. Transforming Government: People, Process and Policy, 18(2), 270–286. https://doi.org/10.1108/TG-11-2023-0196

Abdulkareem, A. K., & Ramli, R. M. (2021). Evaluating the performance of e-government: Does citizens' access to ICT matter? Pertanika Journal of Social Sciences and Humanities, 29(3), 1507–1534. https://doi.org/10.47836/pjssh.29.3.03

Abdurahman, S., & Kabanda, S. (2024). Factors influencing the design and implementation of accessible e-Government services in South Africa. The Electronic Journal of Information Systems in Developing Countries, 90(4), e12317. https://doi.org/DOI: 10.1002/isd2.12317 RESEARCH

Achmad, M., Patu, M., & Ashariana, A. (2021). on the Quality of Electronic Identity Card Public Service in Indonesia. https://doi.org/https://doi.org/10.31297/hkju.21.2.3

Adam, I. O., & Alhassan, M. D. (2021). The linkages between ICT access, e-government and government effectiveness and its effect on corruption. International Journal of Technology, Policy and Management, 21(4), 344–362. https://doi.org/10.1504/IJTPM.2021.119703

Al-Sakran, H. O., & Alsudairi, M. A. (2021). Usability and accessibility assessment of Saudi Arabia mobile e-government websites. IEEE Access, 9, 48254–48275. https://doi.org/10.1109/ACCESS.2021.3068917

Ameen, A. K., Kadir, D. H., Abdullah, D. A., Maolood, I. Y., & Khidir, H. A. (2020). Assessing E-Government Effectiveness : A Structural Equation Modeling Approach. 52–60. https://doi.org/10.14500/aro.11601

Aritonang, D. M. (2017). The Impact of E-Government System on Public Service Quality in Indonesia. European Scientific Journal, ESJ, 13(35), 99. https://doi.org/10.19044/esj.2017.v13n35p99

Avianto, B. N., Ismowati, M., & Amelia, N. (2022). Implementation E-Government in supporting of online-based Service Quality and Accessibility. Journal Research of Social Science, Economics, and Management, 2(5), 729–742. https://doi.org/DOI : 10.36418/jrssem.v2i05.317

Balaji, K. (2025). E-Government and E-Governance: Driving Digital Transformation in Public Administration. Public Governance Practices in the Age of AI, 23–44. https://doi.org/DOI: 10.4018/979-8-3693-9286-7.ch002

Bertot, J., Estevez, E., & Janowski, T. (2016). Universal and contextualized public services: Digital public service innovation framework. Government Information Quarterly, 33(2), 211–222. https://doi.org/10.1016/j.giq.2016.05.004

Chetty, K., Qigui, L., Gcora, N., Josie, J., Wenwei, L., & Fang, C. (2018). Bridging the digital divide: measuring digital literacy. Economics, 12(1). https://doi.org/10.5018/economics-ejournal.ja.2018-23

Erniaty, E., & Harun, H. (2020). Understanding the impacts of NPM and proposed solutions to the healthcare system reforms in Indonesia: the case of BPJS. Health Policy and Planning, 35(3), 346–353. https://doi.org/10.1093/heapol/czz165

Espinosa, V. I., & Pino, A. (2025). E-Government as a Development Strategy: The Case of Estonia. International Journal of Public Administration, 48(2), 86–99. https://doi.org/10.1080/01900692.2024.2316128

Goloshchapova, T., Yamashev, V., Skornichenko, N., & Strielkowski, W. (2023). E-Government as a key to the economic prosperity and sustainable development in the Post-Covid Era. Economies, 11(4), 112. https://doi.org/https://doi.org/10.3390/economies 11040112

Hendri Wijaya, J. (2023). E-Government in Indonesia: Policy Review and Implementation of Jokowi's Government. TheJournalish: Social and Government, 4(3), 302–309. https://doi.org/10.55314/tsg.v4i3.563

Holton, E. F., & Burnett, M. F. (2005). The basics of quantitative research. Research in Organizations: Foundations and Methods of Inquiry, 29–44.

Isabella, I., Agustian, E., Baharuddin, T., & Ibrahim, A. H. H. (2025). Bridging e-government with digital literacy: A literature review. Journal of Governance and Regulation, 14(1, special issue), 361–371. https://doi.org/10.22495/jgrv14i1siart12

Karunia, R. L., Budiaji, R., Suzana, R., Dewi, K. S., & Prasetyo, J. H. (2023). Analysis of the Factors that Affect the Implementation of E-Government in Indonesia. International Journal of Membrane Science and Technology, 10(3). https://doi.org/https://doi.org/10.15379/ijmst.v10i3.1216

Kuswati, Y., Hartati, T., & Kusmayadi, D. (2022). Implementation of E-Government-Based Policies in Improving Public Service Satisfaction in the Majalengka Regency Local Government. International Journal of Social Science and Business, 6(3), 385–394. https://doi.org/10.23887/ijssb.v6i3.44831

Li, X., & Wang, Y. (2024). Deep Learning-Enhanced Adaptive Interface for Improved Accessibility in E-Government Platforms. 2024 6th International Conference on Frontier Technologies of Information and Computer, ICFTIC 2024, 1692–1695. https://doi.org/10.1109/ICFTIC64248.2024.10912984

Mensah, I. K., & Mwakapesa, D. S. (2025). The impact of e-government information quality (EGIQ) dimensions on the adoption of electronic government services. Information Development, 41(2), 265–284. https://doi.org/https://doi.org/10.1177/02666669231155164

Mustafa, G., Rafiq, W., Jhamat, N., Arshad, Z., & Rana, F. A. (2025). Blockchain-based governance models in e-government: a comprehensive framework for legal, technical, ethical and security considerations. International Journal of Law and Management, 67(1), 37–55. https://doi.org/https://doi.org/10.1108/IJLMA-08-2023-0172

Nimer, K., Uyar, A., Kuzey, C., Schneider, F., Nimer, K., Uyar, A., Kuzey, C., & E-, F. S. (2022). Cogent Economics & Finance E-government , education quality , internet access in schools , and tax evasion in schools , and tax evasion. Cogent Economics & Finance, 10(1). https://doi.org/10.1080/23322039.2022.2044587

Nkgapele, S. M., & Mokgolobotho, R. M. (2024). Developing Transformational Strategies to Improve the Accessibility of E-Governmental Services in South African Local Government. International Journal of Law, Social Science, and Humanities, 1(2), 56–58. https://doi.org/10.70193/ijlsh.v1i2.147

Omweri, F. S. (2024). A Systematic Literature Review of E-Government Implementation in Developing Countries: Examining Urban-Rural Disparities, Institutional Capacity, and Socio-Cultural Factors in the Context of Local Governance and Progress towards SDG 16.6. International Journal of Research and Innovation in Social Science, 8(8), 1173–1199. https://doi.org/10.47772/IJRISS.2024.808088

Owusu, A., Akpe-Doe, C. E., & Taana, I. H. (2022). Assessing the effectiveness of e-government services in Ghana: A case of the registrar general's department. International Journal of Electronic Government Research, 18(1), 1–23. https://doi.org/10.4018/IJEGR.289827

Paskaleva, K., & Cooper, I. (2018). Open innovation and the evaluation of internet-enabled public services in smart cities. Technovation, 78, 4–14. https://doi.org/10.1016/j.technovation.2018.07.003

Prayitno, A. (2023). Technological innovation in public administration transformation: Case study of e-government implementation in Indonesia. Journal of Governance, 8(4), 628–642. https://doi.org/http://dx.doi.org/10.31506/jog.v8i4.23017

Rasyid, A., & Alfina, I. (2017). E-Service Quality Evaluation on E-Government Website: Case Study BPJS Kesehatan Indonesia. Journal of Physics: Conference Series, 801, 012036. https://doi.org/10.1088/1742-6596/801/1/012036

Sabani, A. (2021). Investigating the influence of transparency on the adoption of e-Government in Indonesia. Journal of Science and Technology Policy Management, 12(2), 236–255. https://doi.org/https://doi.org/10.1108/JSTPM-03-2020-0046

Temitayo Oluwaseun Jejeniwa, Noluthando Zamanjomane Mhlongo, & Titilola Olaide Jejeniwa. (2024). Conceptualizing E-Government Initiatives: Lessons Learned From Africa-Us Collaborations in Digital Governance. International Journal of Applied Research in Social Sciences, 6(4), 759–769. https://doi.org/10.51594/ijarss.v6i4.1066

Terrance, M. T. (2023). Assessing the e-readiness of e-government Implementation in South African Municipalities. Journal of African Films and Diaspora Studies, 6(4), 135–156. https://doi.org/10.31920/2516-2713/2023/6n4a7

Tiika, B. J., Tang, Z., Azaare, J., Dagadu, J. C., & Otoo, S. N. A. (2024). Evaluating E-Government Development among Africa Union Member States: An Analysis of the Impact of E-Government on Public Administration and Governance in Ghana. Sustainability (Switzerland), 16(3). https://doi.org/10.3390/su16031333

Valtolina, S., & Fratus, D. (2022). Local Government Websites Accessibility: Evaluation and Finding from Italy. Digital Government: Research and Practice, 3(3). https://doi.org/10.1145/3528380

Wahanisa, R., Mukminto, E., Damayanti, R., & Muhtada, D. (2021). The Utilization of E-Government Public Service for Improving Public Capability and Accessibility During the Covid-19 Pandemic. Proceedings of the International Conference on Environmental and Energy Policy (ICEEP 2021), 583(Iceep), 184–187. https://doi.org/10.2991/assehr.k.211014.039

Wahyu Sulistya, A. Q., Bastian Sulistiyo, B., Aditya, F., Aritonang, I. D., Amos Simangunsong, S., Shihab, M. R., & Ranti, B. (2019). A Case Study of Indonesian Government Digital Transformation: Improving Public Service Quality through E-government Implementation. 2019 5th International Conference on Science and Technology (ICST), 1–6. https://doi.org/10.1109/ICST47872.2019.9166234

Widiani, E., Kusuma, I. G. A. E. T., & Widnyana, I. W. (2022). Building BPJS Image, Public Trust and Intention to Use JKN Mobile Services During the Covid Pandemic. The Asian Journal of Technology Management (AJTM), 15(3), 187–209. https://doi.org/10.12695/ajtm.2022.15.3.1

Younus, M., Purnomo, E. P., Nurmandi, A., Mutiarin, D., Manaf, H. A., Mumtaz, F., & Khairunnisa, T. (2025). Analyzing the trend of government support for cloud computing usage in e-government architecture. Journal of Cloud Computing, 14(1), 14. https://doi.org/https://doi.org/10.1186/s13677-025-00735-y

Zeebaree, M., & Aqel, M. (2021). A weight-analysis technique of existing research on e-government implementation challenges in developing countries. Journal of Optimization in Industrial Engineering, 14(1), 159–176. https://doi.org/10.22094/JOIE.2020.677842