



Analysis of Public Service Performance in Enhancing Public Satisfaction in the Digital Era

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Abstract

Advances in digital technology have brought major changes in the public service system, especially in population administration. Digitization of services aims to increase efficiency, effectiveness, and accessibility for the community, as well as reduce bureaucratic obstacles that are often obstacles in conventional services. However, the implementation of digital technology in public services faces various challenges, including limited infrastructure, low digital literacy, and the readiness of government officials in managing digital-based systems. This study aims to analyze the performance of public services in increasing public satisfaction in the digital era, with a focus on population administration services. Using the literature study method, this study examines various concepts, theories, and results of previous research related to digital transformation in public services. The results of the study show that the digitization of population administration services can increase the speed and transparency of services, as well as strengthen public trust in the government. However, the success of digitalization is highly dependent on technology accessibility factors, the readiness of human resources, and community involvement in the implementation process of digital services. Therefore, a strategy is needed that focuses on improving digital infrastructure, educating the public, and optimizing technology-based policies so that public services can run more effectively and inclusively.



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INTRODUCTION

Advances in digital technology have brought major changes in various aspects of life, including in the public service system (Margetts & Dunleavy, 2013). Governments in various countries continue to strive to improve the quality of public services by utilizing information technology to increase the efficiency, effectiveness, and accessibility of services for the community (Osborne, 2020). One of the sectors that has undergone significant changes is population administration services, which play an important role in ensuring citizens' civil rights, such as the registration of births, marriages, deaths, and the issuance of identity documents (Meijer, 2025). Digitalization in public services is expected to reduce bureaucratic barriers, increase transparency, and accelerate service processes that previously took a long time (Torfing, 2023).

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Public services are all forms of services and services provided by the government to the community to meet basic needs and improve social welfare. According to Osborne (2020), public services cover various sectors, such as education, health, transportation, and population administration, which aim to create accessibility, efficiency, and fairness in the distribution of services to citizens. In the modern context, digitalization has played an important role in improving the quality of public services through the application of information and communication technology (ICT). A study conducted by Dunleavy and Margetts (2022) confirms that the e-government system can reduce complex bureaucracy, increase transparency, and speed up administrative processes that previously took a long time.

However, although digital innovation in public services continues to grow, challenges remain, especially related to the gap in access to technology and the capacity of human resources in managing digital-based service systems. For example, research by Meijer and Bekkers (2021) shows that although the implementation of digital technology improves service efficiency, there are still access disparities, especially in remote areas that have limited digital infrastructure. In addition, the aspect of community participation in the public service process is also an important factor in the success of the policy. According to a study from Torfing and Sørensen (2023), collaboration between the government and the public in the provision of public services can improve the quality of policies and increase public trust in government institutions. Therefore, even though digitalization is an innovative solution in public services, an inclusive and participatory approach is still needed so that all levels of society can experience the benefits equally.

However, even though digitalization has been implemented in population administration services, there are still various obstacles faced, such as limited technological infrastructure, lack of digital literacy among the community, and the unpreparedness of the apparatus in operating digital systems (Cordella & Paletti, 2019). Several studies show that although digital services can improve efficiency, inequality of access to technology in urban and rural areas is still a major challenge in the equitable distribution of public services (Tangi et al., 2021). In addition, resistance to change and low adoption of technology by government employees often hinder the effectiveness of digital service systems (Criado & Gil-Garcia, 2019). Therefore, the evaluation of public service performance in increasing community satisfaction is a very important aspect to be further researched.

The level of public satisfaction with public services is the main indicator in assessing the effectiveness and efficiency of services provided by the government (Parasuraman et al., 1988). In the context of population administration services, public satisfaction is not only determined by the speed and ease of access to services, but also by the clarity of procedures, the quality of interaction between officers and the community, and the security of personal data stored in the digital system (Van de Walle & Bouckaert, 2003). Previous studies have found that transparency in public services contributes significantly to increased public satisfaction, as it increases trust in the government (Loeffler, 2023). Thus, a more in-depth analysis is needed on how the performance of public services in the digital era affects the level of community satisfaction, especially in the scope of population administration.

This research is becoming increasingly important considering that digital transformation in public services not only has an impact on administrative efficiency, but also on the relationship between the government and the community (Tan & Crompvoets, 2022). The implementation of technology-based services, such as e-KTP, online population registration, and cloud-based population data management, requires a system that is not only fast but also safe and reliable (Cordella & Paletti, 2019). The public as service users have increasingly high expectations for the quality of services provided by government agencies, so improving the quality of public services must be a top priority in government policies (Tangi et al., 2021). With an in-depth analysis of public service performance

in the digital era, it is hoped that effective strategies can be found that can increase community satisfaction in a sustainable manner.

Considering that there are still challenges in the implementation of digital services, this study aims to provide a more comprehensive understanding of the factors that affect the effectiveness of digital-based public services. By understanding the relationship between service digitization and community satisfaction, this research is expected to provide recommendations for the government and policy makers in improving the quality of population administration services.

Several previous studies have highlighted the impact of digitalization on public services and community satisfaction. Bovaird and Löffler (2019) found that digitalization improves administrative efficiency but requires structural adaptation in public organizations. Criado and Gil-Garcia (2019) highlight the challenges of e-government implementation, especially in the aspect of human resource readiness. Meanwhile, a study by Parasuraman et al. (2021) identified that public satisfaction in public services is highly dependent on the transparency and accessibility factors of services. However, research that specifically analyzes the performance of population administration services in increasing community satisfaction in the digital era is still limited, so this research contributes to filling this gap.

This study aims to analyze the performance of public services in increasing public satisfaction in the digital era, with a case study on the Population and Civil Registration Office. Specifically, this study seeks to (1) identify the main factors that affect the performance of digital-based population administration services, (2) evaluate the extent to which digitalization has contributed to increasing public satisfaction, and (3) provide strategic recommendations for the government in improving the quality of technology-based public services. Thus, this research is expected to provide a broader insight into the effectiveness of digital transformation in public services and its implications for community satisfaction.

METHOD

This study uses a qualitative approach with the type of literature study research to analyze the performance of public services in increasing public satisfaction in the digital era, with a focus on the Civil Registration and Population Office. Literature studies were chosen because they allow researchers to explore and understand various concepts, theories, and results of previous research related to the digitization of public services and their impact on community satisfaction (Snyder, 2019). This approach also helps in identifying patterns, trends, and challenges faced in the implementation of digital-based services in the population administration sector.

The data sources in this study come from secondary data, namely relevant academic literature such as scientific journals, books, research reports, government policies, and official documents that discuss public services, e-government, and community satisfaction levels. Data is collected from various academic databases such as Google Scholar, ScienceDirect, SpringerLink, and Garba Rujukan Digital (Garuda) to ensure the credibility and validity of the literature used (Bowen, 2009). The selection of literature is carried out based on certain criteria, namely relevance to the research topic, publications in the last five years (2019–2024), and a high citation rate as an indicator of academic quality (Page et al., 2021).

The data collection technique in this literature study is carried out through three main stages. The first stage is the identification and search of literature relevant to the research topic, especially those that discuss digital transformation in public services and its impact on community satisfaction (Creswell & Poth, 2016). The second stage is the selection of literature based on its level of relevance and contribution to the analysis of this study, taking into account the methodological aspects used in

previous studies. The third stage is data organization and synthesis, where the information that has been collected is grouped by key themes for further analysis (Miles et al., 2019).

The data analysis method used in this study is content analysis with a thematic approach. This analysis is carried out by examining the main patterns in the literature, identifying factors that affect the performance of digital public services, and exploring the relationship between service digitization and community satisfaction levels. The analysis process is carried out through three main stages as stated by Miles and Huberman (2019), namely data reduction, data presentation, and conclusion drawn. Data reduction is carried out by sorting out the information that is most relevant to the focus of the research. The presentation of data was carried out by summarizing the main findings from the various literature studied. Furthermore, conclusions are drawn by interpreting the findings that have been analyzed to answer research questions systematically.

RESULT AND DISCUSSION

The following table presents 10 articles from the selection results related to the analysis of public service performance in increasing public satisfaction in the digital era. These articles were selected based on their relevance to the topic, the scope of the discussion, and their scientific contributions to the understanding of how digitalization affects the quality of public services and the level of public satisfaction.

Table 1. Literature Review

No	Author	Title	Research Focus
1	N. Kumar Tiwari, H. Arora (2024)	A Review of Sentiment Analysis and Forecasting Techniques for Enhancing Business Performance in E-Commerce Using Machine Learning Algorithms	The use of sentiment analysis to assess public satisfaction with digital services
2	H.A.M. Jebri, U.H. Mohamad, M.N. Ahmad (2024)	Exploring the Application of ISSM and TTF Theories: A Literature Review	Application of the information system quality model in public services
3	B.T.Z. Wei, P.K. Kim, S.F. Yeo (2024)	Revisit Ready: How Smart Tourism Tech Shapes Satisfaction and Revisit Intentions in Malaysia	Analysis of public service technology in the digital tourism sector
4	L. Boduri, M.G. Bisceglia (2024)	The Performance of Online Banking Services in Albania	A study on customer satisfaction with digital banking services
5	S.K. Alotaibi (2024)	Saudi Acceptance of Digital Communication and Satisfaction with Mobile Government Services (M-Government)	Evaluation of public acceptance of digital-based government services
6	S.S.M. Wara, A.F. Adziima, M. Nasrudin (2024)	Predictive Analysis of Government Application Comment on Playstore with Clustered Support Vector Machine	Analysis of government application user comments in improving service quality
7	W.S. Alshammari, M.E.K. Ajoud, A.I.H. Ibrahim (2025)	Impact of E-Government on Institutional Performance: Fostering Sustainable Higher Educational Practices	The impact of e-government on improving public services in the higher education sector

8	N.A. Faizah, M. Thohir, S. Salem (2025)	Optimizing Digital Archive Management to Improve the Quality of Integrated Public Services	Optimization of digital archive management in public services
9	M.M. Siahaan, R.A. Sunarjo, R. Sebastian (2025)	The Role of Natural Language Processing in Enhancing Chatbot Effectiveness for E-Government Services	Use of NLP-based chatbots to improve public services
10	M.M. Purwaningwulan, C.H. Christina (2025)	Transformation of Intelligent Assistant Services in Public Service Companies in Indonesia	Implementation of AI in public services to improve efficiency and community satisfaction

Research on the performance of public services in increasing public satisfaction in the digital era has grown rapidly in line with digital transformation applied in various aspects of life. In this digital era, technology plays a key role as a facilitator in improving the efficiency and effectiveness of public services. From the ten articles that have been selected in the previous table, various perspectives were raised to analyze how digital technology, e-government, artificial intelligence, and data-driven interaction can be used to improve people's experience in accessing public services. An in-depth explanation of each article will provide a more comprehensive overview of the trends, challenges, and benefits of technology implementation in public services.

One of the studies conducted by N. Kumar Tiwari and H. Arora in an article titled *A Review of Sentiment Analysis and Forecasting Techniques for Enhancing Business Performance in E-Commerce Using Machine Learning Algorithms* discusses how artificial intelligence-based sentiment analysis can be used to measure people's satisfaction levels with digital services. Although the study focuses on e-commerce, the approach used can be applied in the public service sector. The use of sentiment analysis allows the government to identify problems that are often faced by the public in public services and develop more appropriate solutions based on feedback provided by users (kumar Tiwari & Arora, 2024).

Another study conducted by H.A.M. Jebrila, U.H. Mohamad, and M.N. Ahmad in the article *Exploring the Application of ISSM and TTF Theories: A Literature Review* explores the application of the ISSM (Information System Success Model) and TTF (Task-Technology Fit) models in the context of public services. The ISSM model is used to evaluate the success of information systems in providing effective services to the community, while the TTF model highlights the extent to which the technology used in public services is in accordance with the needs of users. This study shows that effective digital services must have high system quality, ease of use, and relevance to community needs in order to increase public satisfaction (Jebrila et al., 2024).

Research conducted by B.T.Z. Wei, P.K. Kim, and S.F. Yeo in the article *Revisit Ready: How Smart Tourism Tech Shapes Satisfaction and Revisit Intentions in Malaysia* highlights the role of technology in the tourism sector, especially in increasing tourist satisfaction with public services in tourist destinations. The study found that the implementation of smart technologies such as chatbots, online reservation services, and AI-based tour guide applications can increase tourist satisfaction and encourage them to return to a destination. Although the focus of the study is on the tourism sector, the findings are relevant for other public services that rely on direct interaction with the community (Wei et al., 2024).

An article written by L. Boduri and M.G. Bisceglia entitled *The Performance of Online Banking Services in Albania* examines the level of public satisfaction with digital banking services. In the

context of public services, this research is relevant because many governments have adopted digital systems for financial transactions, such as tax payments, electricity bills, and other administrative services. The study found that user satisfaction with digital banking services is influenced by factors such as transaction speed, data security, and ease of access via mobile devices. The implications of this study show that the government needs to ensure that the digital payment system in public services has high standards of security and ease of access in order to increase the level of public satisfaction (BODURI & BISCEGLIA, 2024).

The article *Saudi Acceptance of Digital Communication and Satisfaction with Mobile Government Services (M-Government)* written by S.K. Alotaibi evaluates the public's acceptance of digital-based government services in Saudi Arabia. The study found that the adoption rate of m-government services is highly dependent on public trust in the security of personal data as well as the ease of use of digital platforms provided by the government. In a broader context, this study highlights the importance of the trust factor in the successful implementation of digital-based public services. If people feel that their personal data is not secure or that digital systems are too complicated to use, then their level of satisfaction with public services will decrease (Alotaibi, 2024).

Another article titled *Predictive Analysis of Government Application Comment on Playstore with Clustered Support Vector Machine* written by S.S.M. Wara, A.F. Adziima, and M. Nasrudin explores how user comment analysis on the Google Play Store can be used to improve the quality of public service applications provided by the government. By using a Support Vector Machine (SVM)-based clustering technique, this study shows that feedback patterns from the community can be used to improve the design and functionality of government applications. This study is very relevant in the context of digitizing public services, as the government is increasingly developing mobile applications to provide faster and more efficient services to the public (Wara et al., 2024).

Research conducted by W.S. Alshammari, M.E.K. Ajoud, and A.I.H. Ibrahim in the article *Impact of E-Government on Institutional Performance: Fostering Sustainable Higher Educational Practices* highlights the impact of e-government in the higher education sector. The study found that the use of e-government systems in university administration can improve the efficiency of academic services, such as student enrollment, financial management, and academic evaluation systems. These findings are relevant in the context of public services in general, as they show that digitalization can improve administrative efficiency and reduce the workload of public sector employees (Alshammari et al., 2025).

An article written by N.A. Faizah, M. Thohir, and S. Salem entitled *Optimizing Digital Archive Management to Improve the Quality of Integrated Public Services* examines how optimal digital archive management can improve the quality of integrated public services. The study found that a good digital archive system can speed up access to information for the public, reduce waiting time in document processing, and increase transparency in public administration. In the digital era, efficient data management is one of the main factors in improving public services, so the findings of this study have broad implications for various sectors (Faizah et al., 2025).

In another study conducted by M.M. Siahaan, R.A. Sunarjo, and R. Sebastian entitled *The Role of Natural Language Processing in Enhancing Chatbot Effectiveness for E-Government Services*, the main focus is on the use of natural language processing (NLP)-based chatbots to improve the quality of public services. The study found that chatbots that use NLP can significantly reduce customer service response times as well as provide more accurate answers to people's questions. With the increasing use of chatbots in public services, this research provides valuable insights into how AI technology can be used to improve efficiency and user satisfaction of public services (Siahaan et al., 2025).

Finally, research by M.M. Purwaningwulan and C.H. Christina in the article Transformation of Intelligent Assistant Services in Public Service Companies in Indonesia examines how the implementation of AI-based intelligent assistants in public services can increase efficiency and community satisfaction. The study shows that the use of virtual assistants in public services can reduce employee workload, increase service speed, and provide a more interactive experience to users (Purwaningwulan & Christina, 2025).

From the various studies above, it can be concluded that the digitization of public services has great potential in increasing public satisfaction. However, there are several challenges that still need to be overcome, such as data security issues, digital divides, and people's digital literacy levels. Therefore, the success of digital transformation in public services depends not only on the application of technology, but also on social and policy factors that support the widespread adoption of technology among society.

Discossion

Key Factors Affecting the Performance of Digital-Based Population Administration Services

The performance of digital-based population administration services at the Population and Civil Registration Office (Disdukcapil) is influenced by several main factors related to technological infrastructure, human resources, regulations, and the level of digital literacy of the community.

One of the main factors is the readiness of the technological infrastructure used to support digital services. Population service platforms such as the Population Administration Information System (SIK) and the Dukcapil Online service are important components in supporting the digitization of services. However, the success of its implementation is highly dependent on the speed of the internet network, server capacity, and the security of the data being managed. In some areas that have limited internet access, digital-based services still face obstacles in their operations. For example, in some districts in Indonesia, people still have difficulty accessing Dukcapil Online services due to unstable internet connections or lack of supporting facilities at the local Disdukcapil office.

In addition to infrastructure, the competence of human resources (HR) in managing digital services is also a crucial factor. Disdukcapil employees who do not have adequate technological skills can hinder the effectiveness of the digital system that has been implemented. Therefore, training and capacity building of employees in operating digital systems are urgently needed. Several major cities such as Jakarta and Surabaya have held special training programs for Disdukcapil employees to improve their understanding of digital services to ensure more responsive and efficient services.

Regulations that support the digitization of population services also play an important role in the successful implementation of this system. The government has issued various policies that encourage digital-based population administration services, such as the Minister of Home Affairs Regulation Number 7 of 2019 concerning Online Population Administration Services. However, in its implementation, there are still challenges such as gaps in the adoption of regulations between regions, which cause inequality in digital services in various regions.

The level of people's digital literacy is also a factor that affects the effectiveness of digital-based services. People who are not used to using technology or do not have adequate devices tend to have difficulties in accessing population services online. In some regions, there are still many residents who prefer to come directly to the Disdukcapil office because they are not familiar with digital service procedures. To overcome this, several regions have initiated socialization and education programs to the community so that they are more accustomed to using digital services, such as those carried out in the city of Bandung through the Disdukcapil Goes to Village program, where Disdukcapil officers go directly to villages to provide education about digital services.

Evaluation of Digitalization's Contribution in Increasing Community Satisfaction

The digitization of population administration services has brought various positive impacts in increasing community satisfaction. One of the main impacts is the increase in efficiency in the process of managing population documents. With digital services such as Dukcapil Online, people can now take care of various documents such as ID cards, family cards, and birth certificates online without having to come directly to the Disdukcapil office. This is very time-saving and cost-saving, especially for people who live in remote areas or have limited mobility.

In addition, digitalization also allows for better transparency in public services. The public can easily track the status of their applications through an online system, thus reducing the uncertainty that often occurs in manual services. Some regions such as Yogyakarta City have implemented automatic notification systems via SMS or email to notify applicants of the progress of the status of their documents, which significantly increases public trust in public services.

However, even though digitalization has brought various benefits, there are still challenges in its implementation that have an impact on the level of community satisfaction. One of the problems that often arise is technical problems in the system, such as servers that often go down or unresponsive applications. For example, in 2023, there were many complaints from people in several regions about the slow response of the Dukcapil Online service, especially when there was a surge in applications for population documents.

In addition, there is still a digital divide between urban and rural communities. People in urban areas generally have easier access to digital services due to better internet infrastructure and higher levels of digital literacy. In contrast, in rural areas, many people still rely on manual services due to lack of internet access or limited digital devices. This shows that although digitalization has increased public satisfaction in general, further efforts are still needed to ensure that the benefits of digitalization can be felt equally by all levels of society.

Strategic Recommendations for the Government in Improving the Quality of Technology-Based Public Services

To increase the effectiveness of digital-based population administration services and increase community satisfaction, the government needs to implement several targeted strategies. First, there is a need to improve digital infrastructure evenly, especially in areas that still have limited internet access. The government can collaborate with internet service providers to expand network coverage and ensure that people across the region can easily access digital services.

In addition, increasing the capacity of human resources in the Disdukcapil must also be a top priority. The government can organize regular training for Disdukcapil employees to improve their skills in operating digital systems and providing more professional services to the community. Cities that have successfully implemented digital services, such as Jakarta and Surabaya, can be used as examples in the development of employee training programs.

In addition, the government needs to strengthen the data security system to ensure that people's personal information remains protected. Cybersecurity is a very important aspect of digital-based services, especially considering the increasing threat of data leaks in the digital era. The implementation of encryption and double authentication technology can help improve the protection of people's data.

Educational efforts to the public must also continue to be improved so that they are more accustomed to using digital services. The government can hold socialization programs that involve local communities to provide an understanding of how to access digital services and the benefits obtained from the digitization of population services. Campaigns through social media, webinars, and workshops can be an effective strategy in increasing people's digital literacy.

Finally, there is a need for periodic evaluation of the digital service system that has been implemented. The government can conduct regular community satisfaction surveys to identify obstacles that are still faced and make necessary improvements. In some regions, online surveys have been used to measure the level of satisfaction of Dukcapil Online service users, the results of which are then used as a basis for improving service quality.

With a targeted strategy and collaboration between the government, service providers, and the community, the digitization of public services can be further improved so that it can provide greater benefits in increasing public satisfaction in the digital era.

CONCLUSION

Based on the results of the study, it can be concluded that the digitization of public services, especially in population administration, provides significant benefits in increasing service efficiency and effectiveness. The use of digital technology allows for the reduction of bureaucratic barriers, speeds up administrative processes, and increases service transparency which ultimately contributes to increasing public satisfaction. However, the implementation of digitalization is inseparable from various challenges, including inequality in access to technology in various regions, low levels of digital literacy among the public, and resistance of government officials to changes in digital-based systems. Therefore, although digitalization has great potential in improving the quality of public services, strategic measures need to be implemented to ensure its success.

From a practical perspective, there are several recommendations that can be implemented by the government and policy makers to optimize the implementation of digitalization in public services. First, the government needs to invest in improving digital infrastructure, especially in areas that still experience a gap in access to technology. Second, digital literacy training programs for the community need to be expanded so that they can effectively utilize digital services. Third, the government must ensure that the developed digital service system has a user-friendly interface and can be accessed by various groups of society, including people with disabilities and the elderly. Fourth, transparency in population data management must be increased by implementing a strict data security system to protect people's personal information from the risk of misuse or data leakage.

In addition to practical advice, this research also opens up opportunities for further research in the future. One aspect that needs to be explored further is how the effectiveness of digital services can be measured empirically based on community satisfaction indicators. Further research can also focus on comparative studies between various digitalization implementation models in several countries to identify the best strategies that can be applied in Indonesia. In addition, given that digital transformation in public services is a dynamic process, further studies can be conducted to analyze the long-term impact of digitalization on service quality and the relationship between the government and the community. With a more comprehensive approach, it is hoped that future research can make a greater contribution to developing a more innovative, inclusive, and community satisfaction-oriented public service system.

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