

To Words Inclusive E-Government: Evaluating Population Administration Services in South Banjarbaru, Indonesia

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Abstract

The study aims to analyze the effectiveness of e-Government implementation in population administration services in Banjarbaru City using the Input-Process-Output-Outcome (IPOO) model. The research is motivated by the limited number of studies explaining the relationship between digital transformation and the public's experience as service users. A qualitative approach with a case study design was employed, focusing on the South Banjarbaru District. Data were gathered through in-depth interviews with nine informants, observation, and documentation, and subsequently analyzed using the interactive model developed by Miles, Huberman, and Saldaña. The results indicated that at the input stage, the government was supported by policies, human resources, and digital infrastructure, although it still faced challenges regarding internet connectivity and public digital literacy. At the process stage, digitalization successfully simplified procedures, accelerated verification, and enhanced service transparency. The output stage was characterized by increased service efficiency, reduced queues, and easier access to population administration services. A novel finding reveals that at the outcome stage, public satisfaction remained high despite technical issues and users' limited digital proficiency. This suggests that the success of e-Government is determined more by the quality of staff interaction, services communication, and public assistance than by technological sophistication alone. The study confirms that the process dimension within the IPOO model acts as a mediator capable of compensating for weaknesses in the input dimension, thereby serving as a key factor in optimizing e-Government-based population administration services

Keywords: e-Government; service effectiveness; IPOO model; population administration services; digital transformation

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Introduction

Population administration services are an essential foundation for modern governance in Indonesia, as they are directly linked to the recognition of legal status and citizens' rights and obligations regarding access to a wide range of public services. Every Indonesian citizen is required to possess valid, official population documents such as the Electronic Resident Identity Card (e-KTP), Family Card (KK), and Birth Certificate, which serve as the state's administrative recognition of the individual's existence and provide a database for development planning and other public services (Saskia Firina Pratiwi, 2025). Under national regulations, population administration data must be dynamic, up-to-date, and integrated; this ensures it accurately reflects the actual population and remains accessible across government sectors and public service agencies. Currently, these services are managed through the Population Administration Information System (SIAM), an electronic system designed to enhance the efficiency, accuracy, and availability of population data. It has been implemented nationwide by the Ministry of Home Affairs and is utilized by Population and Civil Registration Agencies (Disdukcapil) throughout Indonesia, including in Banjarbaru City (Siti Marfu'ah, Ana Kumalasari, 2024).

Table 1: Population Data and Coverage of Document Ownership (Indonesia, 2024)

Indicator	Number / Coverage (2024)
Total registered population	±282,477,584 people (as of June 30, 2024) (disdukcapil.bandaacehkota.go.id)

e-KTP recording coverage	202,054,251 people out of 207,889,876 are required to have an ID card (dispendukcapil.acehtimurkab.go.id)
Coverage of electronic KTP ownership	Estimated >97% of registered e-KTP users (dispendukcapil.acehtimurkab.go.id)
Family Card (KK) ownership coverage	National data is facilitated through Dukcapil and BPS; generally reaches very high levels in cities/regencies (≥99%) for example, Aceh Jaya had 98.7% family card ownership in 2022. (bappeda.acehjayakab.go.id)
Birth certificate (coverage)	In some local areas it is high, e.g. Aceh Jaya reaches 99%+. (bappeda.acehjayakab.go.id)
Digital Population Identity System (IKD)	Starting to be implemented by the government as part of the Dukcapil e-Government service. (dukcapil.kemendagri.go.id)

Source: Directorate General of Civil Registration, Ministry of Home Affairs of the Republic of Indonesia & official government statistics channel

In this digital era, characterized by rapid advances in information technology, government paradigms are shifting from manual processes to e-Government, a model that leverages information and communication technology in public service delivery to foster good governance, efficiency, transparency, and civic participation (Reggi, Dawes and Gil-garcia, 2022). The concept of e-Government encompasses more than the growing use of digital tools; it also aims to accelerate service

delivery, minimize bureaucracy, and streamline citizen access. In the context of government-administered population services, e-Government digitalization is expected to alleviate bureaucratic hurdles such as long wait times, physical queues, limited-service hours, and public dissatisfaction with traditional service models (Jafar, 2024). While previous research has shown that implementing e-Government for population administration services improves service efficiency and customer satisfaction in various regions, implementation remains suboptimal in many areas due to limitations in infrastructure, human resource capacity, and public digital literacy.

Figure 1: e-KTP Ownership Data



Source: Directorate General of Population and Civil Registration, Ministry of Home Affairs, Republic of Indonesia, Clean Population Data, Semester I, 2024

The bar chart above compares the population required to have an ID card with those who currently have an e-KTP (electronic ID card) in 2024, indicating the level of performance in national population administration services. According to the data, about 202.1 million of the 207.9 million residents who are required to have an ID card

are also recorded as possessing an e-KTP. Proportionally, this result shows an e-KTP registration and ownership rate of more than 97%, suggesting that the vast majority of Indonesia's population has been integrated into the digital-based population identification system (Muhammad Salman Jabbar Sangaji, 2025). This high coverage rate demonstrates the efficacy of national population administration policies, as well as the significance of information technology in fostering centralized processes for recording, validating, and sorting population data (Sierra Aulia Shabihah, Mochammad Ryanindityo, 2025).

Furthermore, this visualization shows that despite high levels of service achievement, there remains a gap between the total number of individuals required to hold an e-KTP and those who have registered. Factors contributing to this discrepancy include considerable population mobility, limited access to services in certain locations, low digital literacy, and administrative challenges (Verbič, 2025). In the context of research on optimising e-Government-based population administration services, these visual findings provide an important empirical basis for determining that policy challenges are no longer solely about technology adaptation; rather, they focus on improving service quality, ensuring system sustainability, and fostering service inclusivity across all segments of society. Finally, these findings support the argument that maximizing e-Government in the population administration sector should prioritize service efficiency, system integration, and increased satisfaction among service users (Aristovnik et al., 2025).

This research employs e-Government theory, viewed as a tool for public administration transformation, as its primary theoretical framework. This theory posits that the adoption of information technology by government agencies has the potential to improve public service quality by increasing effectiveness, transparency, and efficiency. According to Dewi et al. (2025), the implementation of e-Government across various public administration sectors in Indonesia demonstrates “advancements in digital infrastructure and public participation, yet it still faces challenges regarding the digital divide across regions and varying levels of employee competence.” This theoretical perspective views population administration services not merely as technical procedures but as an essential component of technology-driven public transformation that adheres to good governance and public value standards (Suluh et al., 2022). Furthermore, the theory is useful because it provides a conceptual framework for analyzing how e-Government systems influence administrative performance, user experiences, and public policy outcomes.

The significance of this study is deeply linked to the challenges posed by population growth in Indonesia, which necessitates population administration service systems that are faster, more accurate, and more reliable than ever before. Banjarbaru is a rapidly growing city characterized by population expansion and high mobility, leading to an increased demand for public administrative services. Although precise local data for Banjarbaru has not yet been published on national statistical portals, general data regarding population administration services

indicates a year-on-year increase in service provision (Sethi et al., 2025). For instance, national datasets on population administration and civil registration services reveal significant annual increases in service requests across various regions, reflecting a rising demand for valid administrative documentation (Junior Hendry Wijaya, Sutoro Eko Yunanto, 2022). Globally, the implementation of e-government is considered a crucial strategy for enhancing competitiveness and public service delivery within the administrations of Indonesian cities and regencies. This suggests that improving population administration services through e-government is not merely a technological trend; rather, it is a strategic necessity for building a government that is more accountable and responsive (Gilbert Aditya, Maharani Suryaningsih Imanto, 2025).

This study makes a significant contribution to the fields of public administration and e-government development. It focuses on Banjarbaru, a city that has received less academic attention than major cities such as Pekanbaru and Malang (Junior Hendry Wijaya, Sutoro Eko Yunanto, 2022). Its novelty lies in identifying specific factors that influence service optimization at the municipal level. It draws on the latest service data, an analysis of local digitalization progress, and considerations of the area's administrative and demographic characteristics. Furthermore, by combining quantitative and qualitative methods, the study provides deeper insight into the relationship between the use of e-government applications and factors such as resident satisfaction, service processing speed, and the accuracy of document administration. The findings can serve as a reference for other city governments facing

similar challenges who seek to improve public administration services through e-government.

This study addresses several research questions that serve as the focus of the analysis: (1) the extent to which the implementation of e-Government in population administration services in Banjarbaru City has been effective; (2) the primary obstacles faced by the city government and the public in accessing e-Government-based population administration services; (3) the level of public satisfaction with e-Government-based population administration services; and (4) the factors influencing the optimization of population administration services through e-Government in Banjarbaru City. These research questions help clarify the scope of the study and provide a foundation for developing valid and measurable research instruments.

The objective of this study is explicitly formulated to address the aforementioned questions by: (1) empirically analyzing the effectiveness of e-Government implementation in population administration services in Banjarbaru City; (2) identifying the obstacles and opportunities associated with the delivery of e-Government-based population administration services; (3) measuring the level of public satisfaction with the service provided; and (4) formulating strategic recommendations to optimize e-Government-based population administration services in the future.

This study aims to make both academic and practical contributions by combining a theoretical framework, existing empirical evidence, and exemplary quantitative data to provide insights into more effective strategies

for implementing e-government within public administrative services in Banjarbaru City. Furthermore, the research provides concrete, measurable policy recommendations to help public officials improve administrative service quality in a developing digital governance landscape that requires ongoing innovation (Happy, 2020).

Population administration services are a critical function of the Indonesian state, providing formal recognition of residents' legal identities and serving as the essential foundation for the delivery of various government services. Documents such as the Electronic Resident Identity Card (e-KTP), Family Card, and civil registration certificates are critical in determining public access to healthcare, education, social services, and political participation. In today's governance context, population growth and increasing levels of public mobility demand an effective, accurate, and integrated population administration service system. As a result, utilizing information technology through e-Government has become a strategic need for public sector transformation.

The concept of e-Government can be defined as the government's use of information and communication technology to improve administrative performance, public service quality, and the transparency and accountability of governance. According to the United Nations (2022), e-Government is an important component of digital government transformation that focuses on service delivery and the production of public value. In the realm of population administration services, e-

Government can be implemented through integrated information systems that enable the government to manage population data in real-time, consistently and across sectors-examples being the e-KTP (electronic ID card) recording system and the national population database. This digitalization is also intended to speed service processes, minimize administrative burdens, and increase data accuracy and security.

The optimization of e-Government-based population administration services can be viewed through the lens of public sector digital transformation, which emphasizes that digitalization requires not only technological implementation but also changes in work processes, bureaucratic structure, and human resource capabilities. According to Skargren (2020), aligning technology, institutional context, and user capabilities is critical to e-Government success. Consequently, maximizing population services cannot be characterized solely by the availability of digital systems; rather, it must be analyzed in terms of how these technologies improve service effectiveness and provide actual, immediate access (Aristovnik et al., 2025).

Regarding public service quality, e-Government implementation leads to increased efficiency, responsiveness, and public satisfaction. Prasutra (Prasutra et al., 2024) argue that the quality of digital services is defined not only by system usability, service reliability, and processing speed, but also by data security. The high proportion of national e-KTP (electronic ID card) ownership suggests that the digitalization of population administration has been highly successful. Nonetheless, this success faces hurdles,

including a digital access gap, low digital literacy among certain sectors of the population, and regional disparities in implementation quality (Pratiwi, 2025).

In the context of local government, optimizing e-Government-based population administration services requires strong institutional support, which includes leadership commitment, a strong regulatory framework, and inter-agency coordination. According to Bannink and Dancino (2024), system integration and cross-sector policy consistency play a significant role in the success of e-Government. Therefore, population administration services should not be considered solely as a technical concern, but rather as an essential component of digital governance that needs collaboration among technological, organizational, and public policy aspects.

Figure 2: Conceptual Framework



Source: Research Results 2025

Within this conceptual framework, the optimization of e-Government-based population administration services is understood as a comprehensive effort to improve the quality of public services through digital technology, accompanied by bureaucratic reform and a focus on citizens' interests. This

concept also positions e-Government as a strategic tool for delivering effective, transparent, and sustainable population administration services. As a result, this conceptual overview provides a relevant theoretical foundation for examining the implementation and challenges of e-Government-based population administration services at the local level, particularly in Banjarbaru City.

Research Method

This research used a qualitative approach with a descriptive-analytical design. A qualitative approach was chosen because the research aims to understand in depth the process, meaning, and dynamics of implementing e-Government-based population administration services at the sub-district level, specifically in South Banjarbaru District. This approach allows researchers to explore the perceptions, experiences, and interpretations of actors directly involved in the implementation and reception of digital public services. Theoretically, qualitative research is well suited to examining public policy and service phenomena that are contextual and complex, and cannot be reduced to quantitative variables alone (Prasutra et al., 2024).

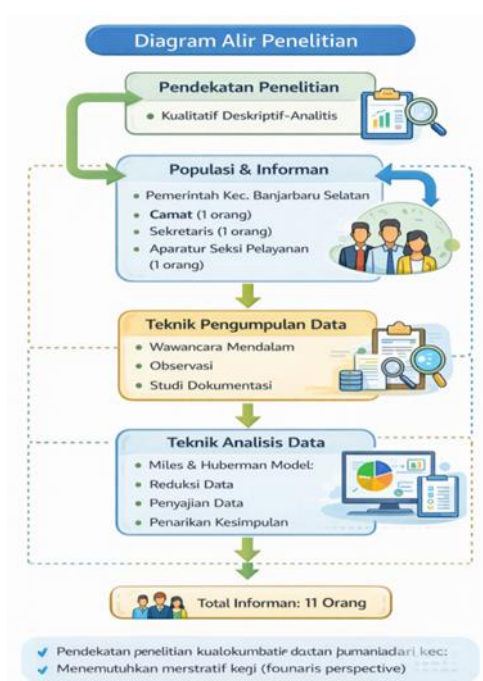
The population in this study included all actors directly and indirectly involved, as well as parties affected by the implementation of e-Government-based population administration services in South Banjarbaru District. Informants were selected using purposive sampling, deliberately chosen based on criteria relevant to the research objectives, such as

structural authority, empirical experience, and level of knowledge and involvement in digital-based population administration services.

The research informants were divided into two main groups. The first group comprised elements of the South Banjarbaru District Government, including the Head of South Banjarbaru District (1 person) as the key informant, the Secretary of South Banjarbaru District (1 person) as an informant supporting policy and administrative coordination, and the apparatus in the Service Section (1 person) as an informant implementing technical population administration services. The second group comprised elements of the South Banjarbaru District community, including community leaders (3 persons) as representatives of social perception and public control, and community members receiving e-Government-based population administration services (5 persons) as direct users of the services. The study population encompasses all stakeholders involved in the provision and use of e-Government-based population administration services in Banjarbaru City. Given the qualitative nature of this research, the study site was selected purposively, with South Banjarbaru District chosen as the case study. This selection was based on several academic considerations. First, South Banjarbaru District has one of the largest populations in Banjarbaru City, resulting in a relatively high volume of population administration service requests. Second, the district exhibits a high level of use intensity for digital population administration services, supported by service infrastructure integrated with the local government's population administration system. Third, the

district's population is relatively heterogeneous in terms of social, economic, and educational backgrounds, as well as digital literacy levels; this diversity offers the varied user experiences necessary to evaluate the effectiveness of e-Government implementation. Based on these considerations, South Banjarbaru District was selected as a representative case to illustrate the implementation of e-Government-based population administration services in Banjarbaru City, not for the purpose of statistical generalization, but rather to achieve analytic generalization, as is customary in qualitative research (Putu and Prabawati, 2024).

Figure 3: Research Flowchart



Source: Research Results 2025

Thus, the total number of informants in this study was 11 people. The composition of the informants is considered representative because it presents two main perspectives: the policy and implementation perspective from

government officials and the service user perspective from the community. The Head of South Banjarbaru Sub-district was selected as the main key informant because, as a decision-maker responsible for service policies at the sub-district level, he can provide information with strategic depth and high relevance to the research objectives.

Data collection was conducted through three main techniques: in-depth interviews, observation, and documentation studies. In-depth interviews were used to obtain comprehensive information on e-Government implementation, the obstacles encountered, and its impact on the quality of population administration services. Observations were conducted to directly observe the service process, interactions between officials and the public, and the use of information technology in daily service practices. Meanwhile, documentation studies were used to examine official documents such as regulations, standard operating procedures (SOPs), performance reports, and service achievements relevant to the research. The use of various data collection techniques was intended to achieve data triangulation to increase the validity and credibility of the research findings.

Data analysis in this study was conducted interactively and continuously, following the qualitative data analysis model of Miles, Huberman, and Saldaña. The analysis stages include data reduction, data presentation, and drawing conclusions. Data reduction was carried out by sorting, focusing, and simplifying raw data obtained from the field in line with the research focus. Data were presented in the form of descriptive narratives and analytical matrices to aid comprehension of patterns and the

relationship between concepts. The final stage was to develop conclusions, which were methodically carried out by regularly validating the field data to ensure that the results were reliable, rational, and academically accountable. This analytical approach adheres to qualitative research principles, emphasizing the process, meaning, and social context of a digital public service phenomenon.

Results and Discussion

Effectiveness of e-Government Implementation in Population Administration Services in Banjarbaru City

Based on research findings, the implementation of e-Government for population administration services in Banjarbaru City, particularly in the South Banjarbaru District, has greatly improved the effectiveness of public service delivery. This effectiveness is demonstrated by faster service delivery, easier access, more accurate administrative processes, greater information transparency, and improved perceived service quality among the public. These findings were derived from in-depth interviews with the nine informants, including the Head of South Banjarbaru District (as a key informant), the District Secretary, Service Section staff, community leaders, and residents who use the e-Government-based population administration services. The analysis was based on the concept of public service effectiveness, which holds that service success is measured not only by the achievement of organizational goals but also by

the service system's ability to meet community needs quickly, accurately, and with high quality.

Interviews with the Head of South Banjarbaru District revealed that the implementation of e-Government has resulted in fundamental changes to the civil administration service system. Prior to the implementation of digital services, most residents had to visit the district office in person to obtain information and process civil administration services or documents. This situation frequently led to long queues, lengthy wait times, and inefficient administrative processes. Since the implementation of e-Government services, most administrative steps can now be completed electronically, eliminating the need for residents to make repeated trips to the service office. The Head of South Banjarbaru District stated, "The implementation of e-Government has significantly improved the quality of civil administration services. Most service processes are now faster, as residents can submit administrative requests via the digital system before visiting the office. This has resulted in reduced long queues, improved service accuracy, and simpler monitoring of administrative processes for authorities." This statement indicates that the digitalization of services has increased bureaucratic process efficiency while providing greater convenience for service customers (Suluh et al., 2022).

These findings are supported by an interview with the Secretary of the South Banjarbaru District, who stated that the implementation of e-Government has enhanced internal administrative governance. All service

processes are digitally documented, allowing staff to coordinate and track the progress of each administrative request. According to the informant, *"Administrative coordination has improved in comparison to the past because all service processes are now digitally documented. Work distribution among staff is easier to track, and the system can be used to monitor document completion. In addition to increasing work productivity, the digital approach makes it easier to evaluate services because each stage can be tracked electronically."* This statement illustrates that e-Government implementation has an impact not only on external public services, but also on the effectiveness of administrative management within government organizations.

According to interview data from staff of the Service Section, the usage of digital technology has increased daily service productivity. Data entry, document verification, and administrative recording processes have become faster because all stages are integrated into the service information system. According to informants, *"Service delivery has become more efficient because data entry, document verification, and administrative processing can be completed faster than under the manual system. The number of citizens queuing at the service area has also reduced. However, at times, internet network disruptions or data synchronization delays still occur, causing slight service interruptions."* These statements illustrate that service efficacy has increased, yet technological impediments still exist that require changes to the information technology infrastructure (Ionescu and Licu, 2023).

Interviews with community leaders revealed a similar pattern of representation. These leaders concluded that e-Government-

based population administration services are more transparent and accessible than conventional ones. Administrative requirements, service procedures, and document status updates are easier to access, increasing public trust in government service processes. One community leader commented, *"Services today are far improved compared with those of a few years ago. The document processing procedure has been simplified, and the public is now better informed about administrative needs. However, some members of the community, particularly the elderly, continue to require assistance since they are unfamiliar with digital-based services."* These data show that service effectiveness has increased, but the success of e-Government deployment is also determined by the public's digital literacy.

The public's perspective as service users aligns with findings from government interviews. The majority of residents interviewed reported that e-Government-based population administration services delivered tangible benefits. One resident stated, *"I believe that services are now faster because some processes can be completed online. I saved time and money by not having to make repeated trips to the district office to complete my Family Card."* Another resident commented, *"The service is satisfactory, and the process is faster than before. However, when I initially started using it, I failed to understand the application workflow and had to approach service representatives for assistance."* Another commented, *"In my perspective, the service is effective because information about administrative procedures is easy to access and the staff provide clear explanations. Document processing is finished within the timeframe specified."* These

testimonials demonstrate that the public sees an improvement in service quality, despite some people continuing to struggle with digital technologies.

The results of a series of interviews clearly show that significant progress has been made in the implementation of e-government in public services in Banjarbaru. The digitization of services not only speeds up administrative procedures, but also improves transparency, accountability, and accessibility for citizens. However, the data also suggests that the effectiveness of services has not been fully maximized, as it still depends on factors such as the quality of internet connections, changes in application systems and the ability of citizens to use digital services. Overall, the implementation of e-government in Banjarbaru has significantly improved the quality of public services and established a foundation for more flexible, inclusive, and community-oriented digital public services.

Key Obstacles to Accessing e-Government-Based Population Administration Services

The study results indicate that the challenges associated with implementing e-government-based population administration services in Banjarbaru City stem not only from technical issues but also from human resource constraints, inter-organizational coordination, and the level of citizen readiness for digital services. Interviews with nine informants, including the South Banjarbaru District Head, the district secretary, service department staff, community leaders, and service users, revealed

that while digital transformation has improved the quality of public services, significant challenges remain in optimizing the delivery of population administration services. These findings align with the view that the success of e-government implementation depends heavily on organizational readiness, technical infrastructure, and the extent to which users engage with digital systems.

According to interviews with the Head of South Banjarbaru District, a key informant, the primary challenges that the government faces in delivering e-Government-based population administration services are the stability of information technology infrastructure and the readiness of human resources to adapt to changing digital service systems. According to the Head of the District, *"Although the adoption of e-Government has been smooth in general, there are still many issues that remain to be addressed. First, the internet network is not always reliable, especially during periods of heavy user traffic. Furthermore, some members of the public lack the requisite abilities to efficiently use digital services, necessitating assistance from staff. Internally, improving officials' ability to keep up with application modifications is critical to ensuring continuous service delivery."* This remark implies that the success of digital transformation is governed not only by the availability of service applications, but also by the quality of infrastructure and the competency of the officials in charge of providing those services (Li, Fan, and Nie, 2025).

These findings are reinforced by interviews with the Secretary of the South

Banjarbaru District, who highlighted the importance of organizational coordination in supporting e-Government implementation. According to the informant, the shift to digital service systems requires staff to continuously adapt to updates in applications and work procedures. The District Secretary stated, *"The challenges we faced largely relate to the process of adapting to changes in service systems. Every application update necessitates adjustments to work procedures and staff training. Furthermore, coordination with the relevant agencies particularly during system disruptions or data synchronization issues, is time-consuming, which can impact the speed of service delivery to the public."* These interview results show that inter-agency cooperation and staff capacity building are still areas that need improvement to ensure the proper implementation of digital services.

Operational problems reported by staff in the Service Section include internet network issues, application system performance, and data synchronisation. As reported by the informants, *"The common problems are internet network failures, slow response of the application system during certain times, and discrepancies in data that need re-verification."* From the general public's perspective, some users still encounter problems with account registration, document uploads, and understanding the stages of the services. Taken together, these reports indicate that technical problems remain a major barrier to the effective provision of services, despite the system's ability to speed up the process.

Public opinion identifies digital literacy and the quality of internet connectivity as the key constraints for the use of e-Government services. As pointed out by a community leader, *"Although the public in general favors digital*

services, older people and those with less knowledge about technology still face challenges using the services. In addition, the unreliable nature of internet connectivity creates doubts about the processing of submitted documents, which prompts people to go to the service offices personally." This opinion highlights the fact that the success of service digitalization is dependent not only on government readiness but also on the capability of the public to use information technology (Suhendarto, 2025).

Interviews with service users confirmed these results. For instance, one user pointed out that the challenge they faced in downloading the documents was due to a poor internet connection; eventually, after several tries, the documents were delivered, taking longer than expected. Another resident explained that, at first, they were unsure how to use the application to submit required documents until a staff member explained it. Also, other residents found that despite the user-friendliness of the application, there still needs to be a simpler user guide for all segments of the community.

Overall, research indicates that managing e-Government-based population administration services in Banjarbaru City faces several key challenges. These include limited information technology infrastructure, the need to enhance staff skills, disparities in public digital literacy, and the need for inter-agency coordination under the mayor's leadership to manage the service system. Optimizing e-Government requires building reliable digital infrastructure, enhancing human resource capacity, and implementing public education and support programs to overcome these obstacles and ensure effective, inclusive, and

sustainable access to public administration services.

Public Satisfaction Level with e-Government-Based Population Administration Services

According to research findings, public satisfaction with e-Government-based population administration services in Banjarbaru City, as assessed through a case study in the South Banjarbaru District, falls within the "good" category. This level of satisfaction is reflected in public perceptions of faster service delivery, easier access to information, clearer administrative processes, greater service transparency, and officials' responsiveness to service requests. These findings were gathered through in-depth interviews with the Head of South Banjarbaru District (a key informant), the District Secretary, officials from the Service Section, community leaders, and residents who use e-Government-based population administration services. From a public service perspective, public satisfaction is an important measure of service quality and the successful application of digital advances in government. As a result, analyzing public satisfaction is a critical component in assessing the efficiency of digital transformation in population administration services.

Interviews with the Head of the South Banjarbaru District showed that e-Government adoption had improved public perceptions of service quality. Decreased complaints about service processes, increased use of digital services, and rising public trust in government services are all indicators of public satisfaction.

The District Head added, *"Based on our assessments, the levels of public satisfaction have risen with the adoption of e-Government services. This is evidenced by a decrease in complaints about service time, an increase in citizens using digital services, and positive feedback received both directly and through complaint channels. Nonetheless, we continue to hear suggestions for reducing application procedures, particularly for the elderly and those inexperienced with digital technology."* This implies that digitalization has improved the public's service experience, although the government must continue to improve the system's usability.

The Secretary of South Banjarbaru District stated that faster, more transparent administrative processes can enhance public satisfaction. This informant indicated that digital technology alleviates frustrations often associated with conventional service methods by enabling citizens to clearly track the status of their document applications. The District Secretary stated, *"Overall, the public is pleased because services are faster, easier to monitor, and more transparent than before. Administrative processes can be traced via the system, providing the public confidence in the status of their submitted documents. Nonetheless, we continue to assess and enhance service quality by fine-tuning the system and increasing staff competency."* This affirms that public satisfaction is influenced by the certainty of information and the transparency of service processes resulting from the implementation of e-Government.

Interview results with implementing staff show that the public's reaction to digital

services is generally positive. Staff from the Service Section noted that most residents find the service more convenient because they no longer have to make many trips to the sub-district office to handle civil registration forms. According to an informant, *"The majority of the public has responded positively to the digital services. They believe that document processing is faster and avoids the need for frequent visits to the sub-district office. However, certain residents who are unfamiliar with the application will still require support from workers to ensure the service process proceeds properly."* This statement illustrates that public satisfaction depends not only on the quality of the service application, but also on staff capacity to assist the public at all stages of the service process (Prihartono, 2023).

Interviews with community leaders revealed that changes to the service system boosted residents' trust in administrative procedures by increasing transparency, clarifying document processing times, and making information on administrative requirements more accessible. One community leader stated, *"We observe that most local residents are satisfied because services have become more efficient and information regarding administrative requirements is easier to obtain. Increased transparency in service procedures and clearer development schedules have also bolstered residents' trust in government services. However, the government needs to leverage education to further promote digital public services across all community groups."* These results suggest that resident satisfaction is linked to increased trust in more transparent public service governance.

The findings are also supported by the perspectives of service users who use these services personally. Some interviewees expressed satisfaction with the increased convenience of using e-Government services. For instance, one citizen said, *"I am pleased to see that the process of issuing my ID card has become more convenient as compared to earlier times. It is much easier to find out what the requirements are, so I do not have to visit the service office several times."* Another citizen mentioned that *"I am pretty satisfied. Everything went well, and the staff explained everything clearly. Even though at first, I needed some help to understand how to go about the process, the application itself is quite friendly."* In general, these opinions indicate that the quality of service depends not only on the processing time but also on the communication between staff and citizens.

Many informants also shared their experiences of positive evaluations of the service received. One said, *"The service is good enough for me. The documents were processed within the expected time frame, and the process itself was quite simple and clear to understand. It increased my faith in public services."* Another respondent commented, *"I like the upgraded facility. Though I faced a small problem with the internet connection, the staff reacted promptly to my request, and thus I managed to do everything smoothly."* Besides, a resident added, *"The service was really great. Besides being fast, the staff did a wonderful job and explained everything clearly on each step of the process. I would like the system to develop further."* Thus, the residents' opinion proves that the quality of service greatly affects the satisfaction of the service users.

As can be deduced from the results, residents in Banjarbaru City experience high satisfaction with the administrative services based on e-Government. The increase in the level of the quality of the public service has been observed in terms of citizens' satisfaction with administrative services. It should be explained by the fact that the processes have become faster, the access to information has been facilitated, there is greater transparency in the service delivery process, timely document delivery, and responsiveness of the personnel have been achieved. However, in order to ensure that the residents could use these e-Government services, the improvements in application systems, the quality of the Internet networks, and digital literacy programs have to be implemented.

Factors Influencing the Optimization of Population Administration Services through e-Government

This study demonstrates that the enhancement of e-Government-based administrative services in Banjarbaru City is influenced by a complex interplay of factors. These include elements internal to government organizations as well as the environment of the service users. Interviews with the South Banjarbaru District Head, the district secretary, service staff, community leaders, and service users reveal that successful e-Government implementation depends on more than just the availability of information technology; it also relies on organizational commitment, human resource capabilities, the quality of digital infrastructure, inter-agency collaboration, and

public readiness to utilize digital services. These findings align with the e-Government implementation perspective, which views technology, organization, and people as interdependent elements essential for delivering effective public services.

Based on the interview conducted with the District Head of South Banjarbaru, leadership and policy support are among the main pillars of optimizing services via e-government. According to the District Head, the effectiveness of the optimization process mainly depends on the leadership's commitment, the status of information technology infrastructure, staff capability, and policy support from the authorities in the locality. In addition, collaboration with the Population and Civil Registration Agency is essential to ensure that all processes conform to existing standards. Equally important is citizens' willingness to use e-services, which is supported by improved digital literacy. All these facts suggest that optimization of services emerges from the interplay of leadership and policies along with stakeholder readiness (Afzaliza et al., 2022).

These findings were also supported by the Secretary of the South Banjarbaru District, who highlighted the importance of organizational coordination and human resource management. The official remarked, *"Clear policies are the backbone of service delivery. These policies need good coordination among work units, the availability of human resources, and accompanying infrastructure. Service completion might be delayed in the absence of good coordination, especially when data verification with other authorities is*

required." This demonstrates that the successful adoption of e-government is dependent not only on service applications but also on organizational governance capable of supporting service processes (Zehua, 2025).

For staff in the service sections, technical aspects play an important role in improving service delivery. In this regard, one interviewee said, *"From the point of view of an employee, the most important aspects are the availability of the internet network, the quality-of-service applications, and the competency of the staff in using the system. If the system works well and the employees know how to conduct their services digitally, then the service delivery is quick and administrative errors are prevented."* These findings show that the quality of digital infrastructure and staff expertise are critical for the effective and sustainable delivery of administrative services to the public.

Further, community leaders agreed that the success of digital services depends on the community's technological literacy. In this regard, one community leader stated, *"The government has to step up its game on public education about the usage of digital services. Not all people know how to use the service application, especially elderly people. Also, the quality of the internet network has to be improved so that there is no problem for the public in using the service through the internet."* This viewpoint emphasizes that digital literacy and fair access to technology are external variables that influence the success of e-Government deployment.

These findings were also supported by interviews with service users. One user said, *"I believe that an easy-to-use application and a stable internet connection are crucial to a*

comfortable service experience." Another user said, *"Service delivery would be more efficient if comprehensive information regarding document processing procedures were provided and the application's user manual were simplified."* Residents also highlighted that prompt staff responses when issues arise while using the application contribute to improved service quality.

In summary, this research highlights five key factors that significantly influence the optimisation of population administration services through e-Government in Banjarbaru City; these factors include leadership support, the quality of human resources, the presence of information technology infrastructure, coordination between agencies, and citizens' digital literacy. The interaction among these factors is believed to be crucial for providing effective, flexible, and responsive population administration services to the community. According to this research, the development of e-Government should take into account not only the technological aspect but also the organizational one and the active participation of the public in using online public services (Wu, 2025).

This study presents an in-depth evaluation of the relationship between digital service delivery and the quality of population management services, using interview results alongside theoretical knowledge of e-government and the Input-Process-Output-Outcome (IPOO) Model to assess the effectiveness of public services.

Empirical research on the efficiency of implementing e-Government reveals positive changes due to the digitalization of services. Interviews indicate that the population receives

services more promptly, has easier access to information, enjoys greater transparency in procedures, and feels more certain about the completion of documents. Within the IPOO model, these results show that input elements such as government policies, IT infrastructure, service applications, and personnel competencies helped increase the efficiency of service processes. Service delivery shifted from conventional approaches to electronic ones, enabling timelier document submissions, better-documented submissions, data verification, and tracking of application status. As a result, services became more efficient, queues were shorter, and administrative accuracy improved. Overall, these factors improved service quality for the public and increased the population's trust in digital government. This finding supports Walker, Griffiths, and Jiang (2023) on the significance of digital transformation in the public sector for public value creation.

While there are indications of improved service impact, the study also reveals significant problems in the implementation of e-government that impede the optimization of public services. The key challenges that emerged from interviews include internet connectivity instability, data synchronization between different organizations, building the capacity of the staff, and the digital literacy of specific segments of the population. Using the IPOO model, these barriers mostly occur in the form of input- and process-level issues. Issues in technical infrastructure lead to dysfunctional processes in service delivery. Similarly, poor digital skills among staff and citizens reduce the efficiency of the entire service delivery process.

These conclusions show that digital transformation can be considered not only in the context of technological innovation but also as a process of organizational change that requires proper preparation of staff, establishment of organizational governance, and formation of a digital culture. The conclusions obtained from this research agree with the United Nations E-Government Survey Report (Abdelmalak, 2025). This report highlights that the success of e-government implementation depends largely on the condition of digital infrastructure, organization, and citizens' capacity to use digital services.

Discussions on public satisfaction indicate that e-government implementation enhances the service experience compared with traditional service systems. Public satisfaction is influenced not only by the speed of document processing but also by the ease of access to information, process transparency, service delivery time, and staff behavior during interactions with service recipients. Within the IPOO framework, public satisfaction serves as an outcome indicator reflecting the success of public service implementation; this outcome logically results from more efficient, high-quality service outputs. Research findings reveal that the public perceives a shift in service delivery, moving away from rigid administrative bureaucracy towards services that are more accessible, readily available, and user-centric (citizen-centric). This supports Osborne's view that, in the digital age, the quality of public service is measured not merely by organizational efficiency but also by user experience and public satisfaction with the service received.

Research identifies five essential elements that underpin the successful optimization of e-Government-based population management services: leadership and policy support, human resource competency, information technology infrastructure, inter-agency collaboration, and public digital literacy. These five criteria are interrelated and determine the success of digital service implementation. In terms of inputs, leadership, regulations, budget, human resources, and infrastructure are the fundamental components of service delivery. The quality of the service process is determined by the coordination of work units, the use of service apps, and public assistance mechanisms. Integrating these dimensions yields outputs that are faster, more transparent, and more accurate in delivering services, which in turn leads to outcomes such as increased citizen satisfaction, increased bureaucratic efficiency, and increased citizen trust in local governments. These findings show that e-Government success cannot be described purely by technological factors; rather, it must be viewed as the product of interactions between organizational, human, and governance components.

In general, the research results show that the use of e-Government in the provision of population administration services in Banjarbaru City has developed in the direction of the modernization of public services. At the same time, ensuring continuous development in this process requires increased institutional capacity, improved digital infrastructure, stronger staff competency, and enhanced digital literacy among the population to provide equitable benefits from e-Government services. Therefore, the efficiency of the provision of

population administration services in the conditions of the implementation of e-Government initiatives will depend not only on the presence of digital technology but also on the possibility for the government to develop an ecosystem of public services that is collaborative, inclusive, adaptive, and value-driven (Stone, 2024). This strategy is a critical prerequisite for attaining effective, responsible, and long-term digital governance, in line with Indonesia's bureaucratic reform and public sector digital transformation goals.

Conclusion

The study shows that population administration services in Banjarbaru City have quickly adapted to e-Government solutions. This represents a step towards the transformation of digital governance, which increases the effectiveness and reliability of public services. Models of administrative services that used to be based on manual systems have become integrated, bringing added value through better accessibility, efficiency, accuracy, and reliability of the process. The results show that the use of information technology has increased the quality of public services without reducing the importance of government officers in assisting people in accessing these services.

This research indicated that e-Government did not reach its full potential due to a variety of internal and external factors. From the perspective of government institutions, the delivery of digital services depends on the availability of IT infrastructure, capacity building for human resources, cooperation between agencies, and policies that support digital transformation. As for the public

sector, digital literacy, the ability to use service applications, and equal internet access are key components of implementing e-Government-based population administration services. Thus, digital transformation requires more than just technological investments.

According to research, citizens' satisfaction with administrative services depends on several factors, including the quality of service delivery mechanisms, the competence of service providers, the easy availability of information, and efficiency in addressing citizens' demands. The results indicate that the use of digital technology in delivering administrative services increases citizens' trust in the government.

According to the conclusions of this study, improving public services through e-

government in Banjarbaru is a complex process that requires the combined influence of leadership, policy, technology, human resources, organizational collaboration, and citizen participation. Integrating these elements would not only increase administrative efficiency but also lay the groundwork for digital public services that generate "public value" by improving service quality, increasing accountability, and expanding community reach. E-Government projects for public services should be continually supported as a means of strengthening administrative reforms and achieving flexible, inclusive, and competitive governance in response to the needs of digital transformation in the public sector.

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