

A Digital-Based Information System to Enhance Public Service Delivery in Samsat Services across Two Indonesian Provinces

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Abstract— Samsat's digital transformation has greatly improved public service delivery in Indonesia, especially in South Sumatra and East Java. Using a mixed-method approach that combines quantitative surveys and qualitative interviews, this study evaluates the effects of digitalization on administrative efficiency and user happiness. Public trust in government agencies has increased, accessibility has improved, and service time has significantly decreased, according to the findings. Persistent difficulties were found, nevertheless, such as poor rural infrastructure, low digital literacy, and problems synchronizing data among agencies. In order to address these issues, this study suggests methods such as improving computer literacy initiatives, encouraging increased interagency cooperation, and designing user interfaces that are more inclusive. The research provides practical insights for optimizing digital public services, particularly in developing countries, and enriches the broader discourse on e-government implementation. The novelty of this study lies in its comparative analysis between two regional platforms, offering a comprehensive view of how administrative, technological, and socio-demographic factors influence digital service outcomes. The results contribute to informing policy strategies aimed at building more resilient, inclusive, and efficient public service systems in diverse governance contexts.

Keywords— Digital Service, Public Administration, Samsat, User Satisfaction, Infrastructure

I. INTRODUCTION

Since the introduction of digital technology, public service delivery norms and practices have changed dramatically on a global scale. Demands for efficiency, openness, and accessibility are putting increasing pressure on Indonesia's government sector to embrace digital. Historically, the Samsat system was used to administer motor vehicle taxes; this move has a significant impact on this system. Previously marked by handwritten documentation, long lines, and fragmented inter-agency coordination, these services are gradually shifting to integrated digital platforms (Wibowo & Pratama, 2020; Indra, 2023).

In response to administrative inefficiencies and rising public dissatisfaction, regional governments have initiated digital Samsat platforms such as e-Samsat in East Java and e-Dempo in South Sumatra. These platforms offer online tax payment, digital verification, and proof of payment issuance. They represent not only a technical upgrade but also a shift toward citizen-centric governance models. Prior studies have indicated that digital public services can reduce service time and operational costs while enhancing user trust (Gita, 2021; Hadi, 2022; Rizki & Hasyim, 2020). However, most literature focuses on single implementations or national-level evaluations, leaving a gap in understanding how regional disparities influence digital service outcomes.

Inequalities in digital literacy, infrastructure, and institutional ability among Indonesia's provinces frequently lead to uneven implementation success. According to Rahmawati et al. (2019), for instance, adoption rates are typically lower in rural areas because of a lack of internet access and digital literacy. The efficacy of otherwise well-designed digital platforms may also be considerably diminished by a lack of inter-agency data synchronization, according to Dewi (2018). These results underline how important it is to do research that evaluates contextual elements like organizational preparedness, citizen involvement, and socio-technical alignment in addition to system performance.

Globally, digital governance models in countries like South Korea and Estonia have demonstrated how centralized, adaptive, and participatory platforms can revolutionize public services (Fikry & Tanjung, 2023). However, the Indonesian context—with its vast archipelagic geography and decentralized administrative framework—poses unique challenges to standardized digital transformation (Suharto, 2022). These challenges necessitate an analytical approach that considers both technological design and local governance dynamics.

Despite the increasing popularity of e-government platforms, there remains limited research that directly compares multiple digital systems operating in different provincial contexts. The existing body of work largely addresses the technical benefits of digital systems but often neglects to evaluate systemic factors influencing their adoption and impact. As highlighted by Kartika (2019),

successful implementation requires not only robust digital infrastructure but also synchronized collaboration among tax authorities, police departments, and insurance agencies.

This study aims to fill this gap by conducting a comparative analysis of two regional Samsat platforms: e-Samsat in East Java and e-Dempo in South Sumatra. By employing a mixed-method approach—combining user surveys with in-depth interviews of stakeholders—this research evaluates administrative efficiency, user satisfaction, and operational challenges from a regional perspective. Unlike prior studies that examine single systems in isolation, this research provides a dual-case framework to understand contextual drivers and barriers to digital public service success. This aligns with previous studies highlighting the effectiveness of digital transformation in Samsat services (Gita, 2021).

The novelty of this study lies in its dual emphasis on methodological integration and regional comparison. It contributes new insights by analyzing how institutional readiness, user demographics, and technological infrastructure shape the performance of digital Samsat systems. Furthermore, the results provide useful direction for upcoming advancements in e-government projects, complementing Indonesia's more comprehensive digital plan under the Electronic-Based Government System (SPBE). Such research becomes essential for guiding policy and practice as Indonesia continues its quest for sustainable and inclusive public sector reform.

II. LITERATURE REVIEW

The evolution of digital technology has significantly influenced the way governments deliver public services, particularly in the field of vehicle tax administration. Numerous studies have emphasized that the digitization of public services leads to greater efficiency, improved transparency, and enhanced accessibility for users (Wibowo & Pratama, 2020; Hadi, 2022). In the context of Samsat services in Indonesia, several digital initiatives have been introduced to replace conventional manual processes with automated systems that are accessible through online platforms.

According to Gita (2021), the integration of digital systems in Samsat services has resulted in measurable reductions in processing times and administrative errors, contributing to higher levels of public satisfaction. Similarly, Rahmawati et al. (2019) found that the application of digital Samsat systems in both urban and rural areas led to improved compliance in tax payments, although the level of effectiveness varied depending on regional infrastructure readiness. These findings are consistent with Kartika (2019), who emphasized that leadership and infrastructure also play a crucial role in the success of digital Samsat systems.

Another important aspect discussed in previous literature is the role of user experience in determining the success of digital public service systems. Indra (2023) noted that the design and functionality of digital platforms must align with the digital literacy levels of users to ensure

high adoption rates. In regions where digital infrastructure is lacking or digital awareness is low, the benefits of such systems may not be fully realized. Handayani and Permana (2021) highlighted that service quality in digital Samsat systems is highly dependent on continuous user feedback loops and platform adaptability, factors which are still underdeveloped in several provinces.

Furthermore, Kartika (2019) emphasized that inter-agency coordination is a critical factor in the successful implementation of digital Samsat systems. Since these systems require real-time data sharing between the tax authority, the police, and insurance companies, any lack of synchronization can undermine service delivery. Dewi (2018) also added that monitoring and evaluation mechanisms must be integrated into the system to continuously improve service quality and identify technical or administrative issues promptly.

While these studies provide valuable insights into the general impact of digitalization on Samsat services, most of them focus on single implementations or localized outcomes. There is a limited number of comparative studies that evaluate the performance of different digital Samsat platforms across provinces. This gap highlights the need for research that not only examines efficiency and satisfaction outcomes but also investigates the contextual factors that influence the success of such systems.

Building upon this body of literature, the present study aims to explore the implementation of digital Samsat services in East Java (e-Samsat) and South Sumatra (e-Dempo) as a comparative case study. By doing so, it seeks to extend the theoretical and practical understanding of digital transformation in public services, identify common barriers and success factors, and offer evidence-based recommendations for broader policy adoption.

A key component of contemporary governance policies in both developed and developing nations is the digital transformation of public services. This change is especially significant for organizations like Samsat in Indonesia, which have historically relied on in-person interactions. Various studies have shown that implementing digital solutions in public tax services can lead to greater efficiency, reduced operational costs, and higher citizen satisfaction (Wibowo & Pratama, 2020; Hadi, 2022).

The integration of digital technology into Samsat services has substantially enhanced service accessibility and user engagement. Gita (2021) found that digitized Samsat platforms improve not only service speed but also administrative accuracy. This is in line with research by Rahmawati et al. (2019), who found that tax compliance rose after digital platforms were introduced in both urban and rural areas. However, the results differed depending on the sociodemographic circumstances and regional infrastructure. Moreover, user-centric factors such as ease of use and digital literacy significantly affect the success of these systems. Indra (2023) emphasized the need for adaptive user interface designs that consider local literacy levels and technology exposure. These insights are supported by Lestari (2021), who found that satisfaction

among taxpayers strongly correlates with the system's clarity and responsiveness.

Coordination between agencies is another crucial determinant of success. Kartika (2019) and Dewi (2018) noted that ineffective data exchange between police departments, tax authorities, and insurance agencies could hinder system performance. Their studies recommend unified databases and integrated data protocols to improve operational reliability and reduce redundancy.

International comparisons provide useful benchmarks. For example, Fikry and Tanjung (2023) highlight how South Korea's and Estonia's digital tax ecosystems achieved success through centralization, strong legal frameworks, and ongoing public engagement. Meanwhile, Suharto (2022) argues that Indonesia's decentralized governance structure poses challenges in standardizing digital implementation across regions. Similar to findings by Akbar and Pratama (2021), the success of digital public services in other sectors like mobile tax apps demonstrates the importance of intuitive interface design and backend system resilience, lessons that can be applied to Samsat services.

A. E-Government Maturity Models

According to Layne and Lee (2001), e-government services typically progress through four stages: cataloguing (providing information online), transaction (conducting transactions online), vertical integration (connecting different levels of government), and horizontal integration (connecting different functions within one level of government). This model illustrates that services like e-Samsat and e-Dempo can be evaluated not just by functionality but also by their degree of inter-agency integration and cross-level cooperation.

B. Digital Divide Theory

Technological disparities based on demographic, social, and geographic factors are known as the "digital divide." Deficits in digital literacy and infrastructure have a significant impact on Indonesia's equitable deployment of e-government services, claim Yusra and Putri (2020). These divides manifest strongly in rural areas, where internet connectivity is sparse and digital skills are limited, thus impeding the inclusive success of platforms like e-Dempo compared to more urbanized implementations like e-Samsat.

Thus, while digital transformation offers numerous advantages, its success is highly dependent on contextual readiness, institutional coordination, and strategies to bridge the digital divide. Furthermore, addressing the digital divide is critical for achieving equitable public service delivery. Aini et al. (2019) emphasized that integrated supply chain and coordination strategies are essential to ensure consistent performance across different administrative regions, a perspective that aligns with the necessity of unified e-government platforms.

III. METHODS

This research was designed to explore the implementation and performance of two regional Samsat

digital platforms e-Samsat in East Java and e-Dempo in South Sumatra using a comprehensive and comparative framework. The methodological approach integrates both theoretical and empirical elements to evaluate service efficiency, user satisfaction, and implementation challenges.

A. Theoretical Framework

The study draws on several theoretical perspectives relevant to digital public service systems. The information system success model (ISSM) and the technology acceptance model (TAM) offer the analytical framework for comprehending user behavior, system quality, and satisfaction. According to Davis (1989) and DeLone and McLean (2003), these theories aid in the explanation of how digital services' effective adoption is influenced by their utility, ease of use, and institutional support. Furthermore, ideas of e-government maturity models and digital governance shape the larger institutional environment, emphasizing infrastructure readiness, public involvement, and inter-agency collaboration (Layne & Lee, 2001; Janowski, 2015).

B. Research Design

The research employed a mixed-method approach to capture both quantitative and qualitative insights regarding the performance of e-Samsat and e-Dempo platforms.

1. Quantitative Component

Three hundred people participated in a structured survey, with equal numbers of respondents from the e-Dempo platform in South Sumatra and the e-Samsat platform in East Java. With a 95% confidence level and 5% margin of error, the sample size was calculated using Slovin's formula, presuming a user population of more than 10,000. Age group, degree of digital literacy, and geographic region (rural vs. urban) were the three main criteria used to stratify the random sampling technique in order to increase representativeness. This method ensured that the sample captured diverse user experiences and digital access capabilities across both provinces. The survey instrument used a five-point Likert scale to evaluate perceptions of four key variables: system usability, service speed, accessibility, and user satisfaction.

2. Qualitative Component

To complement the survey results, semi-structured interviews were conducted with 15 purposively selected stakeholders, including Samsat service officers, IT platform developers, and regional policy administrators. The selection criteria focused on individuals who were directly involved in the design, implementation, or policy coordination of the e-Samsat and e-Dempo systems. Themes like infrastructural difficulties, user education tactics, institutional collaboration, and the operational effects of digital transformation were all covered in the interviews. Through thematic coding, the qualitative data were examined, revealing recurrent problems

that aided in the interpretation of quantitative findings' tendencies. In addition to providing contextual depth, this qualitative method identified the root causes of the observed differences in platform adoption and user happiness

3. Document Review

Secondary data were collected through the review of internal evaluation reports, digital platform usage statistics, and relevant government documents. These materials were used to triangulate findings and support the interpretation of survey and interview data.

C. Research Stages

The research followed a systematic sequence consisting of:

1. Preliminary Study and Problem Identification

A literature review was conducted to understand prior research on e-government platforms in Indonesia, with special focus on digital Samsat services. This step identified research gaps and refined the objectives of this study.

2. Instrument Development and Testing

Survey and interview instruments were developed based on existing models and expert input. A pilot test was conducted to assess clarity and reliability. The survey tool's internal consistency was validated using Cronbach's Alpha.

3. Data Collection and Processing

Data collection was carried out simultaneously across both provinces. The survey data were processed using SPSS software, applying descriptive analysis and multiple linear regression to identify factors affecting user satisfaction. Interview transcripts were subjected to thematic analysis using a coding framework derived from the research questions.

4. Data Integration and Interpretation

Findings from both data streams were triangulated to form a comprehensive analysis. Quantitative patterns were interpreted in light of qualitative narratives to ensure contextual richness and analytical depth.

The integration of survey and interview data enabled a comprehensive understanding of digital platform performance. For instance, while statistical analysis revealed that users in South Sumatra reported lower satisfaction, thematic insights from interviews highlighted infrastructural gaps, limited user support, and inter-agency delays as contributing factors. In contrast, respondents in East Java benefited from more robust digital literacy campaigns and stable internet infrastructure. This mixed-methods strategy ensured that the numerical trends were interpreted not only at the surface level but also through institutional and sociotechnical lenses that reflect on-the-ground realities.

D. Ethical Considerations

The research adhered to ethical standards, including informed consent, confidentiality of participant data, and

voluntary participation. All participants were informed of the study's purpose and their right to withdraw at any stage.

E. Technological Architecture and Digital Infrastructure

The e-Samsat and e-Dempo platforms are currently web-based and connected to regional taxation, police, and insurance information systems via API. However, not all regions have adopted a scalable and secure cloud-based architecture. The use of solutions such as Google Cloud Platform (GCP) or AWS GovCloud can support service efficiency and reliability. In the future, blockchain integration can be used to store vehicle history data and tax payments immutably, while AI-based chatbots can provide interactive assistance in solving user problems in real time.

IV. RESULTS AND DISCUSSION

Drawing upon the results of the quantitative and qualitative data analysis, this study finds that the implementation of digital Samsat platforms has led to significant and measurable improvements in public service delivery across both East Java and South Sumatra. The following section presents a comprehensive discussion that integrates survey findings, interview insights, and relevant literature to critically evaluate aspects of service efficiency, user satisfaction, and system implementation challenges.

A. Improvement in Service Efficiency

One of the most prominent outcomes of digitalization is the significant reduction in administrative service time. As shown in Table 1, the average processing time for key services such as vehicle tax payments and STNK renewal decreased substantially after the implementation of e-Samsat and e-Dempo systems. Prior to digitization, vehicle tax payment required 120–180 minutes, while the digital system reduced this to just 15–30 minutes. Similarly, the issuance of proof of payment improved from 60–90 minutes to 10–20 minutes.

The implementation of digital Samsat platforms has brought measurable improvements in public service performance in both East Java and South Sumatra. Table 1 presents a comparison of average service times before and after the digitization of Samsat services, highlighting a significant reduction in administrative processes.

Table 1. Average Service Time Comparison (Before and After Digitization)

Service Type	Manual System (Minutes)	Digital System (Minutes)
Vehicle Tax Payment	120–180	15–30
STNK Renewal	90–150	20–35
Proof of Payment Issuance	60–90	10–20

This finding aligns with previous studies (Gita, 2021; Indra, 2023) that emphasized the efficiency gains

associated with digital public services. The dramatic decrease in service time, particularly for routine tasks such as vehicle tax payments and STNK renewal, indicates that automated systems can significantly alleviate administrative bottlenecks.

B. Comparative Analysis of Digital Service Adoption

A comparative study between e-Samsat in East Java and e-Dempo in South Sumatra was carried out using survey results, interviews, and secondary data in order to offer a greater understanding of the efficacy of the digital Samsat platforms. In Table 2, the comparison is displayed.

Table 2. Comparative Performance of e-Samsat and e-Dempo Platforms

Performance Indicator	East Java (e-Samsat)	South Sumatra (e-Dempo)
Average Service Time (Minutes)	15–30	20–40
User Satisfaction Rate (%)	88%	78%
Internet Accessibility (%)	92%	68%
Error Rate (%)	5%	12%
Inter-Agency Data Integration	High	Moderate
Digital Literacy Level	High	Moderate-Low

The data shows that East Java's e-Samsat outperforms South Sumatra's e-Dempo across most performance indicators. The shorter service time and higher satisfaction rate in East Java can be attributed to better internet infrastructure (92% accessibility) and higher levels of digital literacy among users. Additionally, East Java benefits from stronger inter-agency coordination, reducing the error rate in transaction processing.

Conversely, the performance of e-Dempo is hampered by lower internet accessibility (68%) and moderate to low digital literacy, particularly among rural users. Interview data also revealed persistent data mismatches and delays in inter-agency communications in South Sumatra, which increased user frustration and service error rates.

These findings align with the E-Government Maturity Model discussed earlier, suggesting that e-Samsat is approaching a higher stage of maturity (horizontal integration), while e-Dempo remains in the early transaction phase. Furthermore, the digital divide continues to create regional disparities, affecting both the adoption rate and the overall success of digital public services.

C. User Satisfaction and Perception

The study also measured user satisfaction using a five-point Likert scale, with 85% of respondents expressing a positive experience with the digital systems. As depicted ease of access was the leading factor (40%),

followed by speed of service (35%) and transparency (25%).

The interpretation of these findings suggests that users value intuitive system design and faster transaction processes. This supports Lestari (2021), who reported that user-centered design and clarity of information are major determinants of digital service success.

As shown in Figure 1, ease of access, speed of service, and transparency emerged as the primary factors influencing user satisfaction.

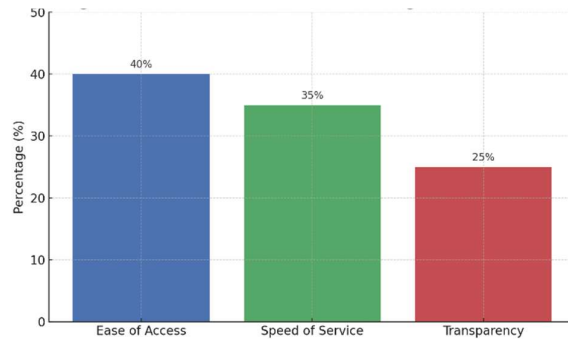


Figure 1. Distribution of Factors Influencing User Satisfaction

The growing public need for seamless service delivery is reflected in accessibility's domination as the most important factor. The results of Lestari (2021), who pointed out that user-centered design is essential to determining the success of digital government platforms, are in line with this. Furthermore, transparency's high ranking among satisfaction elements raises the possibility that digital systems could increase institutional trust, which is crucial for long-term adoption.

There are still a number of systemic issues, though. According to Rahmawati et al. (2019), service accessibility is greatly impacted by the difference in internet infrastructure between urban and rural areas. Furthermore, as noted in stakeholder interviews, interagency coordination problems continue to be a significant bottleneck. These problems highlight the need for standardized data protocols and real-time information exchange, which is in line with results of Dewi (2018) and Kartika (2019).

The study's regional comparison reveals that contextual factors, such as institutional readiness and citizen digital literacy, substantially influence the success of digital platforms. Whereas South Sumatra's user experience was limited by inadequate infrastructure, East Java's comparatively strong digital ecosystem allowed for more seamless service delivery. Instead of implementing a national policy that works for everyone, this geographical inequality emphasizes the value of customized digital solutions. To overcome low digital literacy, it is recommended to implement village-based digital literacy programs, for example through collaboration with Kominfo and local communities. This activity can be in the form of monthly training or direct mentoring by digital volunteers. In addition, collaboration

with local ISPs through the Universal Service Obligation (USO) scheme can expand internet access to blank spot areas.

It was discovered that digital literacy has a major impact on platform adoption and user happiness. Greater levels of digital proficiency were associated with greater ratings of the service's usability and reliability, according to survey data. On the other hand, users who had little prior experience with digital devices, especially those from older age groups and rural locations, reported having trouble navigating the interface and finishing online transactions on their own. The results of the interviews showed that some users needed assistance from informal service agents or younger family members in order to use the e-Samsat or e-Dempo platforms. This dependence, which often led to delays, errors, or discontent, had a substantial effect on their enjoyment. One rural South Sumatra respondent, for instance, said, "I don't understand the application, so I have to ask my child for help every time I pay taxes." The significance of creating more inclusive user interfaces and offering digital support to users with limited literacy is underscored by these stories. Without sufficient assistance or instruction, a sizable portion of the populace might not be able to take use of digital platforms.

The application interface needs to be developed with inclusive design principles, such as large font sizes, high contrast colors, and voice-guided navigation features. Interface trials based on elderly focus groups can also be implemented to obtain relevant feedback before mass launch.

D. *Additional Findings: Rural vs Urban Disparities*

Survey data indicated that users in urban centers (e.g., Surabaya, Palembang) reported a much higher level of ease and trust in using digital Samsat platforms compared to users in rural districts. In East Java, 91% of urban respondents rated their experience as "very good," while only 76% of rural respondents did. In South Sumatra, the gap was even wider, with only 60% of rural users rating the system positively.

Socio-economic factors such as education level, occupation, and income also influence the adoption of digital services. Users with higher education and formal professions adapt more quickly, while groups of farmers or fishermen show resistance due to lack of trust and familiarity with technology.

This suggests that improving internet accessibility and digital education initiatives specifically targeting rural populations is crucial to ensuring equitable access to digital public services. This rural-urban gap is consistent with research by Suryadi and Ramadhan (2021), who found that technology acceptance rates in government services are significantly influenced by socio-demographic characteristics and regional infrastructure disparities.

E. *Cross-Agency Collaboration Challenges*

Interviews with Samsat officials highlighted that while East Java has already implemented a unified data

protocol across tax offices, police departments, and insurance companies, South Sumatra is still undergoing phased integration. Officials cited budget constraints, staff training gaps, and legacy systems as the main obstacles.

This underscores the recommendation for regular cross-agency technical workshops and the establishment of clear standardized integration frameworks, especially in provinces with moderate digital readiness. The use of standard protocols such as XML or JSON API and the implementation of the National Data Interoperability Framework can facilitate synchronization between Police, Samsat, and insurance data. For security and consistency, it is necessary to form a provincial-level Data Governance Board that oversees data flow and system integrity.

One of the main obstacles is the limited budget for server procurement and employee training. Employees also do not all have adequate digital skills. A sustainable capacity building program is needed as well as the integration of digital competencies into the SKP (Employee Performance Targets) as a push for digital-based bureaucratic reform.

F. *Implementation Challenges*

Despite performance improvements, several systemic challenges were identified. First, uneven infrastructure across provinces remains a major barrier. Remote and rural areas often suffer from weak internet access, which hinders real-time platform utilization. This corroborates Rahmawati et al. (2019), who found that digital infrastructure disparity remains a consistent limitation in Indonesian public services.

Second, inter-agency coordination was revealed as another bottleneck. The absence of real-time connectivity between the tax office, police department, and insurance providers resulted in delays and data inconsistencies, according to Samsat personnel interviewed. Dewi (2018) and Kartika (2019) emphasized the necessity of standardized technological methods to synchronize data exchange among agencies, and this is consistent with their findings. Setiawan and Yunita (2019) also identified issues with digital governance implementation in Indonesia.

Third, digital literacy gaps especially among older users were found to impact user engagement. Some respondents were unaware of the full functionality of the platform, indicating that the current education campaigns may not be reaching all segments effectively. This affirms the arguments made by Suharto (2022), who emphasized the importance of inclusive digital transformation strategies.

G. *Strategic Recommendations for Optimization*

Based on the identified findings, this study proposes several strategic directions: To address persistent infrastructure limitations in rural and underserved areas, this study recommends several practical strategies. In order to increase internet coverage, local governments should first work with major ISPs like Telkomsel, Indosat, or XL Axiata through Public-Private Partnerships (PPPs) to build

base transceiver stations (BTS) in remote areas. Secondly, the national government can provide tax incentives and subsidies to encourage ISP investments in low-return regions. Third, Samsat digital platforms should be optimized for areas with limited connectivity by developing low-bandwidth versions of the service, and integrating offline features such as QR-code-based receipts and delayed synchronization options. Finally, areas recognized as digitally disadvantaged should receive priority support for national infrastructure projects like the SPBE Project and the Palapa Ring. All residents, regardless of where they live, should be able to access and benefit equally from digital public services thanks to these targeted initiatives.

1. Improve internet infrastructure in underdeveloped areas through public private partnerships.
2. Establish regular cross-agency technical training to enhance synchronization and interconnectivity.
3. Redesign the user interface with visual guides and interactive tutorials tailored for low-tech users.
4. Develop responsive support systems, including chatbot features or real-time assistance via messaging apps.

These interventions are not only aligned with the national digital transformation framework (SPBE) but also reflect global best practices in citizen-centered e-government as demonstrated in South Korea and Estonia (Fikry & Tanjung, 2023).

include improving internet accessibility in underserved regions, developing adaptive user interfaces for low-tech users, enhancing cross-agency integration through technical training, and establishing real-time user support channels. These strategies not only respond to the immediate findings but also contribute to filling the previously identified research gap regarding regional disparities in digital public service delivery.

The study's findings thus provide a significant contribution to the conversation about e-government in poor nations by showing how contextual elements need to be methodically taken into account in order to guarantee inclusive and successful digital transformation. This study incorporates operational, infrastructural, and sociodemographic aspects, offering a more comprehensive view of digital public service success than previous research that just focused on technological results. Ramadani and Hidayat (2023) also argued that proactive investment in internet infrastructure and digital service education campaigns can effectively bridge service delivery gaps between urban and rural populations. To mitigate digital literacy gaps, local governments should conduct regular training workshops, distribute visual user manuals, and integrate chatbot-based guidance in Samsat apps to support first-time or low-literacy users.

To overcome low digital literacy, it is recommended to implement village-based digital literacy programs, for example through collaboration with Kominfo and local communities. This activity can be in the form of monthly training or direct mentoring by digital volunteers. In addition, collaboration with local ISPs through the

Universal Service Obligation (USO) scheme can expand internet access to blank spot areas.

H. Policy Implications and Practical Contributions

For improving the efficiency and equity of digital public services in Indonesia, the study's conclusions have a number of significant policy ramifications. First, e-Samsat and e-Dempo's success shows how important infrastructure preparedness, interagency cooperation, and user-centered system design are to better service delivery. Consequently, in order to guarantee fair access for all individuals, provincial and federal officials should give priority to funding the development of digital infrastructure, especially in underserved and rural areas.

Second, this study highlights the necessity for continuous cross-sectoral collaboration. The synchronization between tax offices, police departments, and insurance companies must be formalized through standardized data sharing protocols and integrated digital platforms. Clearly defining institutional roles and accountability procedures can greatly improve user confidence and system dependability. Enhancing digital literacy across diverse populations becomes a critical policy issue. Public outreach campaigns and targeted training programs should be developed by government agencies to reach minority groups, including the elderly and rural populations, in order to bridge the digital divide and boost citizen participation in e-government services.

From a practical perspective, the comparative insights between East Java and South Sumatra provide a valuable framework for other regions embarking on digital service transformations. Regional governments can adapt best practices identified in this study, such as iterative platform development based on user feedback, to tailor services according to their unique socio-economic contexts.

Moreover, in line with Indonesia's national digital transformation agenda under SPBE (Electronic-Based Government System), the integration of emerging technologies such as blockchain for data integrity and artificial intelligence for personalized service delivery should be explored to future-proof Samsat platforms. Ensuring scalability, interoperability, and resilience will be vital for sustaining the long-term success of digital public services.

To further enhance the digital Samsat experience and future-proof the platform, emerging technologies should be considered for integration. For instance, blockchain technology can be used to ensure tamper-proof digital certificates for vehicle tax payments and ownership history, improving the security and transparency of transaction records; AI can be used to personalize user services through intelligent chatbots, predictive notifications for past-due payments, and automated help for error resolution; these innovations would not only improve system reliability but also boost user satisfaction by providing faster, smarter, and more secure exchanges. Incorporating these technologies aligns with the national digital roadmap and reflects global best practices in public service modernization.

Ultimately, these findings not only contribute to the academic discourse on e-government but also offer actionable recommendations that can support policymakers and practitioners in fostering inclusive, efficient, and citizen-centered governance models across Indonesia.

To ensure the sustainability of the Samsat digital system, it is necessary to develop a modular system architecture that allows the integration of new technologies without service disruption. In addition, monitoring based on Key Performance Indicators (KPIs) and annual technology audits can ensure that the system remains efficient and relevant to the development of community and technological needs.

I. Study Limitations and Directions for Future Research

While the findings presented in this paper offer in-depth insights into the implementation of digital Samsat platforms, several limitations must be acknowledged to strengthen the rigor of future research. First, although this study provides a comparative analysis between two regional platforms—e-Samsat in East Java and e-Dempo in South Sumatra—the scope remains limited in geographic breadth. Expanding the comparative framework to include additional provinces with varying levels of digital readiness would allow for a more comprehensive understanding of how regional disparities affect the success of digital public service initiatives.

Second, the current analysis primarily captures short-term impacts of digitalization. Future studies should consider longitudinal designs to evaluate how these platforms evolve over time, particularly in response to changing user needs and technological advancements.

Third, the potential for sampling bias must be addressed. Users from urban locations or those with greater levels of computer literacy may be overrepresented in the current sample, which could distort opinions about usability and satisfaction. In order to increase representativeness, future research should use purposive or stratified sampling strategies that guarantee sufficient participation of underserved and underrepresented people, particularly those in rural areas.

Lastly, the report does not provide specific, doable solutions to address structural issues, such as poor internet access and insufficient digital literacy, even if it does highlight these issues. Context-specific solutions, including community-based digital education initiatives or joint infrastructure investments between telecom companies and local governments, should be the focus of future study. Future studies can offer more solid recommendations for system reform and policy development by improving sampling techniques, broadening regional comparisons, and providing more detailed advice.

V. CONCLUSION

This study has demonstrated that the implementation of digital Samsat platforms—namely e-Samsat in East Java and e-Dempo in South Sumatra—has resulted in

notable improvements in service efficiency, accessibility, and public trust. The transition from manual to digital systems has significantly reduced processing times and enhanced user satisfaction, reflecting the transformative potential of e-government in the Indonesian public service context.

The study did discover, however, that structural problems persist, particularly in places with little digital literacy and inadequate infrastructure. The comparative analysis found that provinces with higher inter-agency coordination, larger institutional capacity, and better internet access—such as East Java—tended to do better than those with administrative and infrastructure constraints, like South Sumatra. These results support the crucial role that contextual preparedness plays in assessing the effectiveness of digital public service programs.

This study suggests a number of specific recommendations aimed at important stakeholders in light of these findings. Promoting public-private partnerships with telecommunications providers to increase coverage in disadvantaged areas is a recommendation for regional and municipal governments looking to prioritize investments in digital infrastructure. System developers and Samsat service units should maximize platform usefulness by creating user-friendly, low-bandwidth interfaces and adding offline features to serve consumers in areas with spotty connectivity. National policymakers, particularly those in the Ministry of Communication and Information, are urged to enhance digital literacy programs that benefit marginalized groups, including the elderly and country dwellers. Incorporating new technologies, like blockchain for transparent and safe record-keeping and artificial intelligence for tailored digital help, can also be viewed as a strategic method to improve the long-term scalability and robustness of the system.

By aligning digital transformation efforts with local needs and institutional capacities, Indonesia can advance toward a more inclusive, effective, and sustainable model of public service delivery. The findings of this study thus contribute to the broader discourse on e-government implementation, offering both theoretical and practical insights relevant to policymakers, practitioners, and scholars in the field of digital governance.

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