Digital transformation in public service: Evaluating e-government implementation and fiscal performance at Samsat Pajajaran Bandung

Inkha Hedian Dena Fritiar

Digital transformation in public service: Evaluating e-government implementation and fiscal performance at Samsat Pajajaran Bandung

Inkha Hedian Dena Fritiar

Universitas Nurtanio Jl. Pajajaran No. 219 Bandung 40174, Jawa Barat, Indonesia
*e-mail: hediwinka@gmail.com

ABSTRACT

This study evaluates the implementation of e-government policies at Samsat Pajajaran, Bandung, focusing on fiscal performance and operational efficiency. Employing a qualitative case study design, data were gathered through in-depth interviews with purposively selected informants, including operational officers and taxpayers, as well as field observations and fiscal report analysis. The findings demonstrate that digitalization via the SIGNAL and e-Samsat platforms has successfully catalyzed local genuine revenue (PAD) growth, with a projected increase of IDR 250 billion by 2025. Operationally, service efficiency improved by 66.7%, reducing processing time from 45 to 15 minutes. However, the study identifies a significant digital divide affecting elderly taxpayers and technical latencies during peak hours. This research recommends a 50% increase in API server capacity to ensure socially inclusive governance.

priviet lab.
RESEARCH & PUBLISHING

1. INTRODUCTION

In the discourse of contemporary public administration, digital transformation has evolved from a mere supporting instrument into a primary pillar of bureaucratic reform. The phenomenon of Digital Era Governance (DEG) demands a repositioning of the government's role from rigid service providers to agile and transparent facilitators. The implementation of e-government is no longer an optional choice but a strategic necessity to mitigate systemic inefficiencies in governance (Dunleavy et al., 2006).

Motor Vehicle Tax (PKB) constitutes a vital fiscal artery, contributing significantly to Local Genuine Revenue (PAD). Consequently, digitalization in this sector has become a crucial benchmark for the success of regional governance. By integrating technology, the government not only optimizes state cash flow but also creates a supervisory system capable of reducing the risks of maladministration and physical interactions susceptible to illegal transactional practices.

The West Java Province has recorded extraordinary achievements in technology adoption through the "Jabar Digital Province" initiative. Empirical data show impressive performance in 2022, with 741, 000 tax payment transactions processed through the SAMBARA application and other online services, generating a financial contribution of Rp. 685 billion. These statistics reflect a high level of public trust in the reliability of the developed digital infrastructure.

However, despite these achievements, empirical observations at Samsat Pajajaran prior to full digitalization revealed chronic bureaucratic ailments. High reliance on manual processes created long queues and fostered an environment in which illegal brokerage (*calo*) and unofficial additional costs flourished, significantly undermining public trust in bureaucratic integrity (Zildan et al., 2020; Zuboff, 2019). These real-world conditions created administrative bottlenecks that led many taxpayers to delay or avoid registration, resulting in unoptimized regional revenue.

The reliability of digital systems is increasingly tested in extraordinary situations, such as national holidays (Dwivedi, 2021). As evidence of resilience, during the 2024 Eid holiday, tax revenue through digital channels remained strong, reaching Rp. 15 billion. This confirms that digital-based services can overcome the operational constraints of physical offices by providing 24-hour accessibility that directly enhances voluntary tax compliance.

A fundamental aspect of digitalization is service-time efficiency. Based on field observations, there is a significant disparity between conventional and digital procedures. Manual service at Samsat offices often takes 45 min or more due to long queues (Haryanto & Lingga, 2024). Conversely, through digital platforms such as e-Samsat or SIGNAL, taxpayers only require approximately 15 min. This 66% time reduction is a key indicator of the success of administrative efficiency principles.

The implementation of e-Samsat in Bandung has proven effective in boosting PAD achievements by optimizing vehicle tax sector revenues. This increased accessibility of payments is linearly correlated with the rise in tax realization as digitalization eliminates geographical and psychological barriers for taxpayers. This positive trend demonstrates that technology not only facilitates citizens but also strengthens the local government's financial structure by minimizing potential revenue leakage.

Samsat Pajajaran was selected as the research locus due to its strategic position with the highest vehicle volume in Bandung. As an economic hub dominated by a productive-age population, Bandung serves as an ideal testing ground for evaluating e-government policies. However, the heterogeneity of digital literacy levels in this region still presents challenges for the overall inclusivity of local taxation policies.

Digital transformation in the public sector is no longer an option but a necessity to create clean and efficient governance. However, in reality, the vehicle tax service sector is often trapped in bureaupathological issues, such as long queues and rampant brokerage practices, that harm the community. Samsat Pajajaran Bandung City as a vital service unit faces a major challenge in managing the surge in vehicle volume that is disproportionate to manual service capacity.

The gap between public expectations for fast service and slow manual procedures creates an urgency to evaluate the effectiveness of digitalization policies, such as the SIGNAL application and e-Samsat. Although technology has been implemented, its effectiveness in boosting taxpayer compliance and processing time efficiency in the field needs to be tested empirically.

Despite quantitative data showing success, policy evaluation must highlight qualitative aspects regarding inter-agency data synchronization. Often, ease at the payment stage is not followed by speed in the physical document validation stage, creating new administrative bottlenecks. The issue of data integration between the police, Bapenda, and Jasa Raharja remains a primary focus to ensure that digitalization does not merely stop at the transaction stage but extends to the completion of administrative services.

This study offers a new perspective by combining post-pandemic fiscal performance data with micro-efficiency analysis. While previous studies tended to focus on organizational readiness, this research explores how digitalization can change taxpayer behavior amidst the complexities of urban issues; the focus on Samsat Pajajaran provides an original contribution to understanding the dynamics of top-down policies interacting with user-centric societal needs. This study aims to analyze how e-government policies at Samsat Pajajran can transform fiscal dynamics and provide a real impact on the community. Through the lens of digital-era governance, this research will reveal the extent to which digitalization has successfully eliminated administrative barriers and optimized tax revenue in Bandung. The research results are expected to provide theoretical contributions to public management challenges in developing countries and serve as a practical guide for stakeholders in improving public service quality and optimizing regional revenue in the future.

While previous studies have extensively discussed the conceptual framework of e-government, a significant contextual gap remains regarding how specific mobile integrations, such as the SIGNAL application, mitigate bureaupathology in high-density urban settings like Bandung. This research fills this void by offering a new perspective that combines post-pandemic fiscal data with micro-efficiency analysis to guide the improvement of public service quality in developing countries.

2. LITERATURE REVIEW

The theoretical foundation of this study is rooted in the concept of digital era governance (DEG), which posits that the integration of information technology within bureaucracy is not merely automation but an effort to reorganize government functions to create higher public. According to (Dunleavy et al 2006). According to Dunleavy et al. (2006), DEG emphasizes service integration and business process simplification to minimize administrative hurdles or bureaupathology. In the context of regional taxation, e-government acts as a transparency instrument that reduces information asymmetry between taxpayers and fiscal authorities.

Previous research indicates that the effectiveness of digital services is heavily influenced by system quality and ease of use. The information systems success model highlights that public service user satisfaction correlates directly with transaction speed and data accuracy. Furthermore, the New Public Service (NPS) theory (Denhardt & Denhardt 2000) emphasizes the importance of placing citizens at the center of service, wherein technologies such as e-Samsat and the SIGNAL application function as facilitators to expand accessibility and eliminate opportunity costs resulting from convoluted manual procedures. The integration between digital infrastructure readiness and inclusive fiscal policies is the primary key to encouraging voluntary tax compliance.

3. METHOD

This study employs a qualitative descriptive case study design to evaluate the implementation of e-government policies at Samsat Pajajaran, Bandung city. Data were gathered between January 2024 and March 2025 through triangulation techniques, involving field observations, documentation studies of fiscal reports, and in-depth interviews. Informants were selected via purposive sampling, consisting of 15 individuals: five administrative and operational officers specifically from the registration and fiscal verification units who possess technical expertise in the SIGNAL and e-Samsat systems and 10 taxpayers as service and users. Data analysis was performed systematically using the (Miles & Huberman 1994) interactive model, encompassing data condensation, data display, and conclusion drawing. To ensure

validity and minimize researcher bias, source triangulation and member checking procedures were implemented by reconfirming interview results with the informants.

4. RESULT

4.1 Fiscal Performance Dynamic: From Conventional Stagnation to Digital Acceleration

The research results reveal a structural transformation in fiscal performance at Samsat Pajajaran Bandung categorized into two crucial phases. In the pre-digitalization era (2018–2019), motor vehicle tax (PKB) revenue tended to stagnate due to low taxpayer compliance. This condition was triggered by reliance on manual payment systems plagued by bureaupathology, such as long queues, rampant brokerage practices, unofficial additional costs, and accessibility barriers for out-of-town taxpayers. The transparency deficit during this period resulted in many vehicles failing to register, thus leaving regional revenue potential unoptimized. See Table 1

Table 1. Pre Digitalization (2018-2019)

Aspect	Before Digitalization (2018-2019)
Taxpayer Compliance Fiscal	Low, many vehicles did not renew registartion
Fiscal Revenue	Stagnat, average growth 5 billion / year
Payment Method	Manual at Samsat office
Operational Efficiency	Long queues, middlemen, extra costs
Fiscal Transparency	Low, prone to manipulation

Source: Data (2018-2019)

Entering the digital implementation phase (2020–2025), a positive anomaly occurred in the form of a surge in compliance and fiscal revenue. Data indicates that at the onset of digitalization in 2020, revenue rose sharply from IDR 130 billion to IDR 150 billion. This growth trend remained consistent, with an average annual increase of IDR 20 billion, projected to reach IDR 250 billion by 2025. This success is supported by integrated payments via ATM, M-banking, and the SIGNAL application, which provide accessibility flexibility. In March 2025, the synergy between digital systems and fiscal incentive policies (tax amnesty) generated a daily revenue of IDR 825 million. Although the system's effectiveness was proven through the achievement of 741, 000 transactions worth IDR 685 billion in 2022. See Table 2

Table 2. After Digitalization (2020-2025)

Aspect	After Digitalization (2020-2025)
Taxpayer Compliance Fiscal	Significant increase, more taxpayers pay on time
Fiscal Revenue	Consistent growth 20 billion / year reaching 250 billion in 2025
Payment Method	e-Samsat Jabar, ATM, M-Banking, SIGNAL
Operational Efficiency	Faster process, transparent, lower operational costs
Fiscal Transparency	High, real time and accurate data

Source: Data (2020-2025)

One of the informants from the service unit stated*:*
*"*Since the implementation of SIGNAL and e-Samsat, the manual administrative workload has decreased drastically. We are now more focused on data verification rather than serving crowded physical queues at the counters, thereby minimizing the potential for human error in data entry to the maximum extent.*"*

Although the implementation has produced significant effects and impacts compared to the previous system, its application in the field still encounters several challenges, such as technical disruptions, limited digital literacy, and uneven infrastructure readiness. Field implementation faces technical challenges

such as server instability, limited ATM infrastructure at the site, and digital literacy gaps within the community.

However, when interpreting these fiscal gains, it is essential to consider plausible alternative explanations. While the digital system is a primary driver, the surge in revenue also aligns with the post-pandemic economic recovery in the Bandung region and the intensive tax amnesty programs implemented by the provincial government. Therefore, the digital system acted as a robust accelerator that allowed the government to capture this economic momentum more effectively than the previous manual system could have.

4.2 Operational Efficiency and Service Transformation

Beyond its fiscal impact, digitalization has a drastic effect on service duration efficiency. Before massive digitalization, taxpayers required 45 min or more to complete the manual payment process at physical counters. The adoption of e-Samsat and the SIGNAL application successfully reduced this duration to only 15 min. The quantitative efficiency is further validated by qualitative evidence from the field. In an interview, an operational staff member explained that the transition to SIGNAL has drastically reduced physical congestion at service counters. We can now focus more on data verification and complex cases rather than repetitive manual entry, which significantly minimizes the margin for human error. This suggests that digitalization not only speeds up transactions but also improves the quality of bureaucratic work environments. See Table 3

Table 3. After Digitalization (2020-2025)

Service Line	Estimated Average Time Required by Taxpayers	Information
Manual (Conventional at Samsat Office)	About 45 minutes to 2 hours	The waiting time may vary depending on the length of the queue, completeness of documents, and efficiency of the local Samsat office.
Digital (e-Samsat/SIGNAL)	About 15 minutes or even less	This time includes the registration process to payment via a bank e-channel or application. The process can be done anytime (24 hours) and anywhere.

Source: Data (2020-2025)

Digitalization at Samsat Pajajaran has resulted in significant transformation in operational efficiency, with a 66.7% reduction in service duration. Research data indicate that conventional manual procedures require an average of 45 min or more, whereas digital channels successfully reduce transaction time to 15 min. This effectiveness is supported by the diversification of electronic payment channels such ATM, M-banking, and the National Digital Samsat (SIGNAL) application which 24 hours accessibility. This success was proven in 2022 with 741, 000 transactions worth IDR 685 billion and system resilience during the 2024 Eid holiday, which managed to record IDR 15 billion in revenue while physical offices were closed.

Service acceleration is influenced by three primary determinant factors. First, the elimination of physical queues digital systems break the bureaucratic chain at registration and payment counters, which have historically been points of congestion. Second, automation of data processing unlike manual systems that rely on repetitive data entry by officers, digital systems enable instantaneous data synchronization. Third the democratization of accessibility through the SIGNAL application taxpayers can fulfil fiscal obligations remotely, drastically eliminating opportunity costs and geographical barriers inherent in conventional service models. Digital service provide significant time efficiency, making them a faster and more convenient option for taxpayers, particularly when completing vehicle tax payments.

4.3 Social Implications and the Digital Divide

The implementation of digital services at Samsat Pajajaran has broader social consequences beyond administrative efficiency. This study finds that while digitalization strengthens public trust by removing

opportunities for illegal brokerage, it simultaneously creates a digital divide. Based on field observations, elderly taxpayers often struggle with the mobile interface, necessitating a hybrid service model. This ensures that digital transformation remains inclusive, balancing technological advancement with human centric assistance to prevent social exclusion in public service access.

4.4 The Role of SIGNAL Application in Tax Democracy

Digitalization trough the SIGNAL application impacts not only fiscal but also the democratization of public service in Bandung prior to adoption of this technology, taxpayers often faced significant geographical and time barriers, as administrative processes required a physical presence at the Samsat Pajajran office. This phenomenon created access inequality for individuals with high mobility or those located outside effective coverage areas. The SIGNAL applications serves as an instrument of inclusion, providing equal access regardless of spatial constraints. This reflects the principle of equity in public administration, where technology functions to dissolve the barriers between fiscal authorities and citizen. With the transparency offered, public trust increases organically as opportunities for unofficial levies by third parties are completely eliminated.

4.5 Identification of Technical Challenges and Literacy Gaps

Although results show significant success, field findings identify several persisting technical obstacles. Primary barriers include server failures during peak hours, limited ATM infrastructure at Samsat locations, and digital literacy gaps where not all social segments are proficient in using M-banking features. Furthermore, data integration aspects between agencies (police, bapenda, and Jasa Raharja) often experience time legs in synchronizing payments status with physical STNK validation. This indicates that while transaction digitalization has performed optimally comprehensive administrative integration still requires infrastructure refinement and more inclusive socialization.

5. DISCUSSION

5.1 Fiscal Analysis: Digitalization as a Solution to Leakage and Stagnation

The research findings showing a revenue surge from IDR 130 billion to IDR 150 billion at the onset of digitalization, projected to reach IDR 250 billion by 2025, reinforce the theory of Digital Era Governance (DEG). According to Dunleavy et al (2006) technology integration is not merely automation but a business process engineering to create public value, at Samsat Pajajran this transition successfully mitigated fiscal leakages that previously occurred due to brokerage practise and unofficial costs in the pre digitalization era (2018-2019). This increase in voluntary tax compliance occurs because digital systems offer free transparency where every IDR paid is recorded in real time within the state database, thereby restoring public trust in tax management institutions.

5.2 Reconstructing Efficiency: Eliminating Service Bureaupathology)

The service duration efficiency of 66.7% from 45 minutes to 15 minutes is tangible manifestation of Administrative Efficiency principles. Theoretically, the obstacles found in the manual era at Samsat Pajajaran were a form of bureaupathology a bureaucratic ailment synonymous with redundant procedures. By adopting SIGNAL and e-Samsat applications, bureaucracy no longer acts as a barrier but as an economic accelerator. The system's resilience during the 2024 Eid holiday, which still recorded IDR 15 billion proves that digitalization has created ageless public services. This aligns with DeLone & Mclean (2023) is success model, where system quality and information quality directly impact user satisfaction and overall organizational effectiveness.

5.3 Integration Challenges: Toward Seamless Government)

Despite the impressive fiscal achievements, technical challenges such as server downtime and digital literacy barriers indicate that Samsat Pajajaran is still in a transition phase toward seamless government. The time lag in data synchronization between agencies (Police, Bapenda, and Jasa Raharja) confirms (Osborne,

2010) critique of New Public Governance, which emphasizes cross actor collaboration. This evaluation underscores that the success of PKB payments digitalization should not only be measured by revenue (turnover) but also by the perfection of administrative integration. Without flawless a data synchronization, digitalization risks merely shifting physical queues into digital ones thus, strengthening technological infrastructure and inclusive socialization are urgent agendas for the sustainability of this policy.

Beyond technical constraints data synchronization challenges also have implications for legal validity of electronic documents. Unprepared infrastructure at certain service points causes a time lag between payment in the application and status updates in the central Samsat database. This is crucial as it can trigger administrative disputes for taxpayers during field inspections. Therefore, standardizing data communication protocols between agencies (Police, Bapenda, and Jasa Raharja) is no longer just a technical option but an urgent necessity to ensure legal certainty within the digital ecosystem.

5.4 Managerial and Policy Implications

The findings in this study provide crucial managerial implications for Samsat Pajajaran managers and the Local Government. First a redistribution of the human resource workload is required officers previously serving manual counters must be retrained (reskilling) into digital service rapid response units or technical helpdesks. Second, although fiscal performance has increased to IDR 250 billion, the sustainability of this system heavily depends on the stability of information technology infrastructure. Investment in cybersecurity and regular server maintenance is mandatory to prevent downtime during peak periods, such as month ends or tax amnesty periods. Furthermore, socialization policies must be segmented to reach taxpayers groups that still possess limited digital literacy, ensuring that the transition toward a cashless society remains inclusive.

5.5 Future Research Directions

This study is limited to evaluating fiscal performance and operational efficiency at Samsat Pajajaran. Future research is suggested to explore the behavioural psychology of taxpayers toward the use of AI (Artificial Intelligence) in Samsat complaint service. Furthermore, a comparative study between Samsat in urban areas (Bandung) and rural areas is highly necessary to map the effectiveness of digitalization more comprehensively across west java.

6. CONCLUSION

This study concludes that implementation of E-Government policies at Samsat Pajajaran Bandung, has successfully achieved a fundamental transformation in both fiscal and operational aspects. Fiscally digitalization has proven to be a catalyst for Local Genuine Revenue (PAD) growth with a projected increase reaching IDR 250 billion by 2025 driven by transition from coercive to voluntary compliance. Operationally, there has been a 66.7% increase in service duration efficiency where processing time was slashed from 45 minutes to just 15 minutes trough the e-Samsat and SIGNAL platforms. To sustain this digital momentum this study proposes two strategic interventions for the West Java Regional Revenue Agency (Bapenda). First a technical upgrade of API server capacity by 50% is imperative during peak fiscal periods to mitigate system latency and potential downtime. Second the implementation of Digital Assistance Desks at physical Samsat offices is crucial to bridge the digital literacy gap for elderly taxpayers, ensuring that the digital transformation remains socially inclusive. Nonetheless, this success is still confronted by the digital paradox challenge specifically the hurdles of inter agency data synchronization and public digital literacy gaps. Therefore, strengthening real time data integration and inclusive socialization are absolute prerequisites for realizing a truly seamless government in the future. Despite its contributions, this study is limited by its specific focus on a single urban service point at Samsat Pajajaran. Consequently, the findings may no fully capture the digital challenges faced in rural jurisdictions. Future research should adopt a comparative longitudinal design to evaluate how digital tax integration affects long tern taxpayer compliance across diverse regional demographics in Indonesia.

Ethical Approval

This research follows the principles of social research ethics. Since this study focuses on public policy evaluation and utilizes public administrative data and general observation, procedures were conducted while maintaining informant anonymity.

Informed Consent Statement

Verbal informed consent was obtained from all informants before the interview and observation sessions were conducted. Participants were provided with explanations regarding the research objectives, the guarantee of anonymity, and the use of data solely for the purpose of advancing scientific knowledge.

Authors' Contributions

The author is fully responsible for the conceptualization, data collection at Samsat, data analysis, and final manuscript preparation.

Disclosure Statement

The author declares no conflict of interest regarding this research whether financial or professional with Bapenda or Samsat.

Data Availability Statement

The primary data used in this article are available upon request to the author. While secondary data refer to the official annual reports of West Java Bapenda.

Notes on Contributors

Inkha Hedian Dena Fritiar
Inkha Hedian Dena Fritiar is a lecturer affiliated with the State Administration Science Program Faculty of Social and Political Sciences, Nurtanio University (Unnur) Bandung Indonesia. Her research focus centers on the dynamics of digital transformation the public sector, regional fiscal policy, and the development of E-Government governance.

REFERENCES

DeLone, W.H., & McLean., E.R. (2023). *The Delone and McLean Model of Information Systems Success: A Ten Year Update. Journal of Management Information Systems*, 19(4), 9-30. https://doi.org/10.1080/07421222.2003.11045748

Denhardt, R.B & Denhardt, J.V. (2000). The New Public Service: Serving Rather Than Steering. Public Administration Review, 60(6), 549-559. https://doi.org/10.1111/0033-3352.00117

Dunleavy, P., Margetts, H., Bastow, S., & Tinjler J. (2006). *New Public Management is Dead Long Live Digital Era Governance*. Jorunal of Public Administration Research and Theory, 16(3), 467-494. https://doi.org/1093/jopart/mui057

Dwivedi, Y.K., et al. (2021). Artificial Inteligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice ad policy. International Journal of Information Management, 57. 101994. https://doi.org/10.1016/j.ijinfomgt.2019.08.002

Haryanto, D.A & Lingga, I.S. (2024). Pengaruh Penerapan e-Samsat dan Sanksi Perpajakan Terhadap Kepatuhan Wajib Pajak Kendaraan Bermotor. Jurnal Riset Akuntasi Politala, 7(1), 1-12. https://doi.org/10.34128/jra.v7i1.181

Miles, M. B & Huberman, A. M. (1994). *Qualitative Data Analysis: An expanded sourcebook (2nd ed).* Sage Publications.

Osborne, S. P. (2010). *The New Public Governance Emerging Perspectives on the theory and practice of public governance.* Routledge.

Zildan, M.F., Miradhia, D., & Pancasilawan, R. (2020). *Implementasi Program e-Samsat di Jawa Barat.* Jurnal Administrasi Negara (JANE), 6(2), 101-110. https://jurnal.unpad.ac.id/jane/article/viewFile/28691/16884

Zuboff, s. (2019). *The Age of Sureillance Capitalism: The Fight for a Human Future at the New Frontier of Power.* Public Affairs.