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# Analysis of Efficiency and Simplification of Procedures in Sipesut Innovation (Samarinda Customs Service Information System): Building A Lean Public Service

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**Abstract.** The Samarinda Customs Service Information System (*SIPESUT*) is a digital innovation developed by Samarinda Customs and Excise Office (KPPBC TMP B Samarinda) designed to simplify bureaucratic procedures and enhance service efficiency in customs administration. This study analyzes *SIPESUT* through the integration of various public service paradigms, including Old Public Administration (OPA), New Public Management (NPM), and Digital Era Governance (DEG), reflecting a lean, efficient, and responsive public service model. Using qualitative analysis and field observation data, this study highlights *SIPESUT*'s impact on streamlining procedures, improving efficiency, and optimizing resources, while also identifying technical, infrastructural, and human resource challenges. The findings emphasize the necessity for system integration, human resource capacity building, and infrastructure enhancement as strategic steps to support *SIPESUT*'s sustainability. This research contributes to the discourse on public service innovation and inspires the development of inclusive and sustainable digital public service initiatives.

**Keywords:** Bureaucratic simplification; Digital transformation; Lean public service; Public service innovation; SIPESUT.

## INTRODUCTION

Innovation in public services plays a crucial role in encouraging improvements in efficiency and service quality for the community (Thusi et al., 2023). By presenting various innovations, government agencies can simplify bureaucratic processes that are often complex and time-consuming, thereby accelerating responses and services for users (Bason, 2018). Furthermore, this innovation enables transparency, accountability, and ease of access to information, which are vital in building public trust (Caldwell & Mays, 2012). Innovation in public service not only involves new technologies but also requires changes in organizational culture and mindset to continuously adapt to the demands of dynamic times (Osborne, 2010). Thus, innovation becomes a strategic foundation in transforming public services to be responsive, efficient, and high quality.

The development of information technology has been a major driver of significant changes in public service delivery. This transformation not only speeds up administrative processes but also improves access and service quality for the community. Digital technology enables integration of various service systems online, ultimately enhancing operational efficiency and transparency. Therefore, information technology-based innovation is a strategic key in building public services that are responsive and adaptive to contemporary needs (Hanipah & Lina, 2022; Prayitno, 2023). Implementing this technology in the public sector opens opportunities to simplify complicated bureaucratic procedures while strengthening user involvement in the service process (Putri, 2021).

The Directorate General of Customs and Excise (DJBC), under the Ministry of Finance of the Republic of Indonesia, plays a key role in managing customs and excise nationwide. One work unit, the Customs Supervision and Service Office of Intermediate Type B (KPPBC TMP B) Samarinda, serves Samarinda City and surrounding regencies including Kutai Kartanegara, West Kutai, and Mahakam Ulu. KPPBC TMP B Samarinda is tasked with services, supervision, and control over export-import flows and excisable goods (BKC) within its jurisdiction. Samarinda is a strategic gateway for international trade in East Kalimantan, critical for smooth trade in commodities like mining and plantation products (KPPBC TMP B Samarinda, 2023). However, KPPBC TMP B Samarinda encounters challenges in delivering fast, effective, and efficient services due to the complex customs and excise procedures. The agency also focuses on supervision, law enforcement, and trade facilitation for regional export products. To realize transparent and accountable services beneficial to regional and national development, KPPBC TMP B Samarinda continues to optimize service innovation, including digitizing service systems.

Digital innovation has significantly transformed public service delivery, especially by increasing speed and ease of access. Accordingly, KPPBC TMP B Samarinda has developed a digital service innovation called the Samarinda Customs Service Information System (SIPESUT). This application facilitates and accelerates customs service processes online, allowing users to submit requests, supporting documents, correspond on requirements, and receive responses without physical presence at the customs office. SIPESUT improves communication between users and officers and reduces time and operational costs by simplifying procedures formerly reliant on physical documents. As a result, services are more responsive, transparent, and integrated, promoting efficiency and enhancing the quality of public services (Kaltimtoday.co, 2025).

The public service paradigm is a vital framework for understanding information technology innovations in the public sector. The evolution includes classical public administration (OPA), emphasizing efficiency and bureaucracy; new public management (NPM), prioritizing efficiency; and digital era governance (DEG), which integrates digital technology to reform bureaucracy. SIPESUT exemplifies how these paradigms combine to deliver more effective and efficient services at KPPBC TMP B Samarinda. Before such digital innovations, public services followed a classic bureaucratic paradigm characterized by layered procedures and complex documents. SIPESUT shifts service delivery from physical, face-to-face processes to electronic services accessible anytime and anywhere, reflecting a move toward digitalization and easier access (Kaltimtoday.co, 2025).

## METHOD

The qualitative method was chosen for this study due to its flexible and in-depth nature, which allowed researchers to understand the dynamics of SIPESUT innovation implementation holistically and contextually. This approach was appropriate to explore the experiences, perceptions, and processes involving various stakeholders in the public service environment, enriching understanding of the phenomenon beyond reliance on quantitative data (Creswell & Poth, 2018). It was also relevant to the study of public services and digital innovation, where process change and user experience were the main focus, enabling assessment of how

innovations like SIPESUT affected bureaucratic procedures and reshaped service practices to be more responsive and efficient (Denzin & Lincoln, 2018).

Data collection in this study employed two main approaches: literature study and in-depth observation. The literature review involved identifying, collecting, and analyzing relevant written sources, including theories about public administration, procedural efficiency, and innovations in public service, to provide a theoretical basis related to SIPESUT's context. In-depth observations took place at KPPBC TMP B Samarinda to gather empirical data on the service process, user interactions, and challenges encountered during SIPESUT implementation (Marshall & Rossman, 2016). This observation helped reveal real dynamics not accessible through secondary data, enhancing the accuracy and depth of the analysis (Creswell, 2018; Moleong, 2017).

Data analysis proceeded through three stages: data reduction, data presentation, and drawing conclusions. Data reduction involved selecting, focusing, and simplifying information from the literature and observations to make it concise and understandable. The reduced data were then presented descriptively to illustrate the efficiency and simplification of procedures through SIPESUT innovation. Finally, conclusions were drawn from a thorough interpretation of the compiled data. To ensure research validity, data triangulation was applied by combining findings from literature and observations, thereby increasing credibility (Creswell, 2014; Moleong, 2018).

This research was conducted at the Customs and Excise Supervision and Service Office of Intermediate Type B Samarinda (KPPBC TMP B Samarinda), which implements SIPESUT innovations in customs public services. The focus was on direct observation of the service process using SIPESUT, complemented by a literature review on efficiency and public service procedures. Field data collection and observation occurred from October to November 2025, enabling an in-depth capture of innovation implementation dynamics in real-world conditions.

## RESULTS AND DISCUSSION

The implementation of the Samarinda Customs Service Information System (SIPESUT) at KPPBC TMP B Samarinda shows significant changes in the way public services are run. Based on application usage data and field observations, customs services that previously relied on manual and face-to-face processes have now transformed into more efficient with an integrated online system. This is in line with the findings of Frinaldi (2024) who stated that the adoption of digital technology in public administration can increase the speed and transparency of services.

### The Integration of Public Service Paradigms in SIPESUT Digital Transformation

The implementation of SIPESUT as a digital innovation in customs services at KPPBC TMP B Samarinda shows a strong blend of various public service paradigms. The classic approach of Old Public Administration (OPA) is still reflected in the clarity of the procedural order which is maintained through strict administrative arrangements and service rules, maintaining order and legal certainty in customs services. However, this innovation does not only stop at the procedural aspect, but also adopts the principles of efficiency, effectiveness, and customer orientation which are characteristic of the New Public Management (NPM) paradigm. With SIPESUT's online system, the service process becomes faster, the use of resources is more optimal, and the main focus is shifted to the satisfaction of service users who

are increasingly easier to access services without complicated bureaucratic obstacles (Janssen & Estevez, 2013; Hood, 1991).

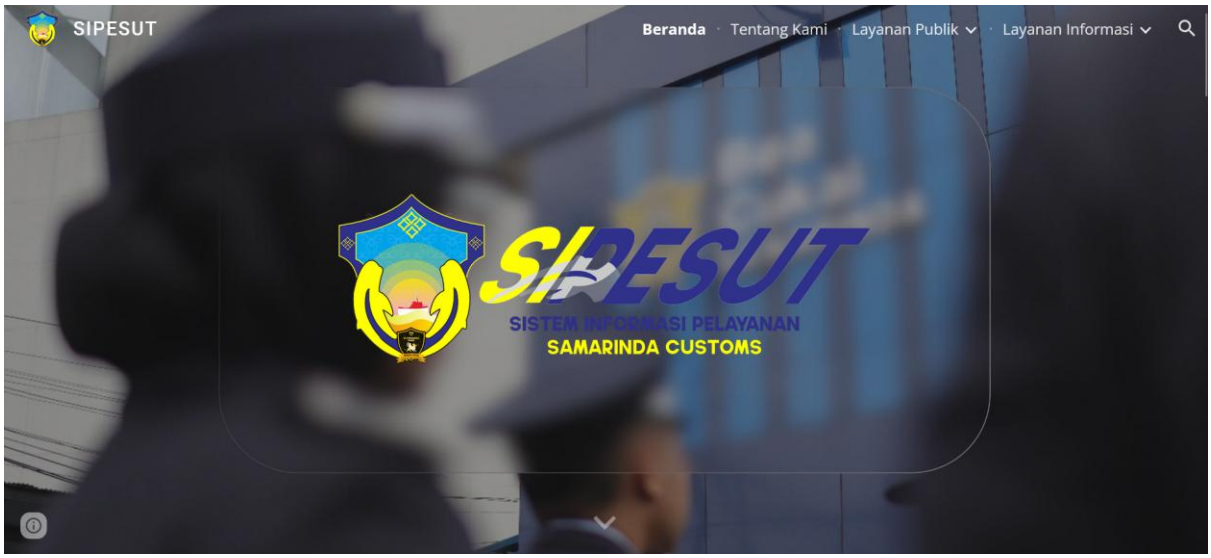


**Figure 1: Screen display of the home page of the SIPESUT application**

SIPESUT adds a new dimension through the *Digital Era Governance* (DEG) paradigm which integrates information technology as the main driver of public service transformation. This digital transformation allows for information disclosure, wider public participation, and transparency that increases service accountability. The use of online applications as a medium of communication and administration reduces the need for physical face-to-face interaction, which at the same time supports the acceleration of processes and reduces the potential for irregularities or corrupt practices. This indicates that this combination of paradigms can form a lean—concise and responsive public service pattern—while maintaining aspects of legality and a solid administrative order (Luna-Reyes & Gil-Garcia, 2014; Dawes, 2008).

The results show that the success of SIPESUT implementation is greatly influenced by the balance between the need to maintain an orderly bureaucratic structure and the need for flexibility and speed of services made possible by digital technology. User experience shows increased satisfaction as service processes become simpler and more time-consuming, while service managers can monitor and manage workflows more efficiently and transparently. The obstacles found are mainly related to the readiness of human resources and technological infrastructure, which require special attention so that this innovation can run optimally and sustainably (Cordella & Bonina, 2012; Hadiwiyono et al., 2024).

The paradigmatic blend in the implementation of SIPESUT is not only improving service procedures, but also creating a modern public service model that is adaptive and sustainable. The recommendations of this study invite policymakers and public service implementers to continue to integrate the principles of lean governance and digital governance, while maintaining legal and procedural aspects. Strategic steps to strengthen human resource capacity and improve digital infrastructure are absolute requirements to support the development of similar innovations in other agencies, which are expected to encourage the acceleration of the modernization of public services in Indonesia (Heeks, 2018; Janssen & Estevez, 2013).

**The success of SIPESUT's innovation in improving efficiency and simplifying procedures to form lean public service**

The success of SIPESUT's innovation in improving the efficiency and simplification of service procedures at KPPBC TMP B Samarinda is clear evidence of the application of the concept of lean public service that is concise, efficient, and responsive to the needs of the community. By adopting digital technology based on online applications, SIPESUT is able to reduce bureaucratic steps that were previously complex and based on physical documents, so that the service process can be significantly accelerated. Reducing physical face-to-face interactions also helps reduce potential communication bottlenecks and administrative errors, while lowering the risk of irregularities that can occur in manual processes. This innovation makes it easier for service users to access services anytime and from anywhere, which is an important aspect of lean governance to increase the value of public services without adding large resources (Janssen & Estevez, 2013; Womack & Jones, 2003).

More than that, SIPESUT is able to reflect the integration of an integral public service paradigm. The traditional approach of Old Public Administration (OPA) remains visible in the enforcement of procedural rules that ensure compliance and legality of every service process. Meanwhile, the principles of New Public Management (NPM) are present to optimize resources, orient themselves to customers, and focus on measurable results. In this digital era, the Digital Era Governance (DEG) paradigm is the main cornerstone of transformation, where information technology not only serves administration but also creates transparency, accountability, and wider participation. SIPESUT has succeeded in combining these three paradigms to create a modern public service that is still based on a solid administrative order (Luna-Reyes & Gil-Garcia, 2014; Hood, 1991; Dawes, 2008).

The evaluation of the success of this innovation also highlights the importance of the readiness of human resources (HR) and technology support systems. Although technology is already available and integrated, the sustainability and optimization of SIPESUT is highly dependent on the ability of employees to operate the system and supporting technology infrastructure. Intensive training for human resources and increasing technological capacity are strategic steps so that SIPESUT can function optimally and continue to grow. Thus, the success of SIPESUT is not only technological innovation, but the result of synergy between technology, human resources, and policies that support lean public service in customs services (Cordella & Bonina, 2012; Heeks, 2018).

Overall, SIPESUT proves that digital innovation based on the integration of public service paradigms is able to drive bureaucratic transformation in a more efficient and transparent direction. Successful implementation can be a model for other government agencies to adopt the principles of lean governance and digital governance as the foundation for modernizing public services in Indonesia, so that public services not only meet administrative standards, but also be able to provide added value to the wider community (Janssen & Estevez, 2013; Heeks, 2018).

**Main Challenges in the Implementation of SIPESUT**

Although SIPESUT has brought positive changes in the customs service process at KPPBC TMP B Samarinda through digitalization, its implementation also faces various challenges that must be overcome so that innovation can run optimally. Based on observations, there are several challenges faced in the implementation of SIPESUT. First, sometimes users

still experience technical problems such as documents that fail to be uploaded, data that does not appear, and network interruptions that hinder the smooth access of applications. This condition is a reminder of the importance of stability and reliability of information technology systems so that innovation can provide optimal services in a sustainable manner. Basically, this kind of technical problem is common in public digital transformation, where the availability of reliable infrastructure and effective system management are key factors for the successful implementation of digital applications (Alasem et al., 2020; Rana et al., 2019). In this regard, responsive system management and continuous monitoring are needed to ensure the smooth running of services and increase user confidence in digital innovation.

Second, the limitation of technological infrastructure is a significant obstacle considering that the supervision area of KPPBC TMP B Samarinda covers a very large area, namely Samarinda City, Kutai Kartanegara Regency, West Kutai, and Mahakam Ulu, some of which do not have fast internet access and adequate technological devices, especially in rural areas far from urban areas. Obstacles in installing internet access in these villages are caused by hard-to-reach areas and limited electricity supply (Kutairaya.com, 2025). This inequality of access limits the ability of all service users in the work area of KPPBC TMP B Samarinda to use SIPESUT equally, so special attention needs to be paid to the equitable distribution of digital technology infrastructure. This unevenness in digital services has the potential to cause inequality in access to public services. Therefore, synergy is needed between local governments, technology service providers, and the community to jointly overcome infrastructure problems so that the digitization of public services such as SIPESUT can be felt equally and sustainably.

Third, challenges in terms of data security and privacy are important concerns. Digital systems that manage customs data must be able to ensure information security from potential cyber threats. The implementation of security measures and the preparation of effective data protection policies are aspects that must be continuously strengthened so that users' trust in digital services is maintained (Barbier & Tengeh, 2023). In addition, Samarinda Customs must actively increase employee awareness and competence related to cybersecurity through routine training to anticipate potential digital attacks. The use of encryption technology and strict security protocols also needs to be implemented in the SIPESUT system to avoid data leaks and unauthorized access. These steps are an important foundation so that online services are not only fast and efficient, but also safe and reliable for all service users.

Fourth, SIPESUT has not been integrated with CEISA (Customs-Excise Information System and Automation) as the main information system at DJBC. Although SIPESUT is designed to complement CEISA's main system, currently the two digital applications are not fully integrated. This can potentially cause significant obstacles in customs service operations. This disconnection not only has the potential to lead to data inconsistencies, but it also results in duplication of administrative processes that strain resources and slow down workflows. Situations like this often occur when information systems run in parallel, as there is no adequate synchronization, which can lead to information gaps and the risk of data processing errors (Chen, 2018; Baharmand & D'Ambra, 2017). Therefore, to ensure service continuity, data consistency, and business process optimization at DJBC, the full integration of SIPESUT and CEISA must be carried out immediately. Information system integration is believed to improve

coordination between units, strengthen data-based decision-making, and encourage overall efficiency in digital public services (Al-alak & Tarhini, 2017).

Fifth, the limited number of employees with adequate information technology capabilities at Samarinda Customs is a serious challenge in the management, maintenance, and sustainable development of the SIPESUT application. The lack of IT skilled human resources not only slows down the response to various technical issues that arise, but also limits the advanced innovation needed for the system to continue to adapt to the needs and advances of the latest technology. This condition shows how important it is to continuously increase human resource capacity through intensive training, digital competency certification, and the appointment of employees with experience in information technology. Studies show that the success of public organizations in implementing digital innovation is highly dependent on the readiness and ability of human resources as the main managers of information technology systems (Al-Harthy, Al-Badi, & Al-Hosni, 2020). Therefore, to ensure that innovations such as SIPESUT run well and improve the overall quality of public services, the government must include a systematic and sustainable human resource development strategy (Heeks, 2018; Mergel, Edelmann, & Haug, 2019).

By understanding these challenges, KPPBC TMP B Samarinda needs to implement a comprehensive change management strategy to address the various challenges that exist. This strategy should include policy harmonization, improved data security, improved IT infrastructure, and ongoing HR training. This method is essential to ensure that SIPESUT innovations provide the best benefits for users and help accelerate the modernization of public administration.

## CONCLUSION

The implementation of the Samarinda Customs Service Information System (SIPESUT) at KPPBC TMP B Samarinda successfully transformed customs services from manual, face-to-face processes to an efficient, transparent, and responsive online system, integrating Old Public Administration (OPA), New Public Management (NPM), and Digital Era Governance (DEG) paradigms to achieve lean public services focused on user satisfaction. Despite these gains, challenges persisted, including technical bottlenecks, infrastructure limitations, poor integration with CEISA systems, and insufficient technically skilled human resources, hindering sustainable optimization. The primary recommendation was to bolster human resource capacity through intensive IT training and competent recruitment to ensure SIPESUT's ongoing relevance and inclusivity, serving as a model for bureaucratic transformation across Indonesia. For future research, longitudinal studies could evaluate SIPESUT's long-term impact post-training interventions and scalability to other customs offices, incorporating quantitative metrics like service time reductions and user satisfaction surveys.

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