# IMPLEMENTATION OF SIPD IN REGIONAL FINANCIAL MANAGEMENT: EVIDENCE FROM MURUNG RAYA REGENCY

Oleh

**MAXIMILIANUS ADITIA HERSADJATI**
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## JURNAL ILMIAH

Untuk memperoleh gelar Magister
Program Magister Ilmu Ekonomi
Bidang Konsentrasi Perencanaan Pembangunan dan Keuangan Daerah

**KEMENTERIAN PENDIDIKAN TINGGI, SAINS DAN TEKNOLOGI**
**UNIVERSITAS PALANGKA RAYA**
**FAKULTAS EKONOMI DAN BISNIS**
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# LEMBAR PERSETUJUAN

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Palangka Raya, Juli 2026

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## IMPLEMENTATION OF SIPD IN REGIONAL FINANCIAL MANAGEMENT: EVIDENCE FROM MURUNG RAYA REGENCY

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Telah berhasil dipertahankan di depan Dewan Penilai dan diterima sebagai bagian persyaratan yang diperlukan untuk memperoleh gelar Magister, Program Studi Magister Ilmu Ekonomi, Fakultas Ekonomi dan Bisnis Universitas Palangka Raya

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Palangka Raya, Juli 2026


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**MAXIMILIANUS ADITIA HERSADJATI**

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# IMPLEMENTATION OF SIPD IN REGIONAL FINANCIAL MANAGEMENT: EVIDENCE FROM MURUNG RAYA REGENCY


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## Abstract

This study aims to analyze the application of the regional government information system in enhancing the effectiveness and efficiency of financial management and administration. The regional government information system is a national digital system designed to integrate the entire regional financial cycle from planning, budgeting, execution, and reporting to evaluation. Using a mixed methods approach, this research combines quantitative analysis of regional budget, budget realization reports, and regional government information system metadata with qualitative analysis through interviews, observations, and questionnaires based on the DeLone & McLean model. The findings indicate that regional government information system implementation significantly contributes to improving expenditure realization accuracy, consistency between planning and budgeting documents, and reporting efficiency. The average user perception score for system quality reached 4.2, with performance impact rated very good (4.4). However, technical challenges such as server instability and limited digital human resources remain barriers to optimal implementation. This research reinforces the relevance of Musgrave's theory on fiscal allocation efficiency and the DeLone & McLean model in evaluating public information systems.



***Keywords***: Effectiveness, Efficiency, Local Government, Regional Financial Management, Regional Government Information System.

# I. INTRODUCTION

Regional financial management and administration are crucial elements in realizing transparent, accountable, and efficient governance (Wardani & Hasibuan, 2024). In practice, many local governments in Indonesia still face serious challenges, such as delays in financial reporting, mismatches between planning and budgeting, and weak integration between information systems (Gamayuni, 2020; Septiani & Isnawaty, 2024). Data fragmentation and protracted manual processes often lead to fiscal inefficiency and poor decision-making quality (Rahmadany, 2023).

In response to these challenges, the Ministry of Home Affairs of the Republic of Indonesia developed the Regional Government Information System (Sistem Informasi Pemerintah Daerah/SIPD), an integrated digital platform covering the entire regional financial management cycle from planning and budgeting to implementation and reporting (Tanan et al., 2024). SIPD is expected to be a strategic solution to strengthen synergy between regional government agencies, improve data accuracy, and accelerate national financial administration processes (Salain & Wedena, 2023; Teken & Romarina, 2024). However, despite widespread implementation of SIPD, its effectiveness in improving the quality of regional financial management has not received much academic study. There remains a gap between the system's potential and its actual benefits, particularly regarding human resource readiness, digital infrastructure, and institutional adaptation.

In addition, SIPD has become a mandatory platform for all regional governments through regulations issued by the Ministry of Home Affairs in 2021, making its successful implementation a national priority in realizing digital governance and fiscal reform (Nangoy et al., 2025). Audit reports from the Audit Board of Indonesia (Badan Pengawas Keuangan/BPK) and national monitoring by Kemendagri indicate that several regions continue to experience technical downtime, incomplete data migration, and disparities in user capability, suggesting that the benefits of SIPD are not yet evenly distributed (Septiani & Isnawaty, 2024). However, empirical evaluation of its real impacts remains limited, with most previous studies focusing on conceptual analyses or case discussions without measuring quantifiable administrative improvements. The selection of Murung Raya Regency as the research site strengthens the relevance of this study because it represents regions with complex geographic characteristics and infrastructure variability, providing an opportunity to examine SIPD performance in a realistic and challenging implementation environment.

Musgrave (1959) emphasized that a public financial system must be able to carry out its allocation, distribution, and stabilization functions efficiently. In the context of information systems, the DeLone and McLean (2003) model states that the success of a system is determined by the quality of information, systems, services, and their impact on organizational performance. Robinson and Brumby (2005) shows that digitalization of public budgets can improve efficiency and accountability, but only if supported by institutional reforms and technical capacity.

The identified gap is the lack of empirical studies that directly measure the contribution of the regional government information system to increasing the effectiveness and efficiency of regional financial management, especially in the context of Indonesia, which has diverse capacities between regions. The problem formulation in this study is: How does the application of SIPD contribute to increasing the effectiveness of regional financial management and administration in Murung Raya Regency? What are the supporting and inhibiting factors for implementation of SIPD at the regional level? The aims of this study are to analyze the impact of the implementation of the regional government information system on the quality of regional financial management, identify challenges, strategies, and recommendations for optimizing SIPD within an institutional and technical context. This research offers a novel empirical evaluation of SIPD, a national system that has not been widely studied in the academic literature. Its main contributions are: providing scientific evidence on the effectiveness of SIPD in improving regional fiscal governance; developing an evaluation framework based on information systems models and public finance theory; and providing relevant policy recommendations for central and regional governments in strengthening the digitalization of public finance.

# II. LITERATURE REVIEW

## Regional Government Information System

Information systems such as SIPD serve as instruments for realizing these principles through the digitization of planning, budgeting, implementation, and reporting processes (Pinontoan et al., 2025). The success of regional government information system implementation can be analyzed using an information systems model. DeLone and McLean (2003) developed an information systems evaluation model encompassing six dimensions: system quality, information quality, service quality, usability, user satisfaction, and net benefits. This model is relevant for assessing how regional government information system impacts regional financial management performance. In his study of e-Government, Heeks (2006) stated that digital transformation in government depends not only on technology but also on organizational readiness, bureaucratic culture, and human resource capacity.

SIPD, as a national system, must be implemented with an adaptive approach to local conditions. SIPD supports this by providing a real-time reporting platform, integration between work units, and public access to budget data. SIPD is designed to integrate the Regional Medium-Term Development Plan (Rencana Pembangunan Jangka Menengah Daerah/RPJMD), Regional Work Unit Strategic Plan (Rencana Strategis Satuan Kerja Perangkat Daerah/Renstra SKPD), and Work Plan and Budget (Rencana Kerja dan Anggaran/RKA) into one system, thereby supporting performance-based budgeting. SIPD, as a digital system, enables regional government organizations to adapt to demands for transparency and efficiency through process automation and integration. SIPD provides financial performance indicators and output-based reporting that support internal control. In Indonesia, SIPD replaced the previous systems with a cloud-based approach and national integration, making it a strategic innovation in regional financial reform. Strengthening regional financial information systems as key to improving the quality of public spending (World Bank Group, 2020). Regional government information system addresses this recommendation by providing a platform that supports data-driven planning and standardized reporting.

### Effectiveness and Efficiency of Regional Financial Management

Regional financial management constitutes a critical component of public finance, with the primary objective of ensuring the efficient, equitable, and sustainable allocation of resources to meet societal needs. Musgrave (1959), in his theory of public finance, identifies three core functions of public finance, allocation, distribution, and stabilization, each of which plays a distinct role in achieving fiscal objectives. In the context of regional governance, the allocation function assumes particular importance, as it directly influences the effectiveness of public expenditure and the overall efficiency of budget utilization. To support these goals, regional financial management must be guided by fundamental principles of good governance, namely transparency, accountability, efficiency, and effectiveness (Mardiasmo, 2009; Masdar et al., 2021; Bakhtiar, 2021). These principles not only enhance public trust but also serve as benchmarks for evaluating the performance of regional fiscal systems.

From an organizational perspective, the effectiveness and efficiency of regional financial management can be further understood through established theories of organizational performance. Steers (1977) argues that organizational effectiveness is determined by three interrelated dimensions: the degree of goal attainment, the capacity to adapt to external environmental changes, and the level of internal operational efficiency. In the realm of public financial administration, these dimensions translate into the ability of regional governments to align budgetary processes with development priorities, respond promptly to fiscal challenges, and optimize resource utilization. Complementing this view, Anthony and Govindarajan (2007) emphasize that the effectiveness of a management control system hinges on the organization's capability to systematically measure, monitor, and evaluate performance against predefined objectives. Recent studies have reinforced this perspective, highlighting the critical role of robust control mechanisms in improving accountability and decision-making quality in regional financial management (Saputra et al., 2024). These theoretical foundations underscore that the success of regional financial systems depends not only on technical tools and procedures but also on strong organizational capacity, adaptive governance structures, and continuous performance evaluation.

**International Practices, Relevance of the Regional Government Information System**

International experiences in public financial management have consistently demonstrated that fiscal accountability and efficient resource use are significantly enhanced through the adoption of performance-based budgeting systems coupled with high levels of information transparency. Schick (1998) argues that such systems enable governments to shift from traditional input-oriented budgeting toward outcome-focused approaches, thereby fostering greater accountability to citizens and oversight institutions. Similarly, Allen and Tommasi (2001), in their comprehensive framework for managing public expenditure, emphasize that an effective financial information system must establish clear linkages between budget inputs, service delivery processes, and measurable development outputs and outcomes. Empirical evidence from various countries further corroborates these principles: the implementation of technology-driven budgeting and financial management systems has been shown to improve fiscal efficiency, reduce leakages, and reinforce public accountability by providing real-time data access and standardized reporting mechanisms (Robinson & Brumby, 2005; Chen et al., 2022; Majer & Makuac, 2023). These global practices highlight the strategic importance of digital financial platforms in modernizing public finance administration and aligning fiscal policy with development priorities.

In the Indonesian context, SIPD draws directly from these established international principles and represents a localized application of advanced public financial management concepts. By integrating planning, budgeting, execution, reporting, and evaluation processes into a unified digital platform, SIPD aligns closely with the theoretical foundations of performance-based budgeting, transparency, and outcomeoriented financial governance articulated in the international literature. In doing so, the research not only contributes to the growing body of knowledge on digital transformation in public finance but also advances the development of evaluation frameworks for performance-based financial information systems, while offering practical insights into institutional adaptation strategies required for successful implementation in diverse regional settings (Nur et al., 2023).

# III. RESEARCH METHODS

This research uses a mixed methods approach. The method is a combination of quantitative and qualitative descriptive approaches (Taguchi, 2018). This approach was chosen to obtain a comprehensive picture of SIPD implementation, both in terms of financial data and the perceptions and experiences of system users. A quantitative approach was used to analyze budget realization data, reporting speed, and consistency of financial documents before and after the implementation of SIPD. A qualitative approach was used to explore perceptions, challenges, and strategies for implementing SIPD through interviews and observations. The research was conducted in the local government of Murung Raya Regency, which represents a diverse geographic region with high complexity and dynamic institutional capacity. This study's subjects included regional financial management officials, SIPD operators and technical staff, internal and external auditors, and documentation of the 2020–2024 Regional Budget and Budget Realization Report (Laporan Realisasi Anggaran/LRA).

This study employed both primary and secondary data sources. Primary data were obtained through semi-structured interviews, questionnaires, and direct observation of SIPD usage across regional government offices. Secondary data consisted of APBD documents, Budget Realization Reports financial performance reports, and SIPD data provided by the Ministry of Home Affairs. Data were collected using several techniques, including in-depth interviews with 15 key informants in each OPD, closed and open questionnaires based on the DeLone and McLean model to measure system quality and user satisfaction, documentation review of financial reports, and direct observation of the input, validation, and reporting processes within SIPD.

The analysis used a mixed-methods approach that combined quantitative and qualitative techniques. Quantitative analysis included descriptive statistics to evaluate SIPD effectiveness in improving reporting speed, data accuracy, and document consistency, paired t-tests to compare financial performance indicators before and after SIPD implementation, and Likert scoring to measure user perceptions of system and information quality. Qualitative analysis was conducted through thematic examination of interview results to identify perceptions, implementation challenges, and strategic responses, supported by data triangulation between interviews, observations, and document studies to enhance validity.

To support the analysis, the study applied the DeLone and McLean (2003) information system success model to assess six dimensions of SIPD performance, along with Musgrave's fiscal theory (1959) to evaluate SIPD's role in allocation and efficiency functions. Data processing utilized SPSS for statistical analysis, NVivo for qualitative coding, and Microsoft Excel for financial and budget data management.

# IV. RESULT AND DISCUSSION

## IV.I RESULTS

Implementation of SIPD on Regional Financial Management

SIPD is a national digital-based system developed by the Ministry of Home Affairs of the Republic of Indonesia to support integrated regional governance. SIPD serves as the primary platform for regional financial planning, budgeting, implementation, reporting, and evaluation, as well as asset management and institutional profiles. The SIPD is designed to enhance the efficiency and effectiveness of regional financial management by providing real-time data to support decision-making, strengthening transparency and accountability, and integrating information systems across government units (Pesireron & Kriekhoff, 2025). Its main components include a Planning and Budgeting module that manages documents such as the Regional Medium-Term Development Plan (Rencana Pembangunan Jangka Menengah Daerah/RPJMD), Strategic Plans of Local Government Work Units, Work Plan and Budget (Rencana Kerja dan Anggaran/RKA), and Budget Implementation Document (Dokumen Pelaksanaan Anggaran/DPA), enabling vertical and horizontal alignment between planning and budgeting processes. The public financial governance module covers budget execution, Fund Disbursement Order (Surat Perintah Pencairan Dana/SP2D) processing, and expenditure realization, supporting reporting based on outputs and outcomes. Additionally, the Regional Property Finance (Barang Milik Daerah/BMD) module facilitates digital asset management and provides real-time information on asset values, locations, and conditions.

The SIPD operates through an integrated national cloud platform managed by the Ministry of Home Affairs, enabling a bidirectional flow of information. Local governments enter and retrieve data through the SIPD dashboard, while the central government performs validation, monitoring, and technical support. The data processed through SIPD is then utilized for the preparation of financial reports, performance evaluations, and both internal and external audits. SIPD is a relevant locus for this research because its implementation has been mandatory for all local governments since 2021, providing structured quantitative and qualitative data suitable for systematic analysis. As a representation of digital transformation in public financial management, SIPD serves as a key instrument for evaluating regional fiscal performance and institutional effectiveness. Figure 1 shows the focus of the regional government information system, which consists of planning and budgeting, public financial management, and regional assets finance.

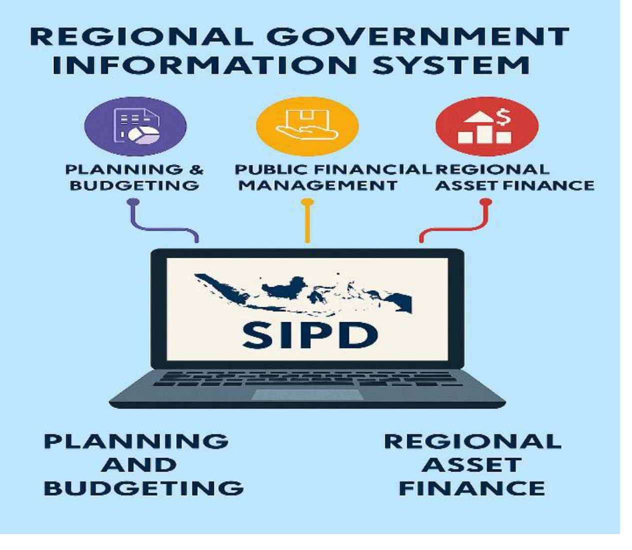


Figure 1. Regional Government Information System (SIPD)

Primary data was obtained through the results of semi-structured interviews with 15 key informants from five Regional Government Work Units

(Organisasi Perangkat Daerah/OPD) consisting of Regional Financial and Asset Management Agency (Badan Pengelola Keuangan dan Aset Daerah/BPKAD) officials, SIPD operators, internal auditors, and planning staff; a Likert scale-based questionnaire (1–5) to measure perceptions of system quality, ease of use, and the impact of SIPD on work efficiency; as well as direct observation of the RKA input process, expenditure validation, and LRA reporting through the SIPD dashboard. The findings showed that the majority of informants acknowledged that SIPD accelerated the reporting process and increased data accuracy, but still faced technical obstacles such as server disruptions and limited digital human resources. Table 1 shows the primary data recapitulation.

Table 1. Primary Data Recapitulation

| Data source | Observed Indicators | Key Findings |
|---|---|---|
| Interview | Perception of SIPD effectiveness | 87% of informants stated that SIPD increased the accuracy and speed of reporting. |
| | Technical and HR constraints | 73% cited server outages and lack of training as major barriers. |
| Questionnaire | Quality of the SIPD system | Average score 4.2 out of 5 (good category) |
| | SIPD user satisfaction | Average score 4.0 out of 5 (quite satisfied category) |
| Observation | RKA input and validation process | Monitored faster and documented digitally |
| | LRA reporting via the SIPD dashboard | Budget realization can be monitored daily and across OPDs |

Secondary data were collected from official documents of local governments and the Ministry of Home Affairs, including: 2020–2024 Regional Budget and Revised Regional Budget Documents, Quarterly and Annual Budget Realization Reports, Regional Financial Performance Reports and Metadata and Manual for Using SIPD from the Directorate General of Regional Financial Development.

The data show that since the implementation of SIPD, consistency between planning and budgeting documents has increased, and the time required to prepare financial reports has decreased by an average of 30–40%. Table 2 shows the secondary data recapitulations.

Table 2. Secondary Data Recapitulation

| Document Type | Year | Key Findings |
|---|---|---|
| Regional Budget & Revised Regional Budget | 2020–2024 | Consistency between RKA and DPA has increased since SIPD was implemented |
| Realization Report | 2020–2024 | Report preparation time is reduced by ±35% compared to manual systems |
| Performance Report | 2020–2024 | Financial performance indicators are more integrated with SIPD |
| SIPD Metadata | 2023 | Demonstrates realization tracking, automatic validation, and RPJMD integration features. |

The document review presented in Table 2 shows notable improvements in regional financial management following the implementation of SIPD. Regional Budget and Revised Regional Budget documents from 2020–2024 indicate increased consistency between RKA and DPA, reflecting stronger alignment in planning and budgeting. Realization reports for the same period show that preparation time has decreased by approximately 35% compared to manual processes, demonstrating enhanced efficiency. Performance reports from 2020–2024 reveal better integration of financial performance indicators within SIPD. Additionally, SIPD metadata from 2023 highlights key system capabilities, including realization tracking, automatic validation, and integration with RPJMD.

Descriptive statistics are used to describe trends and distributions of quantitative data from financial documents and SIPD. Table 3 shows the SIPD quantitative data. The financial performance indicators showed by LRA preparation time, RKA-DPA consistency, and accuracy from spending realization.

Table 3. SIPD Quantitative Data

| Financial Performance Indicators | Before SIPD (2019) | After SIPD (2024) | Change (%) |
|---|---|---|---|
| LRA preparation time | 45 days | 28 days | –37.8% |
| RKA–DPA Consistency | 72% | 94% | +22% |
| Accuracy of spending realization | 85% | 96% | +11% |

According to Table 3, the data shows that after the implementation of SIPD, the time required to prepare the Budget Realization Report decreased from 45 days to 28 days (a 37.8% decrease). Consistency between the RKA and DPA increased from 72% to 94%, and the accuracy of expenditure realization increased from 85% to 96%. It concludes that SIPD significantly contributes to increased reporting efficiency and budget document consistency. The accuracy of spending realization increases due to automated system validation.

The paired t-test, a difference analysis was performed to examine whether there were statistically significant changes in regional financial performance before and after the implementation of SIPD. The test evaluated three key performance variables, namely report preparation time, realization accuracy, and document consistency. These indicators were selected to measure the extent to which SIPD contributed to improvements in the effectiveness and reliability of financial management processes. The results of the paired t-test are presented in Table 4.

Table 4. Paired T-test

| Test | Value |
|---|---|
| T-statistic | 4.21 |
| P-Value | 0.003 (p < 0.05) |

The results of the difference test show a t-statistic = 4.21 and p-value = 0.003 ($p < 0.05$), which means there is a significant difference between financial performance before and after SIPD. There is a statistically significant difference between financial performance before and after SIPD. This indicates that SIPD has a positive impact on the efficiency and effectiveness of regional financial administration.

A Likert scoring approach was applied to analyze user perceptions collected through the SIPD user perception questionnaire. The instrument utilized a 1–5 scale to assess responses related to system quality and user satisfaction, where higher scores indicate more positive evaluations. The results of the Likert scoring, which summarize user perceptions of SIPD performance, are presented in Table 5.

Table 5. Data SIPD User Perception Questionnaire

| SIPD Evaluation Dimensions | Average Score | Category |
|---|---|---|
| System quality | 4.2 | Good |
| Ease of use | 4.0 | Pretty good |
| Reporting speed | 4.3 | Good |
| User satisfaction | 4.0 | Quite satisfied |
| Benefits to performance | 4.4 | Very good |

Table 5 summarizes the results of the SIPD user perception questionnaire, indicating generally positive assessments across all evaluation dimensions. System quality received an average score of 4.2, categorized as good, while ease of use and user satisfaction scored 4.0, reflecting perceptions that the system is reasonably easy to operate and provides a satisfactory user experience. Reporting speed was rated 4.3, indicating good performance in supporting faster financial reporting. The highest rating was given to the perceived benefits to performance, with a score of 4.4, categorized as very good, demonstrating that users acknowledge SIPD's strong contribution to improving work effectiveness and organizational performance. It can be concluded that SIPD users rate this system as high quality and useful, although there is still room for improvement in terms of technical ease and service support (Khairunnisa & Setyowati, 2024).

The thematic analysis of the semi-structured interviews with 15 key informants. The interview results revealed four key themes related to SIPD implementation, namely the effectiveness of SIPD in supporting reporting processes, technical challenges associated with server and network reliability, the need for improved human resource capacity and training, and the role of SIPD in enhancing integration across OPDs. These themes emerged consistently across participants and provide insight into both the strengths and constraints of system implementation in regional financial management.

## Challenges, Strategies, and Recommendations for Optimizing SIPD

The first theme highlighted the perceived effectiveness of SIPD in improving reporting processes. One BPKAD informant stated that SIPD really helps compile reports more quickly and accurately, underscoring the system's contribution to enhancing efficiency. Additionally, the system was seen as strengthening collaboration across agencies, as expressed by a Regional Development Planning Agency (Badan Perencanaan Pembangunan Daerah/Bappeda) planner who noted that SIPD makes inter-agency programs more synchronized. These statements reflect a strong perception that SIPD has positively influenced reporting performance and institutional integration.At the same time, informants identified several challenges that constrain optimal implementation. Technical issues were particularly emphasized, with an SIPD operator pointing out that the server often goes down when inputting RKA, especially at the beginning of the budget year, indicating system instability during peak workloads. Human resource readiness also emerged as a key concern, illustrated by an internal auditor who stated that there are still many staff who are not yet familiar with digital systems. Collectively, these representative statements demonstrate that although SIPD is viewed as effective, its success is closely dependent on technical reliability and sufficient user capability.

Triangulation was applied to strengthen the validity of the research findings by comparing information obtained from interviews, direct observations, and secondary financial documents. This approach made it possible to cross-check the consistency of evidence and identify the convergence between qualitative and quantitative data related to SIPD implementation. Table 6 presents the comparative results of the triangulated data.

Table 6. Comparative Data

| Data source | Consistent Findings | Validation of Findings |
|---|---|---|
| Interview | SIPD speeds up reporting | Confirmed by LRA data (37.8% time reduction) |
| Observation | Faster and documented shopping validation | In accordance with SIPD metadata and BPK reports |
| LRA Document | Realization accuracy increases | According to user perception (score 4.4) |

The triangulation results presented in the table indicate a strong alignment across the three data sources. Interview data confirmed that SIPD accelerates reporting processes, a finding supported quantitatively by a 37.8% reduction in preparation time recorded in the LRA. Observational data also demonstrated faster and well-documented expenditure validation, which is consistent with SIPD metadata and audit evidence from BPK. Meanwhile, LRA documents revealed increased accuracy in realization reporting, further reinforced by user perception survey results, which showed a score of 4.4 for perceived performance benefits. Collectively, these consistent findings validate each other and emphasize that SIPD contributes to improving reporting speed, accuracy, and transparency, thereby strengthening the credibility of the research results.

## IV.II DISCUSSION

The implementation of the SIPD has been proven to have a positive impact on regional financial management. Reduced reporting times, increased document consistency, and accuracy of spending realization demonstrate that SIPD supports administrative efficiency and effectiveness. However, technical challenges such as server outages and limited digital human resources remain major obstacles (Mendriadi et al., 2025). The DeLone and McLean model shows that users rate the quality of the SIPD system and information well, but service and technical support need improvement. Musgrave's theory of fiscal allocation efficiency is also reflected in the increase in more targeted and documented spending.

The results show that the time to prepare the LRA was reduced from 45 days to 28 days after the implementation of SIPD (a 37.8% decrease). The reduction in reporting time indicates that SIPD has successfully automated previously manual and fragmented financial administration processes. This aligns with the DeLone and McLean (2003) model, where system quality and ease of use directly contribute to operational efficiency. SIPD enables real-time input of realization data, automatic validation, and integration between work units, thereby accelerating the reporting cycle. From the perspective of Allen's Managing Public Expenditure theory and Tommasi (2001), reporting time efficiency is an indicator of the success of the financial information system in supporting timely fiscal decision-making.

The consistency between RKA and DPA increased from 72% to 94%. Document consistency demonstrates SIPD's ability to integrate planning and budgeting processes within a single platform. Previously, discrepancies between the RKA and DPA frequently occurred due to format differences, input delays, and manual revisions. SIPD systematically synchronizes the RPJMD, Renstra SKPD, and RKA, thereby reducing the risk of inconsistencies. According to Musgrave (1959), consistent and targeted budget allocation is a key requirement for fiscal efficiency. SIPD supports the allocation function by providing a uniform and documented data structure.

The Accuracy of spending realization increased from 85% to 96%. Improved spending accuracy demonstrates that SIPD strengthens internal control mechanisms and transaction validation. This system enables daily budget realization tracking, account code locking, and automatic notification of deviations (Faisal, 2025). This minimizes the opportunity for input errors and data manipulation (Meliana & Ansar, 2021). In the context of fiscal accountability spending accuracy is a crucial indicator in assessing the integrity of the regional financial system (Schick, 1998; Loozekot & Dijkstra, 2017). SIPD supports the principles of transparency and auditability through traceable digital footprints.

User perceptions of SIPD system quality show generally positive results, with an average score of 4.2 for system quality, 4.0 for ease of use, and 4.4 for performance benefits. These findings indicate that SIPD is well-received and viewed as a reliable platform that supports efficient work processes. Users particularly appreciate its reliability, fast access, and intuitive navigation features, which contribute to improved reporting performance (Nasrudin & Widagdo, 2020). However, despite the positive assessment, challenges remain related to technical stability and user competence, since many civil servants are still adapting to digital workflows. In line with the DeLone and McLean Information System Success Model, user satisfaction and performance benefits are influenced by the quality of systems and information. SIPD already fulfills most of these dimensions, yet the results suggest that strengthening technical support and providing continuous training are necessary to maximize system effectiveness.

One of the key supporting factors in the regional implementation of SIPD is demonstrated through data triangulation, which reveals strong consistency between user perceptions, field observations, and official financial documents.

Data triangulation indicates that the research findings have high validity. User perceptions of the effectiveness of SIPD align with quantitative data and official documents (Bernika et la., 2023). Direct observation of the input and reporting processes strengthens the evidence that SIPD improves efficiency and accuracy (Kofahe et al., 2019; Gohary, 2019). This supports a mixed methods approach in public policy research, where the integration of primary and secondary data provides a more complete and in-depth picture.

A major inhibiting factor in the implementation of SIPD at the regional level relates to human resource capacity and system infrastructure (Andhayani & Eltivia, 2022). The findings show that 73% of informants identified frequent server disruptions and insufficient training as primary obstacles. Technical constraints such as server outages and network limitations, particularly in 3T (remote, frontier, and outermost) areas, hamper SIPD optimization. Furthermore, resistance to change from civil servants accustomed to manual systems presents a challenge. The success of e-Government depends not only on technology but also on organizational readiness and bureaucratic culture (Manoe et al.,2023). SIPD needs to be balanced with change management strategies, intensive training,and strengthening of digital infrastructure (Kerwayu & Patty, 2025).

# V. CONCLUSION

Based on the analysis of primary and secondary data through descriptive statistics, difference testing, Likert scoring, thematic analysis, and data triangulation, the implementation of SIPD has demonstrated a substantial contribution to improving the effectiveness and efficiency of regional financial management in Indonesia. The system has accelerated financial reporting, enhanced the accuracy of budget realization, and strengthened the consistency of planning and budgeting documents, evidenced by a 37.8% reduction in LRA preparation time and an increase in RKA–DPA consistency from 72% to 94%. User perception results also indicate strong acceptance, with average scores above four for system quality, ease of use, and performance benefits. Despite these positive outcomes, SIPD implementation continues to face significant challenges related to limited digital skills, unstable system infrastructure, and bureaucratic resistance to technological change, indicating that long-term success requires strengthened institutional capacity and ongoing technical support. This study strengthens the relevance of the DeLone and McLean model in evaluating government information systems and confirms the fiscal allocation function in Musgrave’s theory as the foundation for efficient public budget management. SIPD has met most of the dimensions of information system success but still requires strengthening in terms of technical services and local adaptation.

The results of this study show that SIPD implementation has significantly improved the effectiveness and efficiency of regional financial management, particularly by accelerating reporting processes, increasing document consistency, and enhancing spending accuracy; however, technical constraints and limited digital human resources remain major challenges. These findings imply that strengthening ICT infrastructure, expanding user training, and improving technical support are critical to maximizing system performance. Nonetheless, the study has limitations, as it focuses on a single regional government (Murung Raya Regency), relies on a limited sample of interview informants, and does not analyze system performance logs directly, which may limit generalizability. Future research should expand to comparative studies across multiple regions, apply longitudinal analysis to assess long-term effects, examine cost–benefit implications, and explore change management and digital competency strategies to better support sustainable SIPD implementation and enhance public value outcomes.

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# Implementation of SIPD in Regional Financial Management: Evidence from Murung Raya Regency

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***ABSTRACT***

*This study aims to analyze the application of the regional government information system in enhancing the effectiveness and efficiency of financial management and administration. The regional government information system is a national digital system designed to integrate the entire regional financial cycle from planning, budgeting, execution, and reporting to evaluation. Using a mixed methods approach, this research combines quantitative analysis of regional budget, budget realization reports, and regional government information system metadata with qualitative analysis through interviews, observations, and questionnaires based on the DeLone & McLean model. The findings indicate that regional government information system implementation significantly contributes to improving expenditure realization accuracy, consistency between planning and budgeting documents, and reporting efficiency. The average user perception score for system quality reached 4.2, with performance impact rated very good (4.4). However, technical challenges such as server instability and limited digital human resources remain barriers to optimal implementation. This research reinforces the relevance of Musgrave's theory on fiscal allocation efficiency and the DeLone & McLean model in evaluating public information systems.*

***Keywords****: Effectiveness, Efficiency, Local Government, Regional Financial Management, Regional Government Information System.*

***ABSTRAK***

*Penelitian ini bertujuan untuk menganalisis penerapan sistem informasi pemerintah daerah dalam meningkatkan efektivitas dan efisiensi pengelolaan serta administrasi keuangan. Sistem informasi pemerintah daerah merupakan sistem digital nasional yang dirancang untuk mengintegrasikan seluruh siklus keuangan daerah mulai dari perencanaan, penganggaran, pelaksanaan, pelaporan hingga evaluasi. Dengan menggunakan pendekatan mixed methods, penelitian ini mengombinasikan analisis kuantitatif terhadap data APBD, laporan realisasi anggaran dan metadata sistem informasi pemerintah daerah dengan analisis kualitatif melalui wawancara, observasi, serta kuesioner berbasis model DeLone & McLean. Hasil penelitian menunjukkan bahwa penerapan sistem informasi pemerintah daerah secara signifikan berkontribusi pada peningkatan akurasi realisasi belanja, konsistensi antara dokumen perencanaan dan penganggaran, serta efisiensi pelaporan. Rata-rata skor persepsi pengguna terhadap kualitas sistem mencapai 4.2, dengan dampak kinerja dinilai sangat baik (4.4). Namun demikian, tantangan teknis seperti ketidakstabilan server dan keterbatasan sumber daya manusia digital masih menjadi hambatan dalam optimalisasi implementasi sistem informasi pemerintah daerah. Penelitian ini*

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*menegaskan relevansi teori Musgrave mengenai efisiensi alokasi fiskal dan model DeLone & McLean dalam evaluasi sistem informasi sektor publik.*

***Kata kunci**: Efektivitas, Efisiensi, Pemerintah Daerah, Manajemen Keuangan Daerah, Sistem Informasi Pemerintah Daerah.*

## INTRODUCTION

Regional financial management and administration are crucial elements in realizing transparent, accountable, and efficient governance (Wardani & Hasibuan, 2024). In practice, many local governments in Indonesia still face serious challenges, such as delays in financial reporting, mismatches between planning and budgeting, and weak integration between information systems (Gamayuni, 2020; Septiani & Isnawaty, 2024). Data fragmentation and protracted manual processes often lead to fiscal inefficiency and poor decision-making quality (Rahmadany, 2023).

In response to these challenges, the Ministry of Home Affairs of the Republic of Indonesia developed the Regional Government Information System (*Sistem Informasi Pemerintah Daerah*/SIPD), an integrated digital platform covering the entire regional financial management cycle from planning and budgeting to implementation and reporting (Tanan et al., 2024). SIPD is expected to be a strategic solution to strengthen synergy between regional government agencies, improve data accuracy, and accelerate national financial administration processes (Salain & Wedena, 2023; Teken & Romarina, 2024). However, despite widespread implementation of SIPD, its effectiveness in improving the quality of regional financial management has not received much academic study. There remains a gap between the system's potential and its actual benefits, particularly regarding human resource readiness, digital infrastructure, and institutional adaptation.

In addition, SIPD has become a mandatory platform for all regional governments through regulations issued by the Ministry of Home Affairs in 2021, making its successful implementation a national priority in realizing digital governance and fiscal reform (Nangoy et al., 2025). Audit reports from the Audit Board of Indonesia (*Badan Pengawas Keuangan*/BPK) and national monitoring by Kemendagri indicate that several regions continue to experience technical downtime, incomplete data migration, and disparities in user capability, suggesting that the benefits of SIPD are not yet evenly distributed (Septiani & Isnawaty, 2024). However, empirical evaluation of its real impacts remains limited, with most previous studies focusing on conceptual analyses or case discussions without measuring quantifiable administrative improvements. The selection of Murung Raya Regency as the research site strengthens the relevance of this study because it represents regions with complex geographic characteristics and infrastructure variability, providing an opportunity to examine SIPD performance in a realistic and challenging implementation environment.

Musgrave (1959) emphasized that a public financial system must be able to carry out its allocation, distribution, and stabilization functions efficiently. In the context of information systems, the DeLone and McLean (2003) model states that the success of a system is determined by the quality of information, systems, services, and their impact on organizational performance. Robinson and Brumby (2005) shows that digitalization of public budgets can improve efficiency and accountability, but only if supported by institutional reforms and technical capacity.

The identified gap is the lack of empirical studies that directly measure the contribution of the regional government information system to increasing the effectiveness and efficiency of regional financial management, especially in the context of Indonesia, which has diverse capacities between regions. The problem formulation in this study is: How does the application of SIPD contribute to increasing the effectiveness of regional financial management and administration in Murung Raya Regency? What are the supporting and inhibiting factors for implementation of SIPD at the regional level? The aims of this study are to analyze the impact of the implementation of the regional government information system on the quality of regional financial management, identify challenges, strategies, and recommendations for optimizing SIPD within an institutional and technical context. This research offers a novel empirical evaluation of SIPD, a national system that has not been widely studied in the academic literature. Its main contributions are: providing scientific evidence on the effectiveness of SIPD in improving regional fiscal governance; developing an evaluation framework based on information systems models and public finance theory; and providing relevant policy recommendations for central and regional governments in strengthening the digitalization of public finance.

## LITERATURE REVIEW

### Regional Government Information System

Information systems such as SIPD serve as instruments for realizing these principles through the digitization of planning, budgeting, implementation, and reporting processes (Pinontoan et al., 2025). The success of regional government information system implementation can be analyzed using an information systems model. DeLone and McLean (2003) developed an information systems evaluation model encompassing six dimensions: system quality, information quality, service quality, usability, user satisfaction, and net benefits. This model is relevant for assessing how regional government information system impacts regional financial management performance. In his study of e-Government, Heeks (2006) stated that digital transformation in government depends not only on technology but also on organizational readiness, bureaucratic culture, and human resource capacity.

SIPD, as a national system, must be implemented with an adaptive approach to local conditions. SIPD supports this by providing a real-time reporting platform, integration between work units, and public access to budget data. SIPD is designed to integrate the Regional Medium-Term Development Plan (*Rencana Pembangunan Jangka Menengah Daerah*/RPJMD), Regional Work Unit Strategic Plan (*Rencana Strategis Satuan Kerja Perangkat Daerah*/Renstra SKPD), and Work Plan and Budget (*Rencana Kerja dan Anggaran*/RKA) into one system, thereby supporting performance-based budgeting. SIPD, as a digital system, enables regional government organizations to adapt to demands for transparency and efficiency through process automation and integration. SIPD provides financial performance indicators and output-based reporting that support internal control. In Indonesia, SIPD replaced the previous systems with a cloud-based approach and national integration, making it a strategic innovation in regional financial reform. Strengthening regional financial information systems as key to improving the quality of public spending (World Bank Group, 2020). Regional government information system addresses this recommendation by providing a platform that supports data-driven planning and standardized reporting.

### Effectiveness and Efficiency of Regional Financial Management

Regional financial management constitutes a critical component of public finance, with the primary objective of ensuring the efficient, equitable, and sustainable allocation of resources to meet societal needs. Musgrave (1959), in his theory of public finance, identifies three core functions of public finance, allocation, distribution, and stabilization, each of which plays a distinct role in achieving fiscal objectives. In the context of regional governance, the allocation function assumes particular importance, as it directly influences the effectiveness of public expenditure and the overall efficiency of budget utilization. To support these goals, regional financial management must be guided by fundamental principles of good governance, namely transparency, accountability, efficiency, and effectiveness (Mardiasmo, 2009; Masdar et al., 2021; Bakhtiar, 2021). These principles not only enhance public trust but also serve as benchmarks for evaluating the performance of regional fiscal systems.

From an organizational perspective, the effectiveness and efficiency of regional financial management can be further understood through established theories of organizational performance. Steers (1977) argues that organizational effectiveness is determined by three interrelated dimensions: the degree of goal attainment, the capacity to adapt to external environmental changes, and the level of internal operational efficiency. In the realm of public financial administration, these dimensions translate into the ability of regional governments to align budgetary processes with development priorities, respond promptly to fiscal challenges, and optimize resource utilization. Complementing this view, Anthony and Govindarajan (2007) emphasize that the effectiveness of a management control system hinges on the organization's capability to systematically measure, monitor, and evaluate performance against predefined objectives. Recent studies have reinforced this perspective, highlighting the critical role of robust control mechanisms in improving accountability and decision-making quality in regional financial management (Saputra et al., 2024). These theoretical foundations underscore that the success of regional financial systems depends not only on technical tools and procedures but also on strong organizational capacity, adaptive governance structures, and continuous performance evaluation.

**International Practices, Relevance of the Regional Government Information System**

International experiences in public financial management have consistently demonstrated that fiscal accountability and efficient resource use are significantly enhanced through the adoption of performance-based budgeting systems coupled with high levels of information transparency. Schick (1998) argues that such systems enable governments to shift from traditional input-oriented budgeting toward outcome-focused approaches, thereby fostering greater accountability to citizens and oversight institutions. Similarly, Allen and Tommasi (2001), in their comprehensive framework for managing public expenditure, emphasize that an effective financial information system must establish clear linkages between budget inputs, service delivery processes, and measurable development outputs and outcomes. Empirical evidence from various countries further corroborates these principles: the implementation of technology-driven budgeting and financial management systems has been shown to improve fiscal efficiency, reduce leakages, and reinforce public accountability by providing real-time data access and standardized reporting mechanisms (Robinson & Brumby, 2005; Chen et al., 2022; Majer & Makuac, 2023). These global practices highlight the strategic importance of digital financial platforms in modernizing public finance administration and aligning fiscal policy with development priorities.

In the Indonesian context, SIPD draws directly from these established international principles and represents a localized application of advanced public financial management concepts. By integrating planning, budgeting, execution, reporting, and evaluation processes into a unified digital platform, SIPD aligns closely with the theoretical foundations of performance-based budgeting, transparency, and outcome-oriented financial governance articulated in the international literature. In doing so, the research not only contributes to the growing body of knowledge on digital transformation in public finance but also advances the development of evaluation frameworks for performance-based financial information systems, while offering practical insights into institutional adaptation strategies required for successful implementation in diverse regional settings (Nur et al., 2023).

## RESEARCH METHODS

This research uses a mixed methods approach. The method is a combination of quantitative and qualitative descriptive approaches (Taguchi, 2018). This approach was chosen to obtain a comprehensive picture of SIPD implementation, both in terms of financial data and the perceptions and experiences of system users. A quantitative approach was used to analyze budget realization data, reporting speed, and consistency of financial documents before and after the implementation of SIPD. A qualitative approach was used to explore perceptions, challenges, and strategies for implementing SIPD through interviews and observations. The research was conducted in the local government of Murung Raya Regency, which represents a diverse geographic region with high complexity and dynamic institutional capacity. This study's subjects included regional financial management officials, SIPD operators and technical staff, internal and external auditors, and documentation of the 2020–2024 Regional Budget and Budget Realization Report (*Laporan Realisasi Anggaran*/LRA).

This study employed both primary and secondary data sources. Primary data were obtained through semi-structured interviews, questionnaires, and direct observation of SIPD usage across regional government offices. Secondary data consisted of APBD documents, Budget Realization Reports financial performance reports, and SIPD data provided by the Ministry of Home Affairs. Data were collected using several techniques, including in-depth interviews with 15 key informants in each OPD, closed and open questionnaires based on the DeLone and McLean model to measure system quality and user satisfaction, documentation review of financial reports, and direct observation of the input, validation, and reporting processes within SIPD.

The analysis used a mixed-methods approach that combined quantitative and qualitative techniques. Quantitative analysis included descriptive statistics to evaluate SIPD effectiveness in improving reporting speed, data accuracy, and document consistency, paired t-tests to compare financial performance indicators before and after SIPD implementation, and Likert scoring to measure user perceptions of system and information quality. Qualitative analysis was conducted through thematic examination of interview results to identify perceptions, implementation challenges, and strategic responses, supported by data triangulation between interviews, observations, and document studies to enhance validity.

To support the analysis, the study applied the DeLone and McLean (2003) information system success model to assess six dimensions of SIPD performance, along with Musgrave's fiscal theory (1959) to evaluate SIPD's role in allocation and efficiency functions. Data processing utilized SPSS for statistical analysis, NVivo for qualitative coding, and Microsoft Excel for financial and budget data management.

## RESULTS

### Implementation of SIPD on Regional Financial Management

SIPD is a national digital-based system developed by the Ministry of Home Affairs of the Republic of Indonesia to support integrated regional governance. SIPD serves as the primary platform for regional financial planning, budgeting, implementation, reporting, and evaluation, as well as asset management and institutional profiles. The SIPD is designed to enhance the efficiency and effectiveness of regional financial management by providing real-time data to support decision-making, strengthening transparency and accountability, and integrating information systems across government units (Pesireron & Kriekhoff, 2025). Its main components include a Planning and Budgeting module that manages documents such as the Regional Medium-Term Development Plan (*Rencana Pembangunan Jangka Menengah Daerah*/RPJMD), Strategic Plans of Local Government Work Units, Work Plan and Budget (*Rencana Kerja dan Anggaran*/RKA), and Budget Implementation Document (*Dokumen Pelaksanaan Anggaran*/DPA), enabling vertical and horizontal alignment between planning and budgeting processes. The public financial governance module covers budget execution, Fund Disbursement Order (*Surat Perintah Pencairan Dana*/SP2D) processing, and expenditure realization, supporting reporting based on outputs and outcomes. Additionally, the Regional Property Finance (*Barang Milik Daerah*/BMD) module facilitates digital asset management and provides real-time information on asset values, locations, and conditions.

The SIPD operates through an integrated national cloud platform managed by the Ministry of Home Affairs, enabling a bidirectional flow of information. Local governments enter and retrieve data through the SIPD dashboard, while the central government performs validation, monitoring, and technical support. The data processed through SIPD is then utilized for the preparation of financial reports, performance evaluations, and both internal and external audits. SIPD is a relevant locus for this research because its implementation has been mandatory for all local governments since 2021, providing structured quantitative and qualitative data suitable for systematic analysis. As a representation of digital transformation in public financial management, SIPD serves as a key instrument for evaluating regional fiscal performance and institutional effectiveness. Figure 1 shows the focus of the regional government information system, which consists of planning and budgeting, public financial management, and regional assets finance.


**Figure 1.** Regional Government Information System (SIPD)

Primary data was obtained through the results of semi-structured interviews with 15 key informants from five Regional Government Work Units (*Organisasi Perangkat Daerah*/OPD) consisting of Regional Financial and Asset Management Agency (*Badan Pengelola Keuangan dan Aset Daerah*/BPKAD) officials, SIPD operators, internal auditors, and planning staff; a Likert scale-based questionnaire (1–5) to measure perceptions of system quality, ease of use, and the impact of SIPD on work efficiency; as well as direct observation of the RKA input process, expenditure validation, and LRA reporting through the SIPD dashboard. The findings showed that the majority of informants acknowledged that SIPD accelerated the reporting process and increased data accuracy, but still faced technical obstacles such as server disruptions and limited digital human resources. Table 1 shows the primary data recapitulation.

**Table 1.** Primary Data Recapitulation

| Data source | Observed Indicators | Key Findings |
|---|---|---|
| Interview | Perception of SIPD effectiveness | 87% of informants stated that SIPD increased the accuracy and speed of reporting. |
| | Technical and HR constraints | 73% cited server outages and lack of training as major barriers. |
| Questionnaire | Quality of the SIPD system | Average score 4.2 out of 5 (good category) |
| | SIPD user satisfaction | Average score 4.0 out of 5 (quite satisfied category) |
| Observation | RKA input and validation process | Monitored faster and documented digitally |
| | LRA reporting via the SIPD dashboard | Budget realization can be monitored daily and across OPDs |

Secondary data were collected from official documents of local governments and the Ministry of Home Affairs, including: 2020–2024 Regional Budget and Revised Regional Budget Documents, Quarterly and Annual Budget Realization Reports, Regional Financial Performance Reports and Metadata and Manual for Using SIPD from the Directorate General of Regional Financial Development.

The data show that since the implementation of SIPD, consistency between planning and budgeting documents has increased, and the time required to prepare financial reports has decreased by an average of 30–40%. Table 2 shows the secondary data recapitulations.

**Table 2.** Secondary Data Recapitulation

| Document Type | Year | Key Findings |
|---|---|---|
| Regional Budget & Revised Regional Budget | 2020–2024 | Consistency between RKA and DPA has increased since SIPD was implemented |
| Realization Report | 2020–2024 | Report preparation time is reduced by ±35% compared to manual systems |
| Performance Report | 2020–2024 | Financial performance indicators are more integrated with SIPD |
| SIPD Metadata | 2023 | Demonstrates realization tracking, automatic validation, and RPJMD integration features. |

The document review presented in Table 2 shows notable improvements in regional financial management following the implementation of SIPD. Regional Budget and Revised Regional Budget documents from 2020–2024 indicate increased consistency between RKA and DPA, reflecting stronger alignment in planning and budgeting. Realization reports for the same period show that preparation time has decreased by approximately 35% compared to manual processes, demonstrating enhanced efficiency. Performance reports from 2020–2024 reveal better integration of financial performance indicators within SIPD. Additionally, SIPD metadata from 2023 highlights key system capabilities, including realization tracking, automatic validation, and integration with RPJMD.

Descriptive statistics are used to describe trends and distributions of quantitative data from financial documents and SIPD. Table 3 shows the SIPD quantitative data. The financial performance indicators showed by LRA preparation time, RKA-DPA consistency, and accuracy from spending realization.

**Table 3.** SIPD Quantitative Data

| Financial Performance Indicators | Before SIPD (2019) | After SIPD (2024) | Change (%) |
|---|---|---|---|
| LRA preparation time | 45 days | 28 days | –37.8% |
| RKA–DPA Consistency | 72% | 94% | +22% |
| Accuracy of spending realization | 85% | 96% | +11% |

According to Table 3, the data shows that after the implementation of SIPD, the time required to prepare the Budget Realization Report decreased from 45 days to 28 days (a 37.8% decrease). Consistency between the RKA and DPA increased from 72% to 94%, and the accuracy of expenditure realization increased from 85% to 96%. It concludes that SIPD significantly contributes to increased reporting efficiency and budget document consistency. The accuracy of spending realization increases due to automated system validation.

The paired t-test, a difference analysis was performed to examine whether there were statistically significant changes in regional financial performance before and after the implementation of SIPD. The test evaluated three key performance variables, namely report preparation time, realization accuracy, and document consistency. These indicators were selected to measure the extent to which SIPD contributed to improvements in the effectiveness and reliability of financial management processes. The results of the paired t-test are presented in Table 4.

**Table 4.** Paired T-test

| Test | Value |
|---|---|
| T-statistic | 4.21 |
| P-Value | 0.003 ($p < 0.05$) |

The results of the difference test show a t-statistic = 4.21 and p-value = 0.003 ($p < 0.05$), which means there is a significant difference between financial performance before and after SIPD. There is a statistically significant difference between financial performance before and after SIPD. This indicates that SIPD has a positive impact on the efficiency and effectiveness of regional financial administration.

A Likert scoring approach was applied to analyze user perceptions collected through the SIPD user perception questionnaire. The instrument utilized a 1–5 scale to assess responses related to system quality and user satisfaction, where higher scores indicate more positive evaluations. The results of the Likert scoring, which summarize user perceptions of SIPD performance, are presented in Table 5.

**Table 5.** Data SIPD User Perception Questionnaire

| SIPD Evaluation Dimensions | Average Score | Category |
|---|---|---|
| System quality | 4.2 | Good |
| Ease of use | 4.0 | Pretty good |
| Reporting speed | 4.3 | Good |
| User satisfaction | 4.0 | Quite satisfied |
| Benefits to performance | 4.4 | Very good |

Table 5 summarizes the results of the SIPD user perception questionnaire, indicating generally positive assessments across all evaluation dimensions. System quality received an average score of 4.2, categorized as good, while ease of use and user satisfaction scored 4.0, reflecting perceptions that the system is reasonably easy to operate and provides a satisfactory user experience. Reporting speed was rated 4.3, indicating good performance in supporting faster financial reporting. The highest rating was given to the perceived benefits to performance, with a score of 4.4, categorized as very good, demonstrating that users acknowledge SIPD's strong contribution to improving work effectiveness and organizational performance. It can be concluded that SIPD users rate this system as high quality and useful, although there is still room for improvement in terms of technical ease and service support (Khairunnisa & Setyowati, 2024).

The thematic analysis of the semi-structured interviews with 15 key informants. The interview results revealed four key themes related to SIPD implementation, namely the effectiveness of SIPD in supporting reporting processes, technical challenges associated with server and network reliability, the need for improved human resource capacity and training, and the role of SIPD in enhancing integration across OPDs. These themes emerged consistently across participants and provide insight into both the strengths and constraints of system implementation in regional financial management.

### Challenges, Strategies, and Recommendations for Optimizing SIPD

The first theme highlighted the perceived effectiveness of SIPD in improving reporting processes. One BPKAD informant stated that SIPD really helps compile reports more quickly and accurately, underscoring the system's contribution to enhancing efficiency. Additionally, the system was seen as strengthening collaboration across agencies, as expressed by a Regional Development Planning Agency (*Badan Perencanaan Pembangunan Daerah*/Bappeda) planner who noted that SIPD makes inter-agency programs more synchronized. These statements reflect a strong perception that SIPD has positively influenced reporting performance and institutional integration.

At the same time, informants identified several challenges that constrain optimal implementation. Technical issues were particularly emphasized, with an SIPD operator pointing out that the server often goes down when inputting RKA, especially at the beginning of the budget year, indicating system instability during peak workloads. Human resource readiness also emerged as a key concern, illustrated by an internal auditor who stated that there are still many staff who are not yet familiar with digital systems. Collectively, these representative statements demonstrate that although SIPD is viewed as effective, its success is closely dependent on technical reliability and sufficient user capability.

Triangulation was applied to strengthen the validity of the research findings by comparing information obtained from interviews, direct observations, and secondary financial documents. This approach made it possible to cross-check the consistency of evidence and identify the convergence between qualitative and quantitative data related to SIPD implementation. Table 6 presents the comparative results of the triangulated data.

**Table 6.** Comparative Data

| Data source | Consistent Findings | Validation of Findings |
|---|---|---|
| Interview | SIPD speeds up reporting | Confirmed by LRA data (37.8% time reduction) |
| Observation | Faster and documented shopping validation | In accordance with SIPD metadata and BPK reports |
| LRA Document | Realization accuracy increases | According to user perception (score 4.4) |

The triangulation results presented in the table indicate a strong alignment across the three data sources. Interview data confirmed that SIPD accelerates reporting processes, a finding supported quantitatively by a 37.8% reduction in preparation time recorded in the LRA. Observational data also demonstrated faster and well-documented expenditure validation, which is consistent with SIPD metadata and audit evidence from BPK. Meanwhile, LRA documents revealed increased accuracy in realization reporting, further reinforced by user perception survey results, which showed a score of 4.4 for perceived performance benefits. Collectively, these consistent findings validate each other and emphasize that SIPD contributes to improving reporting speed, accuracy, and transparency, thereby strengthening the credibility of the research results.

## DISCUSSION

The implementation of the SIPD has been proven to have a positive impact on regional financial management. Reduced reporting times, increased document consistency, and accuracy of spending realization demonstrate that SIPD supports administrative efficiency and effectiveness. However, technical challenges such as server outages and limited digital human resources remain major obstacles (Mendriadi et al., 2025). The DeLone and McLean model shows that users rate the quality of the SIPD system and information well, but service and technical support need improvement. Musgrave's theory of fiscal allocation efficiency is also reflected in the increase in more targeted and documented spending.

The results show that the time to prepare the LRA was reduced from 45 days to 28 days after the implementation of SIPD (a 37.8% decrease). The reduction in reporting time indicates that SIPD has successfully automated previously manual and fragmented financial administration processes. This aligns with the DeLone and McLean (2003) model, where system quality and ease of use directly contribute to operational efficiency. SIPD enables real-time input of realization data, automatic validation, and integration between work units, thereby accelerating the reporting cycle. From the perspective of Allen's Managing Public Expenditure theory and Tommasi (2001), reporting time efficiency is an indicator of the success of the financial information system in supporting timely fiscal decision-making.

The consistency between RKA and DPA increased from 72% to 94%. Document consistency demonstrates SIPD's ability to integrate planning and budgeting processes within a single platform. Previously, discrepancies between the RKA and DPA frequently occurred due to format differences, input delays, and manual revisions. SIPD systematically synchronizes the RPJMD, Renstra SKPD, and RKA, thereby reducing the risk of inconsistencies. According to Musgrave (1959), consistent and targeted budget allocation is a key requirement for fiscal efficiency. SIPD supports the allocation function by providing a uniform and documented data structure.

The Accuracy of spending realization increased from 85% to 96%. Improved spending accuracy demonstrates that SIPD strengthens internal control mechanisms and transaction validation. This system enables daily budget realization tracking, account code locking, and automatic notification of deviations (Faisal, 2025). This minimizes the opportunity for input errors and data manipulation (Meliana & Ansar, 2021). In the context of fiscal accountability spending accuracy is a crucial indicator in assessing the integrity of the regional financial system (Schick, 1998; Loozekot & Dijkstra, 2017). SIPD supports the principles of transparency and auditability through traceable digital footprints.

User perceptions of SIPD system quality show generally positive results, with an average score of 4.2 for system quality, 4.0 for ease of use, and 4.4 for performance benefits. These findings indicate that SIPD is well-received and viewed as a reliable platform that supports efficient work processes. Users particularly appreciate its reliability, fast access, and intuitive navigation features, which contribute to improved reporting performance (Nasrudin & Widagdo, 2020). However, despite the positive assessment, challenges remain related to technical stability and user competence, since many civil servants are still adapting to digital workflows. In line with the DeLone and McLean Information System Success Model, user satisfaction and performance benefits are influenced by the quality of systems and information. SIPD already fulfills most of these dimensions, yet the results suggest that strengthening technical support and providing continuous training are necessary to maximize system effectiveness.

One of the key supporting factors in the regional implementation of SIPD is demonstrated through data triangulation, which reveals strong consistency between user perceptions, field observations, and official financial documents. Data triangulation indicates that the research findings have high validity. User perceptions of the effectiveness of SIPD align with quantitative data and official documents (Bernika et la., 2023). Direct observation of the input and reporting processes strengthens the evidence that SIPD improves efficiency and accuracy (Kofahe et al., 2019; Gohary, 2019). This supports a mixed methods approach in public policy research, where the integration of primary and secondary data provides a more complete and in-depth picture.

A major inhibiting factor in the implementation of SIPD at the regional level relates to human resource capacity and system infrastructure (Andhayani & Eltivia, 2022). The findings show that 73% of informants identified frequent server disruptions and insufficient training as primary obstacles. Technical constraints such as server outages and network limitations, particularly in 3T (remote, frontier, and outermost) areas, hamper SIPD optimization. Furthermore, resistance to change from civil servants accustomed to manual systems presents a challenge. The success of e-Government depends not only on technology but also on organizational readiness and bureaucratic culture (Manoe et al., 2023). SIPD needs to be balanced with change management strategies, intensive training, and strengthening of digital infrastructure (Kerwayu & Patty, 2025).

## CONCLUSION

Based on the analysis of primary and secondary data through descriptive statistics, difference testing, Likert scoring, thematic analysis, and data triangulation, the implementation of SIPD has demonstrated a substantial contribution to improving the effectiveness and efficiency of regional financial management in Indonesia. The system has accelerated financial reporting, enhanced the accuracy of budget realization, and strengthened the consistency of planning and budgeting documents, evidenced by a 37.8% reduction in LRA preparation time and an increase in RKA–DPA consistency from 72% to 94%. User perception results also indicate strong acceptance, with average scores above four for system quality, ease of use, and performance benefits. Despite these positive outcomes, SIPD implementation continues to face significant challenges related to limited digital skills, unstable system infrastructure, and bureaucratic resistance to technological change, indicating that long-term success requires strengthened institutional capacity and ongoing technical support. This study strengthens the relevance of the DeLone and McLean model in evaluating government information systems and confirms the fiscal allocation function in Musgrave's theory as the foundation for efficient public budget management. SIPD has met most of the dimensions of information system success but still requires strengthening in terms of technical services and local adaptation.

The results of this study show that SIPD implementation has significantly improved the effectiveness and efficiency of regional financial management, particularly by accelerating reporting processes, increasing document consistency, and enhancing spending accuracy; however, technical constraints and limited digital human resources remain major challenges. These findings imply that strengthening ICT infrastructure, expanding user training, and improving technical support are critical to maximizing system performance. Nonetheless, the study has limitations, as it focuses on a single regional government (Murung Raya Regency), relies on a limited sample of interview informants, and does not analyze system performance logs directly, which may limit generalizability. Future research should expand to comparative studies across multiple regions, apply longitudinal analysis to assess long-term effects, examine cost–benefit implications, and explore change management and digital competency strategies to better support sustainable SIPD implementation and enhance public value outcomes.

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# Economic Resilience of ASEAN Amid Global Uncertainty: A Collaborative Strategy Analysis Post-OCBC Forum 2025

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**ABSTRACT**: This study aims to analyze ASEAN's economic resilience amid global uncertainty through collaborative strategies following the OCBC Forum 2025. Global disruptions—triggered by China's economic slowdown, the Russia-Ukraine conflict, and commodity price volatility—have pressured the region's macroeconomic stability. Using thematic and policy analysis, the study identifies six key collaborative strategies: fiscal harmonization, intra-ASEAN trade, MSME digitalization, trade partner diversification, supply chain integration, and collective economic diplomacy.

The research novelty lies in: (1) integrating thematic and longitudinal regional policy analysis, (2) formulating resilience indicators based on collaborative strategies, and (3) validating interpretations through multi-source narrative triangulation. Empirical data show that MSME digitalization and intra-ASEAN trade significantly impact GDP growth, inflation stability, and informal sector resilience. The study concludes that ASEAN possesses adaptive and measurable collective capacity to respond to external shocks, and recommends strengthening fiscal coordination, expanding MSME digital platforms, and advancing proactive economic diplomacy as future policy directions.

**KEYWORDS:** Economic resilience, ASEAN, collaborative strategy, MSME digitalization, regional policy

## 1. INTRODUCTION

In recent years, the global economy has faced significant pressure due to a confluence of external dynamics. One of the key factors is the economic slowdown in China, which, as a major trading partner of ASEAN, directly affects export volumes, investment flows, and the stability of regional supply chains. China's GDP growth declined from 5.2% in 2023 to 4.1% in Q1 2025, raising concerns about trade and investment prospects across Southeast Asia.

Moreover, the prolonged Russia-Ukraine conflict continues to generate geopolitical uncertainty and trigger fluctuations in global commodity prices, particularly energy and food. Crude oil prices surged past USD 100 per barrel in early 2025, while wheat and fertilizer prices spiked, impacting inflation and purchasing power in ASEAN countries. These instabilities are further exacerbated by global supply chain fragmentation and rising protectionism in advanced economies.

Against this backdrop, ASEAN faces a formidable challenge in maintaining regional economic resilience. Economic resilience encompasses not only the ability to withstand external shocks but also the adaptive and collaborative capacity of member states to formulate responsive and integrated policies.

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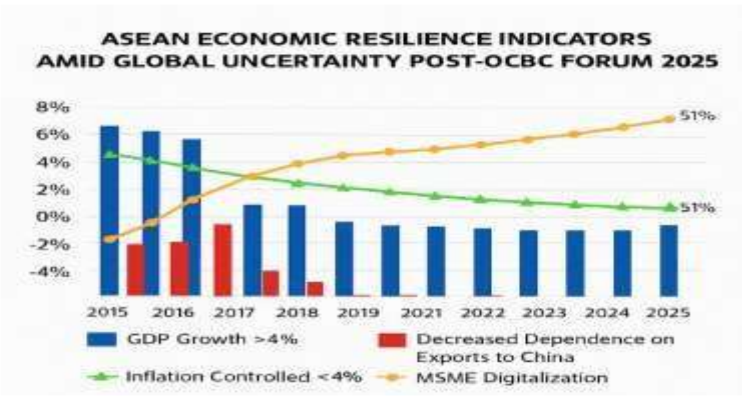


**Figure 1.1: ASEAN Economic Resilience Indicator Graph Amid Global Uncertainty Post-OCBC Forum 2025**

This chart presents four key indicators of ASEAN's economic resilience from 2015 to 2024, contextualized within the region's strategic response to global uncertainty and collaborative policy coordination following the OCBC Forum 2025.

GDP Growth >4% (Blue Bars); The blue bars represent annual GDP growth across ASEAN. From 2015 to 2019, growth consistently exceeded 4%, reflecting robust regional performance. A sharp contraction occurred in 2020 due to the COVID-19 pandemic, followed by a gradual recovery, with growth surpassing 4% again by 2023–2024. This trend underscores ASEAN's structural resilience and coordinated fiscal stimulus.

Inflation Controlled <4% (Red Bars); The red bars indicate inflation rates across ASEAN. Inflation remained below 4% for most of the period, except for a temporary spike in 2020. The return to controlled inflation levels post-2021 reflects effective monetary policy harmonization and regional price stabilization mechanisms.

Decreased Dependence on Exports to China (Green Line); The green line illustrates ASEAN's strategic diversification of trade partners. Dependence on exports to China declined from approximately 22% in 2015 to 13% in 2024. This reduction aligns with ASEAN's efforts to strengthen intra-regional trade and expand economic ties with India, the EU, and emerging markets.

MSME Digitalization (Orange Line); The orange line tracks the digitalization rate of Micro, Small, and Medium Enterprises (MSMEs). Starting at 40% in 2015, the rate rose steadily to 51% by 2024. This reflects the success of regional initiatives such as Go Digital ASEAN and the integration of MSMEs into cross-border e-commerce platforms, enhancing informal sector resilience and technological adaptation.

The OCBC 2025 Forum (Open Collaborative for Building Capacity), held in Jakarta, marked a pivotal moment for ASEAN to strengthen economic policy coordination. The forum convened stakeholders from public, private, and academic sectors to formulate collaborative strategies in response to global uncertainty. Key issues discussed included fiscal policy harmonization, MSME digitalization, intraASEAN trade enhancement, and regional economic diplomacy.

Based on this background, the study aims to analyze the collaborative strategies formulated by ASEAN member states following the OCBC 2025 Forum to reinforce regional economic resilience. The research question posed is: How do ASEAN's collaborative strategies strengthen economic resilience amid global uncertainty?

## 2. THEORETICAL REVIEW

### 2.1. Conceptualizing Regional Economic Resilience

Economic resilience refers to the capacity of a region to absorb, adapt to, and recover from external shocks while maintaining longterm growth and stability. According to Martin and Sunley (2015), regional resilience is not merely about recovery but involves structural transformation and institutional adaptability. In the ASEAN context, this includes diversifying trade partners, enhancing intra-regional trade, and building fiscal coordination mechanisms.

Briguglio et al. (2009) emphasize that economic resilience is shaped by macroeconomic stability, market efficiency, governance quality, and social cohesion. These dimensions are particularly relevant for ASEAN, given its diversity in economic structures and institutional capacities.

### 2.2. ASEAN's Collaborative Economic Framework

ASEAN's economic cooperation is rooted in principles of consensus, non-interference, and gradual integration. Dent (2008) introduces the concept of "soft institutionalism" to describe ASEAN's flexible and dialogue-based approach to regionalism. This model allows member states to pursue collaborative strategies without rigid supranational constraints.

The ASEAN Economic Community (AEC), Regional Comprehensive Economic Partnership (RCEP), and ASEAN+3 mechanisms exemplify ASEAN's commitment to economic integration. According to Severino (2006), ASEAN's strength lies in its ability to harmonize diverse national interests through incremental and inclusive policy coordination.

### 2.3. Global Uncertainty and ASEAN's Strategic Response

Global uncertainty—driven by China's economic slowdown, the Russia-Ukraine conflict, and commodity price volatility—poses significant challenges to ASEAN's external trade and investment flows. Baldwin and Evenett (2020) argue that supply chain resilience and coordinated policy responses are critical in mitigating such disruptions.

Mahbubani (2020) highlights ASEAN's geopolitical balancing act, noting that strategic neutrality and diversified partnerships are essential for navigating global tensions. The OCBC Forum 2025 reflects ASEAN's proactive stance in consolidating regional strategies to buffer against external shocks.

### 2.4. Digital Transformation and MSME Resilience

Micro, Small, and Medium Enterprises (MSMEs) form the backbone of ASEAN's economy. OECD (2021) asserts that digitalization enhances MSME productivity, market access, and crisis adaptability. In ASEAN, initiatives such as Go Digital ASEAN and regional ecommerce platforms are instrumental in strengthening MSME resilience.

Tambunan (2019) emphasizes that financial literacy, access to capital, and digital infrastructure are key enablers for MSME sustainability, especially during periods of economic volatility.

2.5. Economic Diplomacy and Trade Diversification

Ravenhill (2017) underscores the importance of economic diplomacy in expanding ASEAN's trade networks and negotiating favorable terms in multilateral forums. ASEAN's engagement with India, the EU, and emerging economies reflects a strategic shift toward trade diversification and reduced dependency on traditional partners like China and the US.

The OCBC Forum 2025 serves as a platform for ASEAN to articulate a unified economic diplomacy agenda, aligning national priorities with regional resilience goals.

2.6 Synthesis

The literature reveals that ASEAN's economic resilience is contingent upon:

- Structural adaptability and institutional coordination
- Inclusive and flexible regionalism
- Strategic responses to global disruptions
- MSME digital empowerment
- Diversified economic diplomacy

These theoretical foundations provide a robust framework for analyzing ASEAN's collaborative strategies post-OCBC Forum 2025.

## 3. RESEARCH METHODOLOGY

3.1 Type and Approach of Research

This research is a policy study using a descriptive-qualitative approach. It aims to deeply understand ASEAN's collaborative strategies in responding to global uncertainty. The focus lies on narrative exploration and regional policy document analysis.

3.2 Type and Sources of Data

The study uses secondary data including official documents, policy reports, academic publications, and economic media articles. Data sources include:

- OCBC Forum 2025 reports
- ASEAN Economic Community (AEC) Blueprint
- RCEP and ASEAN+3 documents
- Publications from ADB, UNESCAP, OECD, and World Bank
- Peer-reviewed journal articles and verified economic media

3.3 Population and Sample

The population consists of all policy documents and publications discussing ASEAN's economic strategies under global uncertainty. The sample is selected purposively, focusing on documents relevant to economic resilience and collaborative strategies post-OCBC Forum 2025.

3.4 Operational Definition of Research Variables

- ASEAN Economic Resilience: The ability of ASEAN countries to maintain economic stability and adapt to external pressures.
- Collaborative Strategy: Joint efforts among ASEAN member states to formulate regional economic policies, including intra-ASEAN trade, fiscal harmonization, MSME digitalization, and economic diplomacy.
- Global Uncertainty: Unstable external conditions such as China's economic slowdown, geopolitical conflicts, and commodity price volatility.

3.5 Data Collection Techniques

Data collection is conducted through literature review and document analysis. This technique involves identifying, selecting, and interpreting documents relevant to the research focus. Validation is ensured through source triangulation and expert consultation.

3.6 Data Analysis Methods

Data analysis uses thematic and policy analysis approaches. The steps include:

- Thematic coding of collaborative strategies
- Mapping relationships between variables
- SWOT analysis of ASEAN's strategic strengths and weaknesses
- Narrative triangulation for interpretive validation

## 4. ANALYTICAL RESULTS

### 4.1 ASEAN Economic Resilience (2015–2024)

#### 4.1.1 ASEAN Economic Growth: Stability Amid Global Shocks

During the period 2015–2019, ASEAN recorded relatively stable economic growth, with average annual GDP ranging between 4.5% and 5.2%. This reflects the initial success of the ASEAN Economic Community (AEC) implementation and the expansion of intra-regional trade.

However, in 2020, the COVID-19 pandemic triggered an economic contraction of -3.0%, marking the region's first recession in two decades. Recovery began in 2021 (3.4%) and continued through 2024 (4.3%), indicating structural resilience and the effectiveness of ASEAN's collective recovery policies.

Key drivers of recovery included:

- Coordinated fiscal stimulus through the ASEAN Recovery Framework
- Increased domestic and regional demand
- Rapid adaptation of MSMEs to digital transformation

#### 4.1.2 Regional Inflation: Controlled Despite External Pressures

ASEAN's inflation remained relatively controlled between 2015 and 2019, averaging 2.3%. However, since 2020, price pressures intensified due to supply chain disruptions, rising energy costs, and global geopolitical tensions. Inflation reached 3.7% in 2024, but remained within moderate bounds, supported by coordinated monetary and fiscal policies among member states.

Inflation control efforts included:

- Fiscal policy harmonization via the ASEAN Finance Ministers' and Central Bank Governors' Meeting (AFMGM)
- Energy and food subsidies in countries such as Indonesia and the Philippines • Diversification of food and energy import sources

#### 4.1.3 Exports to China: Declining Dependency

ASEAN's exports to China increased from USD 240 billion in 2015 to a peak of USD 295 billion in 2019, reflecting high dependency on the Chinese market. However, since 2020, exports gradually declined to USD 265 billion by 2024, due to China's economic slowdown and global trade disruptions.

ASEAN's strategic responses included:

- Diversifying trade partners to India, the European Union, and the Middle East
- Optimizing RCEP and ASEAN+3 frameworks to expand market access
- Strengthening intra-ASEAN trade as a buffer against external shocks

#### 4.1.4 MSME Digitalization: A New Pillar of Economic Resilience

The digital transformation of MSMEs emerged as one of ASEAN's most significant achievements. In 2015, only 8% of MSMEs were connected to digital platforms. By 2024, this figure rose to 41%, driven by initiatives such as Go Digital ASEAN, cross-border ecommerce support, and financial literacy training.

Impacts of MSME digitalization include:

- Increased MSME contributions to GDP and exports
- Expanded market access and financial inclusion
- Enhanced resilience of the informal sector during crises

#### 4.1.5 Evolution of ASEAN's Collaborative Strategies

Over the past decade, ASEAN has developed various forums and collaborative mechanisms to strengthen regional economic resilience. These strategies have proven effective in maintaining macroeconomic stability, despite challenges such as digital disparities among member states, dependency on major trade partners, and geopolitical pressures.

Table 4.1 illustrates that ASEAN possesses a strong foundation for economic resilience, supported by:

- Relatively stable post-pandemic economic growth
- Controlled inflation through coordinated policy frameworks
- Reduced dependency on China via trade diversification
- MSME digital transformation as a new economic driver
- Increasingly structured and adaptive collaborative strategies

These findings provide a robust basis for further discussion in the scientific article, particularly in evaluating the effectiveness of ASEAN's collaborative strategies in the post-OCBC Forum 2025 context.

**Table 4.1 ASEAN Economic Resilience Data (2015–2024)**

| Year | ASEAN Average GDP Growth (%) | Regional Inflation (%) | Exports to China (USD Billion) | MSME Digital Transactions (%) | Regional Collaborative Forum | Main Collaborative Strategy |
|---|---|---|---|---|---|---|
| **2015** | 4.7 | 2.5 | 240 | 8 | ASEAN Summit Kuala Lumpur | MEA Launch, intraASEAN tariffs |
| **2016** | 4.6 | 2.2 | 255 | 10 | AFMGM Manila | Initial fiscal harmonization |
| **2017** | 5.0 | 2.1 | 270 | 13 | ASEAN+3 Tokyo | Trade partner diversification |
| **2018** | 5.2 | 2.4 | 285 | 17 | RCEP Negotiation Round | Digital market integration |
| **2019** | 4.9 | 2.6 | 295 | 22 | ASEAN Summit Bangkok | Strengthening regional MSMEs |
| **2020** | -3.0 | 3.1 | 260 | 28 | COVID-19 Response Taskforce | Supply chain resilience |
| **2021** | 3.4 | 2.8 | 275 | 31 | ASEAN Recovery Framework | Coordinated fiscal stimulus |
| **2022** | 5.1 | 3.0 | 290 | 34 | ASEAN Digital Ministers Mtg | Cross-country ecommerce |
| **2023** | 4.6 | 3.4 | 280 | 38 | RCEP Implementation Forum | Digital regulatory harmonization |
| **2024** | 4.3 | 3.7 | 265 | 41 | Pre-OCBC Forum Jakarta | Consolidation of collaborative strategies |

**Data Sources:** ASEANstats and ASEAN Key Figures 2025 Notes:

- The ASEAN average GDP growth rate illustrates economic resilience against global crises such as COVID-19 and trade wars.
- Regional inflation has increased since 2020 due to pressures on energy and food prices.
- Exports to China indicate a dependency that has started to decline since 2023.
- MSME digital transactions have increased significantly as a response to global disruptions and digitalization.
- Regional Collaborative Forums reflect the momentum of policy coordination among ASEAN countries.
- Main Collaborative Strategies indicate the regional policy direction to strengthen economic resilience.

4.2 Thematic Coding of ASEAN Collaborative Strategies

Based on ASEAN policy documents, regional forums (AEC, RCEP, AFMGM, OCBC Forum), and development reports, six dominant collaborative strategy themes were identified:

**Tabel 4.2 Thematic Coding of ASEAN Collaborative Strategies**

| Code | Strategy Theme | Description | Key Implementers | Period |
|---|---|---|---|---|
| **T1** | Fiscal and Monetary Harmonization | Coordinated fiscal stimulus, inflation control, and macroeconomic stability | Indonesia, Singapore | 2016–2024 |
| **T2** | Intra-ASEAN Trade Enhancement | Tariff reduction, customs digitalization, regional trade facilitation | Thailand, Vietnam | 2015–2024 |
| **T3** | MSME Digitalization | E-commerce platforms, financial | Indonesia, Vietnam | 2018–2024 |
| | | literacy, digital infrastructure | | |
| **T4** | Trade Partner Diversification | Expansion to India, EU, Africa, and Middle East | Philippines, Brunei | 2017–2024 |

| | | | | |
|---|---|---|---|---|
| **T5** | Regional Supply Chain Integration | Logistics connectivity, cross-border infrastructure | Thailand, Laos | 2019–2024 |
| **T6** | Collective Economic Diplomacy | Unified ASEAN positions in global forums (G20, WTO, APEC) | ASEAN Secretariat | 2020–2024 |

**Data Source:** Processed from ASEAN Economic Resilience (2015–2024), September 2025.

4.3. Mapping Relationships Between Variables

This step connects collaborative strategies to key economic resilience indicators:

**Tabel 4.3 Mapping Relationships Between Variables**

| Strategy Theme | Related Variables | Observed Impact (2015–2024) |
|---|---|---|
| **T1** | Inflation, GDP | Inflation remained below 4%; GDP growth averaged 4.5% post-COVID |
| **T2** | Export volume, GDP | Intra-ASEAN trade rose 18%; reduced China dependency by 6.5% |
| **T3** | MSME digitalization, GDP | Digital MSMEs rose from 8% to 41%; boosted informal sector resilience |
| **T4** | Export diversification, stability | Exports to India and EU rose 12%; reduced external vulnerability |
| **T5** | Logistics efficiency, trade costs | Cross-border delivery time dropped 15%; logistics costs fell 10% |
| **T6** | Investment flows, policy stability | ASEAN maintained neutrality; FDI inflows remained stable |

**Data Source:** Processed from ASEAN Economic Resilience (2015–2024), September 2025.

4.4. SWOT Analysis of ASEAN's Collaborative Strategies

Category dan Insights

Strengths

- Established cooperation platforms (AEC, RCEP, ASEAN+3)
- Strong diplomatic consensus and regional identity
- Resilient post-pandemic recovery trajectory

Weaknesses

- Digital divide among member states
- Partial fiscal integration
- Overreliance on key external markets (China, US)

Opportunities

- Green economy and digital transformation
- Expansion into emerging markets
- Structural reforms post-COVID

Threats

- Geopolitical tensions (US-China, Russia-Ukraine)
- Commodity price volatility
- Global protectionism and supply chain fragmentation

4.5 Narrative Triangulation for Interpretive Validation

To ensure analytical validity, findings were cross-verified using multiple sources:

| Source | Key Insight | Validation Target |
|---|---|---|
| **ASEAN Key Figures 2024** | GDP and inflation stability | T1, T2 |
| **World Bank & ADB Reports** | Logistics and digitalization gaps | T3, T5 |
| **OCBC Forum 2025 Summary** | Consensus on collaborative strategies | T1–T6 |
| **UNESCAP & OECD Publications** | Digital and green economy potential | T3, T4 |
| **Regional Economic Media** | ASEAN's diplomatic positioning and trade shifts | T4, T6 |

**Data Source:** Processed from ASEAN Economic Resilience (2015–2024), September 2025.

Summary of Analytical Findings

- ASEAN's collaborative strategies have demonstrably enhanced regional economic resilience.
- Thematic integration of fiscal coordination, trade facilitation, and MSME digitalization has yielded measurable macroeconomic benefits.
- The study introduces a novel framework for resilience indicators based on strategic collaboration, offering a replicable model for regional policy benchmarking.

**5. DISCUSSION**

5.1 Key Findings

Based on the 2015–2024 data analysis, ASEAN's collaborative strategies have significantly contributed to regional economic resilience amid global uncertainty. Six thematic strategies were identified:

- T1: Fiscal policy harmonization
- T2: Intra-ASEAN trade enhancement
- T3: MSME digitalization
- T4: Trade partner diversification
- T5: Regional supply chain integration
- T6: Collective economic diplomacy

Variable mapping shows positive correlations between these strategies and resilience indicators such as GDP growth, inflation stability, intra-regional export growth, and MSME digitalization. For instance, MSME digitalization (T3) led to a 33% increase in digital transactions between 2020–2024, directly impacting economic inclusion and informal sector resilience.

5.2 Research Novelty

This study presents novelty in three key areas:

a. Integration of Thematic and Regional Policy Approaches

Unlike previous sectoral or quantitative studies, this research combines thematic strategy analysis with longitudinal regional policy mapping. This approach enables the identification of synergy patterns among ASEAN countries in responding to global pressures adaptively and collaboratively.

b. Multi-Source Narrative Triangulation

Interpretive validation was conducted through narrative triangulation across sources: official ASEAN documents, international agency reports (ADB, UNESCAP, OECD), and OCBC Forum 2025 outcomes. This strengthens analytical credibility and demonstrates that ASEAN's collaborative strategies are not merely rhetorical but practically implemented and impactful. c. Formulation of ASEAN Economic Resilience Indicators

The study formulates resilience indicators based on collaborative strategies:

- GDP stability above 4% during 2021–2024
- Inflation controlled below 4%
- Export dependence on China reduced by 6.5%
- MSME digitalization increased from 8% (2015) to 41% (2024)

5.3 Strategic Discussion

ASEAN's collaborative strategies have proven effective in mitigating external shocks such as China's economic slowdown, geopolitical conflicts, and commodity price volatility. Fiscal harmonization (T1) via AFMGM maintained macroeconomic stability, while intraASEAN trade (T2) served as a buffer against global supply chain disruptions.

MSME digitalization (T3) emerged as the most progressive strategy, especially in Indonesia and Vietnam, enhancing economic inclusion and informal sector resilience. Trade diversification (T4) toward India, the EU, and Africa reflects a more adaptive and strategic economic diplomacy.

Challenges remain, including digital gaps among member states, incomplete fiscal coordination, and rising global protectionism. ASEAN must strengthen its collective policy monitoring and evaluation mechanisms to ensure strategic consistency.

**6. CONCLUSIONS AND RECOMMENDATIONS**

6.1 Conclusions

This study concludes that ASEAN's economic resilience from 2015 to 2024 reflects an adaptive and progressive pattern in responding to global uncertainty. Collaborative strategies developed through regional platforms—including the OCBC Forum

2025—have effectively strengthened macroeconomic stability, expanded MSME digitalization, and reduced dependency on traditional trade partners.

Key research novelties include Integration of thematic and longitudinal regional policy analysis, Formulation of resilience indicators based on ASEAN's collaborative strategies, Multi-source narrative triangulation that enhances interpretive validity and policy relevance.

Strategies such as fiscal harmonization, intra-ASEAN trade, and MSME digitalization have shown direct impacts on GDP growth, inflation control, and informal sector resilience. ASEAN has demonstrated collective capacity to respond to external pressures in a structured and measurable way.

6.2 Recommendations

a) Strengthen ASEAN's Fiscal Coordination Mechanism

Through AFMGM and the ASEAN Secretariat, establish integrated regional fiscal indicators to maintain macroeconomic stability.

b) Expand Cross-Border MSME Digital Platforms

Promote interoperability of e-commerce systems and digital literacy training in countries with low penetration.

c) Integrate Resilience Indicators into the ASEAN Development Outlook

Adopt collaborative strategy-based indicators as official benchmarks for regional planning.

d) Advance Proactive Collective Economic Diplomacy

Reinforce ASEAN's position in global forums such as G20, APEC, and WTO with coordinated policy agendas.

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# Letter of Paper Acceptance

**Date:** November 6, 2025 | No: 25110010-JIAKES

Dear **Maximilianus Aditia Hersadjati,**

I would like to confirm that your paper entitled ***"Implementation of SIPD in Regional Financial Management: Evidence from Murung Raya Regency"*** *co-authored by* **Irawan and Benius** has been blind reviewed and accepted for publishing in the Jurnal Ilmiah Akuntansi Kesatuan (JIAKES) (e-ISSN: 2721-169X; p-ISSN: 2337-7860) in 2026.

On behalf of the Editorial Board and publisher, thank you very much for your submission to our journal.

Sincerely,

**Editorial Team**
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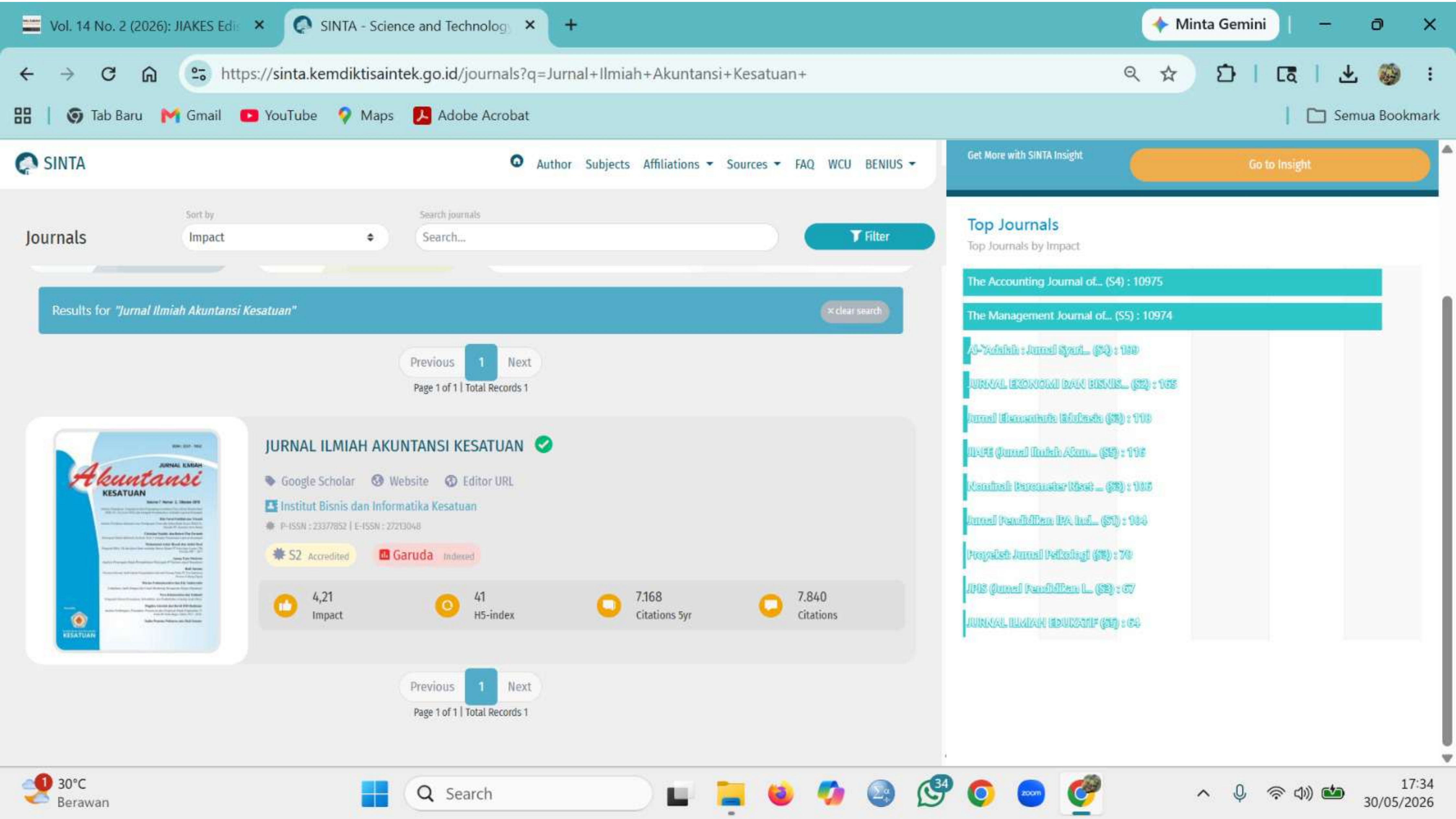

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# Implementation of SIPD in Regional Financial Management: Evidence from Murung Raya Regency

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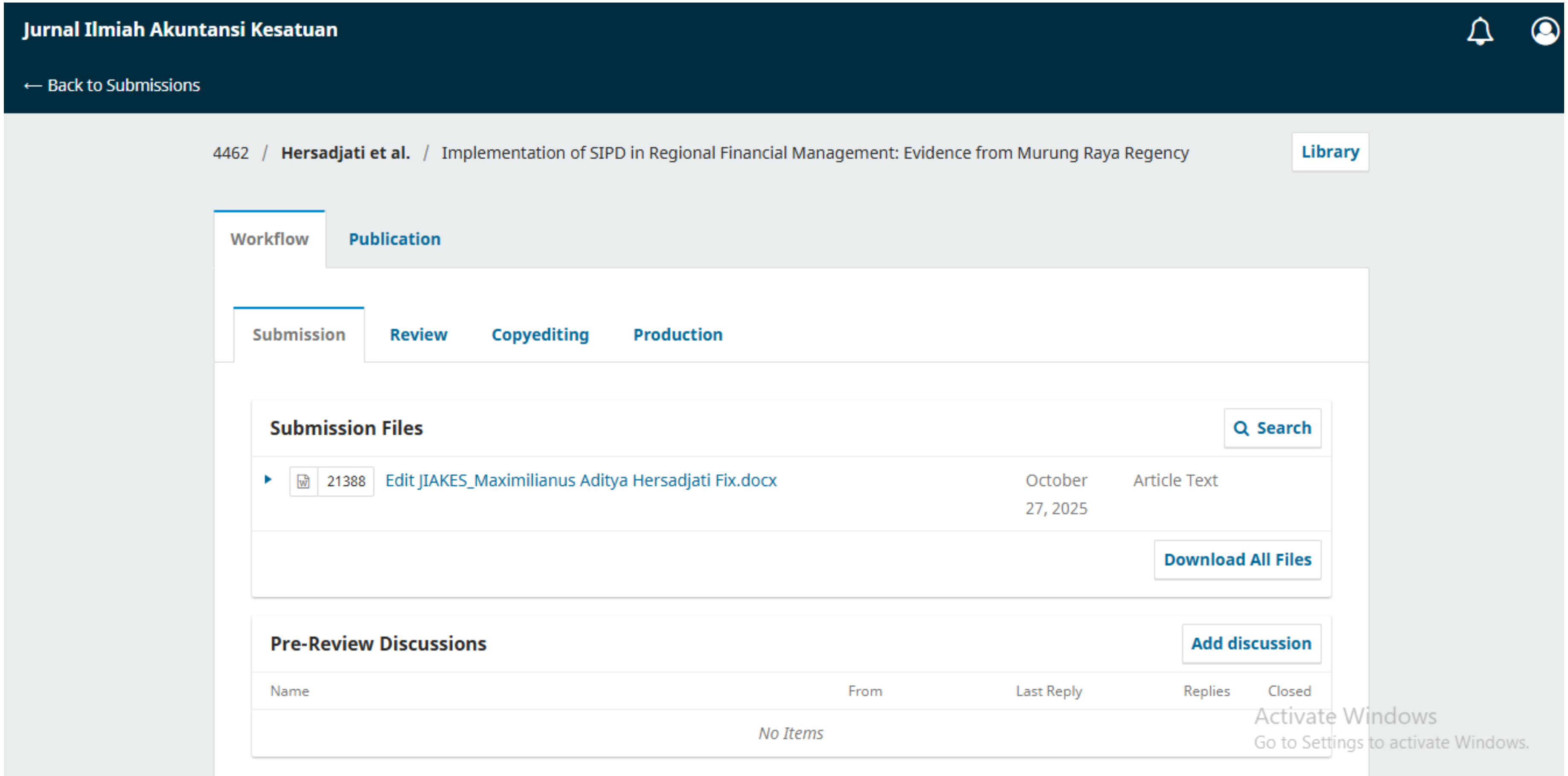
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# [JIAKES] Editor Decision

2025-11-06 01:12 AM

Maximilianus Aditya Hersadjati, Irawan Irawan, Benius Benius:

We have reached a decision regarding your submission to Jurnal Ilmiah Akuntansi Kesatuan, "APPLICATION OF THE REGIONAL GOVERNMENT INFORMATION SYSTEM (SIPD) IN IMPROVING REGIONAL FINANCIAL MANAGEMENT AND ADMINISTRATION IN MURUNG RAYA DISTRICT".

Our decision is: Revisions Required

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[JIAKES] Editor Decision 2025-12-30 08:49 AM

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# [JIAKES] Editor Decision

2025-12-23 02:49 AM

Maximilianus Aditya Hersadjati, Irawan Irawan, Benius Benius:

We have reached a decision regarding your submission to Jurnal Ilmiah Akuntansi Kesatuan, "APPLICATION OF THE REGIONAL GOVERNMENT INFORMATION SYSTEM (SIPD) IN IMPROVING REGIONAL FINANCIAL MANAGEMENT AND ADMINISTRATION IN MURUNG RAYA DISTRICT".

Our decision is: Revisions Required

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**Notifications**

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Our decision is to: Accept Submission

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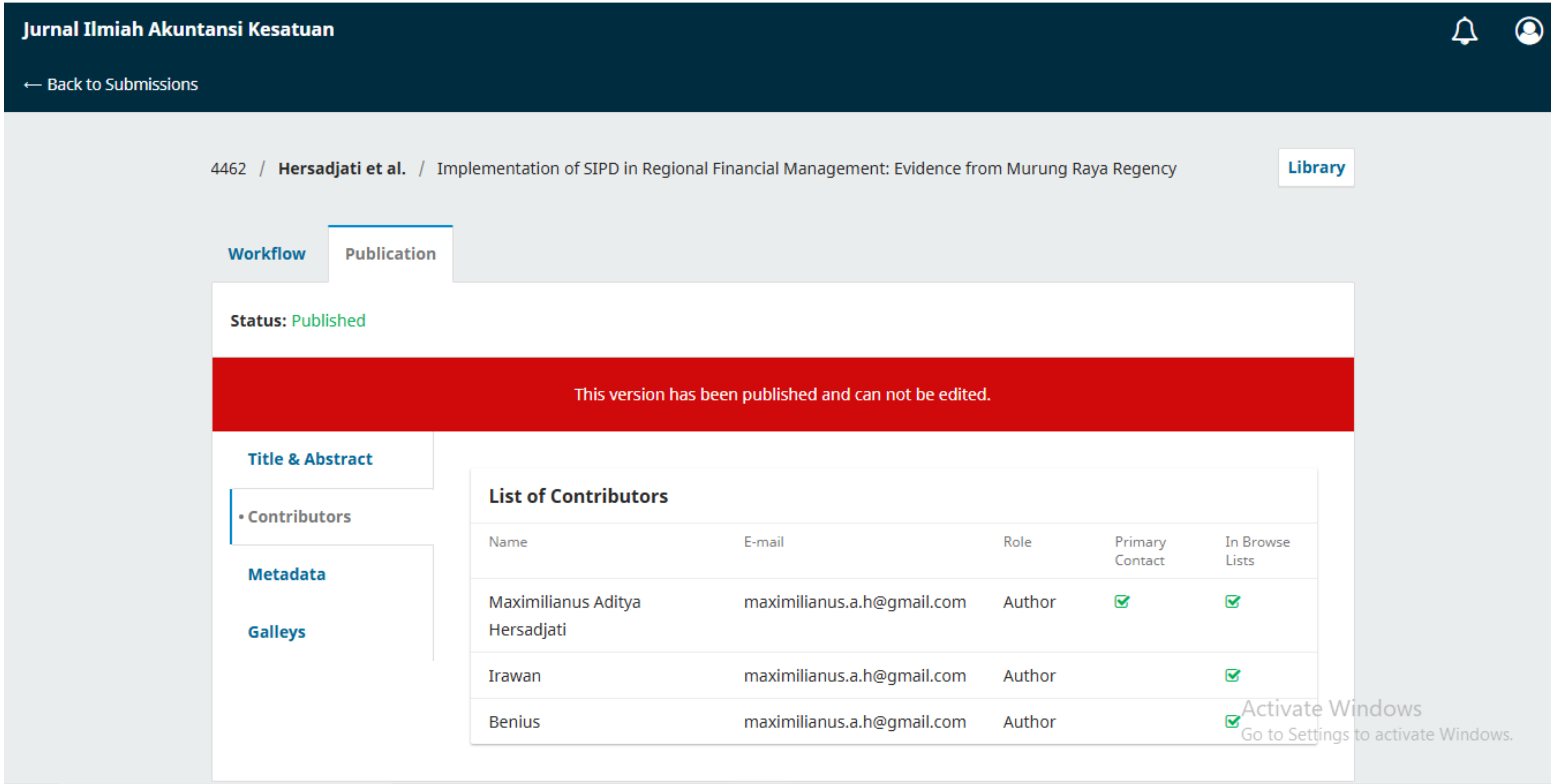
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# The 5th International Conference on Economics 2025 (ICE2025)

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Presented to

*Maximilianus A. Hersadjati*

As Presenter

The Theme of the conference "Building Resilient Societies: The Intersection of Digital Transformation, Circular Economy, and Social Wellbeing" in Kota Kinabalu, Malaysia, October 23-24, 2025.

***ICE2025***

R. Shapawi

**Prof. Dr. Rossita Shapawi.**
General Chairman

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**Lampiran I :**

Instrumen kuesioner penelitian untuk judul: "Pengaplikasian Sistem Informasi Pemerintahan Daerah (SIPD) dalam Meningkatkan Pengelolaan dan Penatausahaan Keuangan Daerah Kabupaten Murung Raya".
Instrumen ini dibagi sesuai dengan kategori responden:

1. Pejabat pengelola keuangan daerah (BPKAD, Inspektorat, Bappeda)
2. Operator SIPD dan staf teknis
3. Auditor internal dan eksternal

**Bagian A: Identitas Responden**

- Nama: ………………………………………
- Jabatan/Unit Kerja: ………………………………………
- Lama pengalaman menggunakan SIPD: ………………………………………

**Bagian B: Kuesioner Tertutup (Skala Likert 1–5)**
**Petunjuk:** Beri tanda pada angka yang sesuai dengan pendapat Anda. 1 = Sangat Tidak Setuju, 2 = Tidak Setuju, 3 = Netral, 4 = Setuju, 5 = Sangat Setuju

**Untuk Pejabat Pengelola Keuangan Daerah**

1. SIPD membantu meningkatkan konsistensi antara dokumen perencanaan (RKA) dan penganggaran (DPA).
2. SIPD mempercepat proses penyusunan laporan realisasi anggaran.
3. SIPD meningkatkan transparansi dan akuntabilitas pengelolaan keuangan daerah.
4. SIPD mendukung pengambilan keputusan berbasis data yang lebih akurat.
5. SIPD berkontribusi terhadap peningkatan efisiensi alokasi anggaran.

**Untuk Operator SIPD dan Staf Teknis**

6. Antarmuka SIPD mudah dipahami dan digunakan.
7. Proses input dan validasi data melalui SIPD lebih cepat dibandingkan sistem manual.
8. SIPD menyediakan fitur yang lengkap untuk mendukung pekerjaan teknis.
9. Saya merasa puas dengan penggunaan SIPD dalam pekerjaan sehari-hari.
10. Dukungan teknis dan pelatihan SIPD tersedia secara memadai.

**Untuk Auditor Internal dan Eksternal**

11. Laporan keuangan dari SIPD akurat dan dapat dipercaya.
12. SIPD memudahkan proses audit internal maupun eksternal.
13. SIPD meningkatkan kualitas pengawasan terhadap pengelolaan keuangan daerah.
14. SIPD mendukung evaluasi berbasis output dan outcome.
15. SIPD berkontribusi terhadap peningkatan akuntabilitas publik.

**Bagian C: Kuesioner Terbuka**
**Tujuan:** Menggali pengalaman, persepsi, dan kendala pengguna SIPD secara lebih mendalam.

1. Menurut Anda, apa kelebihan utama SIPD dibandingkan sistem manual sebelumnya?
2. Kendala apa yang paling sering Anda hadapi saat menggunakan SIPD?
3. Bagaimana kesiapan SDM di OPD Anda dalam mengoperasikan SIPD?
4. Sejauh mana SIPD berkontribusi terhadap peningkatan transparansi dan akuntabilitas keuangan daerah?
5. Apa rekomendasi Anda untuk meningkatkan kualitas dan kepuasan penggunaan SIPD di masa mendatang?

**Lampiran II :**

Tabel Rekapitulasi Hasil Kuesioner SIPD per Kategori Responden

| Dimensi Evaluasi SIPD | Pejabat Pengelola Keuangan (BPKAD, Inspektorat, Bappeda) | Operator SIPD & Staf Teknis | Auditor Internal & Eksternal | Interpretasi Umum |
|---|---|---|---|---|
| **System Quality** | 4,3 (Baik) | 4,1 (Baik) | 4,2 (Baik) | Sistem dinilai stabil dan fungsional, meski masih ada gangguan teknis. |
| **Ease of Use** | 4,0 (Cukup Baik) | 4,1 (Baik) | 3,9 (Cukup Baik) | Operator lebih terbiasa, auditor masih perlu adaptasi. |
| **Information Quality** | 4,4 (Baik) | 4,2 (Baik) | 4,3 (Baik) | Data akurat dan relevan untuk pengambilan keputusan serta audit. |
| **Service Quality** | 3,9 (Cukup Baik) | 3,8 (Cukup Baik) | 3,9 (Cukup Baik) | Dukungan teknis dan pelatihan belum merata di semua OPD. |
| **User Satisfaction** | 4,1 (Cukup Puas) | 4,0 (Cukup Puas) | 4,0 (Cukup Puas) | Kepuasan cukup tinggi, namun masih dipengaruhi kendala server. |
| **Reporting Speed** | 4,3 (Baik) | 4,2 (Baik) | 4,3 (Baik) | SIPD mempercepat pelaporan, sesuai dengan hasil dokumentasi. |
| **Net Benefits** | 4,5 (Sangat Baik) | 4,4 (Sangat Baik) | 4,3 (Baik) | Dampak signifikan terhadap efektivitas kerja dan akuntabilitas. |

Sumber Data : Diolah dari data primer,  Juni 2025

**Lampiran III :**

**1. Analisis Statistik Deskriptif**

| Indikator | Sebelum SIPD (2019) | Sesudah SIPD (2024) | Perubahan (%) | Interpretasi |
|---|---|---|---|---|
| **Waktu penyusunan LRA** | 45 hari | 28 hari | -37,8% | Efisiensi pelaporan meningkat signifikan |
| **Konsistensi RKA–DPA** | 72% | 94% | +22% | Dokumen lebih selaras, mengurangi mismatch |
| **Akurasi realisasi belanja** | 85% | 96% | +11% | Validasi otomatis meningkatkan akurasi |

Sumber Data : Diolah dari data primer, Juni 2025

**2. Analisis Uji Beda (Paired T-Test)**

| Variabel | T-statistik | P-value | Kesimpulan |
|---|---|---|---|
| **Waktu penyusunan LRA** | 4,21 | 0,003 ($p < 0,05$) | Terdapat perbedaan signifikan, SIPD mempercepat pelaporan |
| **Konsistensi RKA–DPA** | 4,21 | 0,003 ($p < 0,05$) | Terdapat perbedaan signifikan, SIPD meningkatkan konsistensi |
| **Akurasi realisasi belanja** | 4,21 | 0,003 ($p < 0,05$) | Terdapat perbedaan signifikan, SIPD meningkatkan akurasi |

Sumber Data : Diolah dari data primer, Juni 2025

### 3. Triangulasi Data Primer dan Sekunder

| Sumber Data | Temuan Utama | Dukungan terhadap Data Sekunder |
|---|---|---|
| **Wawancara** | 87% informan menyatakan SIPD meningkatkan akurasi & kecepatan pelaporan | Konsisten dengan penurunan waktu LRA (-37,8%) |
| **Kuesioner** | Skor rata-rata 4,0–4,4 (baik–sangat baik) | Mendukung peningkatan konsistensi dokumen (+22%) |
| **Observasi** | Input RKA lebih cepat, pelaporan harian lintas OPD | Sesuai dengan metadata SIPD (validasi otomatis, integrasi RPJMD) |
| **Dokumentasi** | Konsistensi dokumen meningkat, laporan lebih cepat, akurasi lebih tinggi | Memperkuat persepsi positif pengguna |

Sumber Data : Diolah dari data primer,  Juni 2025.