



SIPD Effectiveness in Regional Financial Management: DeLone-McLean and SWOT Analysis

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Abstract

Purpose: This study evaluates the effectiveness of the Regional Government Information System (*Sistem Informasi Pemerintahan Daerah/SIPD*) implementation in financial management at the Secretariat of the Regional House of Representatives of Mimika Regency, identifies factors influencing implementation effectiveness, and formulates improvement strategies. The study focuses on the legislative secretariat context characterized by dynamic activities, changing budget demands, and infrastructure limitations in Papua.

Research Methodology: An analytical descriptive approach was applied by integrating the DeLone and McLean Information Systems Success Model with SWOT analysis. Data were collected through questionnaires involving 25 respondents, interviews with key informants, participatory observation, and documentation analysis. IFAS and EFAS matrices were used to determine strategic positioning.

Results: System Quality achieved a low score (2.15) due to server instability and network limitations. Information Quality obtained a high score (3.05) because SIPD's locked-system architecture improves data accuracy and reporting compliance despite operational challenges. Service Quality reached a moderate score (2.50), with limitations in technical support and training. SWOT analysis positioned SIPD implementation in Quadrant IV (Defensive/WT Strategy) with coordinates $X=-0.70$ and $Y=-0.80$, indicating dominant weaknesses and threats.

Conclusions: SIPD improves financial transparency but remains vulnerable to infrastructure and organizational constraints.

Limitations: This study is limited to one legislative secretariat, a cross-sectional design, and a small respondent scope.

Contributions: This study provides an integrated DeLone-McLean and SWOT framework for evaluating SIPD effectiveness and offers evidence-based strategies for strengthening digital governance in infrastructure-constrained regions.

Keywords: *DeLone Model, Digital Governance, E-Government, Effectiveness, McLean Model*

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1. Introduction

Digital transformation in Indonesian regional governments has become a central component of public sector reform, particularly in strengthening transparency, accountability, and efficiency in regional financial management. One of the main instruments supporting this transformation is the Regional

Government Information System (*Sistem Informasi Pemerintahan Daerah/SIPD*), mandated through Ministry of Home Affairs Regulation (*Peraturan Menteri Dalam Negeri/Permendagri*) No. 70 of 2019. SIPD is designed as a centralized cloud-based platform that integrates the entire regional financial management cycle, including budget planning, implementation, monitoring, and accountability reporting, into a unified national database. The implementation of SIPD represents the government's effort to standardize regional financial information management, reduce administrative fragmentation, and improve the quality of public financial governance ([Nasution, & Irawan, 2025](#); [Zosadak, 2025](#); [Novianto, Lamba, & Hutajulu, 2026](#)). This regulatory mandate applies to all regional government institutions, including legislative secretariats, as stipulated in the Regional Regulation of Mimika Regency No. 5/2022, Article 272 Paragraph 4.

However, the centralized architecture of SIPD contains an implicit assumption that all Indonesian regions possess relatively similar levels of digital infrastructure, technological readiness, and organizational capacity. This assumption becomes problematic in geographically challenging regions where telecommunications infrastructure remains uneven and connectivity limitations affect daily administrative operations. In such contexts, mandatory digital systems may generate new vulnerabilities when technological requirements exceed local infrastructure capabilities. Operational disruptions caused by unstable networks, server accessibility problems, and limited technical support can extend beyond minor technical issues and potentially interrupt the entire regional financial administration process ([Fikriyah, Arochman, & Rusli, 2026](#)). This challenge is particularly relevant in Mimika Regency, an area with substantial fiscal capacity driven by PT Freeport Indonesia (PTFI) operations, yet still facing limitations in telecommunications infrastructure and reliable access to centralized government systems.

The effectiveness of digital government systems is not determined solely by technological availability but also by the interaction between system characteristics, organizational conditions, and user capabilities. The DeLone and McLean Information Systems Success Model emphasizes that information system effectiveness is influenced by system quality, information quality, and service quality, which collectively determine the success of information system implementation. In mandatory government systems such as SIPD, high-quality information outputs must be balanced with reliable system performance and adequate institutional support. Without this balance, digitalization initiatives may improve compliance and reporting accuracy while simultaneously creating operational burdens for users ([Saba, DeLone, Ul-Ain, Harfouche, Biot-Paquerot, & Mallek, 2025](#); [Sianturi, & Marlissa, 2026](#)).

The institutional context of this study, namely the Secretariat of the Regional Legislative Council (*Dewan Perwakilan Rakyat Kabupaten/DPRK*) of Mimika Regency, introduces a unique analytical dimension that has received limited attention in previous SIPD studies. Existing SIPD research has predominantly focused on executive government institutions such as *Badan Pengelolaan Keuangan dan Aset Daerah* (BPKAD), *Badan Perencanaan Pembangunan Daerah* (Bappeda), and other administrative agencies with relatively linear and predictable workflows. In contrast, the DPRK Secretariat operates within a dynamic legislative environment characterized by plenary sessions, budget deliberations, working visits, and parliamentary recess activities (*reses*), which create fluctuating and time-sensitive financial management demands. This difference generates a potential mismatch between SIPD standardized and sequential procedural architecture and the DPRK Secretariat adaptive operational requirements.

Furthermore, previous studies have rarely integrated information system effectiveness evaluation with strategic environmental analysis to formulate contextual improvement strategies. Evaluating SIPD solely from technical performance indicators may not adequately capture the internal organizational weaknesses and external threats affecting implementation sustainability. Therefore, combining the DeLone and McLean model with Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis provides a more comprehensive approach by assessing system performance while simultaneously identifying strategic factors that influence successful implementation in specific regional contexts ([Hilal, Hilal, & Hilal, 2022](#); [Candelario, Candelario, & Villanueva, 2024](#)).

Based on these considerations, this study addresses three research questions regarding the effectiveness of SIPD implementation in financial management at the Mimika DPRK Secretariat based on system quality, information quality, and service quality dimensions, the internal and external factors influencing SIPD implementation effectiveness, and the contextual improvement strategies that can be formulated through SIPD effectiveness evaluation and SWOT analysis. By addressing these questions, this study contributes empirical evidence regarding digital government implementation challenges in peripheral regions of Indonesia and provides strategic recommendations for improving sustainable public sector digital transformation..

2. Literature Review and Hypothesis/es Development

2.1 Public Sector Effectiveness

[Alili and Abdelkader \(2025\)](#) defined effectiveness as an organization's ability to realize predetermined goals through optimal resource utilization. [Azizah and Nurfauziah \(2026\)](#) operationalizes effectiveness in the public sector as the ratio of output achieved to output targeted, where effectiveness is confirmed when targets are met or exceeded. In public sector information systems, effectiveness is evaluated based on both the quality of outputs and the contribution to decision-making quality and operational efficiency ([DeLone, & McLean, 2003](#); [Bartolacci, & Soverchia, 2025](#)). For SIPD, effectiveness means not merely compliance with system usage requirements but also the degree to which the system genuinely supports financial management performance under the organization's specific operational conditions.

In the context of digital transformation in government institutions, effectiveness also depends on the compatibility between technological systems and organizational environments. A system may achieve its intended objectives at the technical level but fail to deliver optimal outcomes when infrastructure limitations, user capabilities, and organizational workflows are not adequately aligned. Therefore, evaluating the effectiveness of government information systems requires an integrated perspective that considers technological performance, information reliability, user support mechanisms, and the institutional conditions in which the system operates. This perspective is particularly relevant for SIPD implementation, as the system is applied uniformly across regions with diverse infrastructure capacities and administrative characteristics. Consequently, SIPD effectiveness should be assessed not only through regulatory compliance but also through its practical contribution to improving regional financial management processes, accountability, and organizational performance.

2.2 DeLone and McLean Information Systems Success Model (2003)

The updated IS Success Model of [DeLone and McLean \(2003\)](#) identifies six success dimensions: system quality, information quality, service quality, system use, user satisfaction, and net benefits. This study focuses on three deterministic input dimensions system quality, information quality, and service quality which directly influence the effectiveness perception of mandatory systems ([Bartolacci & Soverchia, 2025](#)). System Quality encompasses reliability, usability, flexibility, and response time; technically sound systems reduce operational errors and improve work efficiency. Information Quality encompasses the accuracy, relevance, timeliness, and completeness of system outputs ([Abd, Nor, Jusoh, Rahman, & Ali, 2024](#)). Service Quality, derived from the SERVQUAL framework developed by [Parasuraman, Zeithaml, and Berry \(1988\)](#), encompasses the responsiveness and reliability of technical support, both of which are critical for end users who rely on help desk services for timely problem resolution ([DeLone & McLean, 2003](#)).

2.3 Regional Financial Management and SIPD Policy Framework

Regional financial management in Indonesia is guided by the principles of Value for Money, encompassing economy, efficiency, and effectiveness, as well as transparency and public accountability. The policy framework for the SIPD is grounded in Presidential Regulation No. 95/2018 on the Electronic-Based Government System, Presidential Regulation No. 39/2019 on One

Data Indonesia, Minister of Home Affairs Regulation No. 70/2019 concerning the SIPD framework, and Minister of Home Affairs Regulation No. 77/2020 concerning technical guidelines for regional financial management. SIPD employs a multi-level, sequential workflow in which data are entered by operators, verified by the Head of Subdivision (*Kepala Subbagian/Kasubag*) or Head of Division (*Kepala Bagian/Kabag*), authorized by the Secretary of the Regional Legislative Council (*Sekretaris Dewan Perwakilan Rakyat/Sekwan*) or Budget User (*Pengguna Anggaran/PA*), and subsequently validated by the BPKAD for treasury processing. This sequential structure creates interdependence among administrative levels, meaning that disruptions at one stage can propagate to subsequent processes. In Mimika, bottlenecks at the operator level, particularly those caused by server instability, can therefore cascade into delays in the issuance of Payment Order Documents (*Surat Perintah Pencairan Dana/SP2D*) by BPKAD, ultimately disrupting the timely financing of legislative activities.

2.4 SWOT Analysis and Strategic Positioning

SWOT analysis identifies internal factors (strengths and weaknesses under organizational control) and external factors (opportunities and threats beyond organizational control) that affect performance. The Internal Strategic Factors Analysis Summary (IFAS) and External Strategic Factors Analysis Summary (EFAS) matrices quantify each factor through weight-rating scoring. The accumulated IFAS and EFAS scores generate coordinates (X , Y) that are plotted on a Cartesian diagram. Quadrant I represents an Aggressive strategy (Strengths–Opportunities/SO), Quadrant II represents a Diversification strategy (Strengths–Threats/ST), Quadrant III represents a Turnaround strategy (Weaknesses–Opportunities/WO), and Quadrant IV represents a Defensive strategy (Weaknesses–Threats/WT). Placement in Quadrant IV indicates that internal weaknesses and external threats simultaneously dominate, requiring a strategic focus on risk mitigation and operational survival ([David, 2011](#)).

2.5 Prior Research and Research Gaps

Previous research on the SIPD has predominantly examined executive and administrative organizational contexts. [Tumija and Erlambang \(2023\)](#) investigated budget planning coordination in Ogan Komering Ulu, while [\(Setiawan & Anisykurlillah, 2024\)](#) examined user adaptation efficiency within the East Java Secretariat. [Wijayanti, Masnun, and Wijaya \(2025\)](#) focused on technical and human resource constraints at the BPKAD, [\(Rahmat & Mar, 2020\)](#) examined user acceptance using the Technology Acceptance Model (TAM), [Angelina, Hermawan, and Suroso \(2019\)](#) investigated user satisfaction based on the DeLone and McLean Information Systems Success Model, and [Mali, Sanjaya, and Rahayu \(2026\)](#) examined broader barriers to digital transformation.

Three systematic gaps can be identified in this literature. First, there is a locus bias toward relatively linear executive organizations, with limited attention to the more dynamic and functionally flexible context of legislative secretariats. Second, there is a methodological gap, as evaluations of system quality have generally been conducted separately from the development of strategic management recommendations. Third, contextual research remains limited on the integration of centralized information system evaluation with severe telecommunications infrastructure constraints in eastern Indonesia. This study addresses these three gaps through an integrated DeLone and McLean model and SWOT analysis applied to the secretariat of the DPRK, thereby linking information system performance assessment with context-specific strategic recommendations.

3. Research Methodology

3.1 Research Design and Location

An analytical descriptive research design was employed, integrating two complementary analytical approaches, the [DeLone and McLean \(2003\)](#) Information Systems Success Model for diagnostic evaluation and SWOT analysis using IFAS and EFAS matrices for strategic formulation. The research was conducted at the secretariat DPRK of Mimika Regency, Central Papua Province, from March to May 2026. The institution was selected purposively because of its unique hybrid financial management characteristics simultaneously performing routine administrative functions while responding to the unpredictable rhythms of legislative political activity and because of Mimika's documented telecommunications infrastructure constraints.

3.2 Population and Sample

The study population comprised all 25 officials and apparatuses directly interacting with SIPD for financial management at the Mimika DPRK Secretariat. Given the small, specialized population, purposive sampling combined with a total census was applied, and all 25 persons constituted the sample. The inclusion criteria required direct involvement in SIPD-mediated financial processes, such as technical data entry, managerial verification/authorization, or end-user consumption of SIPD outputs. Respondents were distributed across four organizational levels. The policy level was represented by the Sekwan ($n=1$, 4%). The managerial level comprised Kabag or Kasubag ($n=12$, 48%). The operational level comprised SIPD operators and finance staff ($n=9$, 36%). The end-user level comprised Budget Committee (*Badan Anggaran/Banggar*) council members ($n=3$, 12%).

3.3 Data Collection

Data triangulation was applied using four methods. Hybrid 1–4 scale questionnaires (eliminating central-value bias) collected ratings and weighting scores for DeLone-McLean dimensions and SWOT factors. In-depth interviews with key informants (Sekwan and Banggar members) provided qualitative evidence of strategic priorities, infrastructure challenges, and system experience. Participatory observation documented real-time data input processes, loading times, server error events and bottleneck patterns during operational office hours. The documentation study collected *Laporan Realisasi Anggaran* (LRA) data, Permendagri No. 70/2019 documents, and internal Standard Operating Procedure (SOP) records.

3.4 Analytical Methods

Three analytical stages were employed to address the three research questions. First, effectiveness was evaluated by averaging questionnaire scores on a four-point scale for each DeLone and McLean dimension. The interval class was calculated using the formula $(4-1)/3=1.00$. The resulting interpretation criteria were 1.00–1.99 for low or ineffective performance, 2.00–2.99 for moderate or sufficient performance, and 3.00–4.00 for high or effective performance. Supplementary financial analysis was conducted using the effectiveness ratio, calculated as budget realization divided by budget target multiplied by 100%, and the efficiency ratio, calculated as expenditure realization divided by expenditure budget multiplied by 100%, with interpretations based on Kepmendagri No. 690.900-327/1996. Second, SWOT factor analysis was conducted using IFAS and EFAS matrices through weight and rating calculations to generate coordinate scores. Third, strategic formulation was based on SWOT quadrant coordinates, with X calculated as $S-W$ and Y calculated as $O-T$, to determine the appropriate strategic position [David \(2011\)](#).

4. Results and Discussions

4.1 Respondent Profile

Table 1. Respondent Distribution by Role Level (N = 25)

Level	Respondent Group	N	%	SIPD Role
Policy	<i>Sekretaris Dewan</i> (Sekwan)	1	4%	Budget Authorizer (PA)
Managerial	Kabag & Kasubag <i>Keuangan</i>	12	48%	Verifier/Validator
Operational	SIPD Operators / Finance Staff	9	36%	Data Entry
End-User	Banggar Members (DPRK)	3	12%	Output Consumer
TOTAL	—	25	100%	—

Based on Table 1, the respondent distribution represents a comprehensive representation of SIPD users and stakeholders involved in financial management at the Mimika DPRK Secretariat. The largest proportion of respondents comes from the managerial level, consisting of Kabag and Kasubag *Keuangan* (12 respondents; 48%), who are primarily responsible for verification and validation processes. The operational level includes SIPD operators and finance staff (9 respondents; 36%) who directly perform data entry activities, while the end-user group consists of Banggar members (3 respondents; 12%) as users of SIPD-generated outputs. The policy level is represented by the Sekretaris Dewan (1 respondent; 4%) as the budget authorization authority. This distribution ensures that the evaluation captures perspectives from strategic decision-makers, system operators, managerial users, and information consumers, providing a comprehensive assessment of SIPD implementation effectiveness within the institutional context.

4.2 DeLone-McLean Effectiveness Evaluation

Table 2. DeLone and McLean IS Success Model

Dimension	Indicator	Score	Category	Interpretation
System Quality	Server stability and network connection	2.12	Low	Network infrastructure deficit
	Application response time (loading)	2.16	Low	High latency from central server
	User interface ease of use	2.16	Low	Usability constrained by connectivity
	System quality dimension average	2.15	Low	
Information Quality	Accuracy of disbursement and reporting figures	3.16	High	Locked-system enforces precision
	Transparency and SAP compliance	3.00	High	Standardized national format
	Timeliness of LRA presentation	3.00	High	Delayed by server latency bottleneck
	Information quality dimension average	3.05	High	
Service Quality	Helpdesk responsiveness (problem resolution)	2.48	Moderate	Reactive, not proactive support
	SOP/operational manual availability	2.48	Moderate	Generic national SOP with no local version
	Technical training (<i>Bimbingan Teknis/Bimtek</i>) effectiveness	2.52	Moderate	Insufficient for system update frequency
	Service quality dimension average	2.50	Moderate	

Scale: 1.00–1.99 = Low/Ineffective; 2.00–2.99 = Moderate; 3.00–4.00 = High/Effective.

Based on Table 2, the evaluation of SIPD implementation using the DeLone and McLean Information Systems Success Model reveals an asymmetric effectiveness pattern across the three assessed dimensions. System Quality obtained the lowest performance score of 2.15, categorized as low, indicating that technical reliability remains the primary challenge due to server instability, network limitations, and slow application response times. In contrast, Information Quality achieved the highest score of 3.05, categorized as high, demonstrating that SIPD standardized and locked-system architecture effectively improves reporting accuracy, transparency, and compliance despite operational constraints. Meanwhile, Service Quality obtained a moderate score of 2.50, reflecting that technical support, operational guidelines, and training programs are available but remain insufficient to fully support user needs. Overall, the results indicate that SIPD provides strong benefits in improving financial information quality, but its effectiveness is constrained by infrastructure limitations and service support gaps ([Hersadjati, Zakiah, & Benius, 2025](#)).

4.2.1 System Quality (Score: 2.15 — Low)

System Quality was the weakest dimension, with all three indicators falling below 2.20. The mean score of 2.15 confirms that the SIPD's technical performance at the Mimika DPRK Secretariat is suboptimal, primarily driven by server instability (2.12) and high loading times (2.16). As [DeLone and McLean \(2003\)](#) specify, system quality depends on reliability, usability, and response time, all three of which are compromised by Mimika's internet infrastructure constraints. The cloud-based architecture of the SIPD requires stable, high-bandwidth connectivity, which Mimika's terrestrial network cannot consistently provide. During peak legislative activity periods, such as budget deliberation sessions and end-of-month reporting deadlines, server latency causes timeout errors during data input, forcing operators to restart transactions, extend working hours, and create administrative backlogs. Observational evidence directly confirms this theoretical prediction: inadequate system quality generates operational bottlenecks that degrade organizational efficiency.

4.2.2 Information Quality (Score: 3.05 — High): The Paradox Finding

Information Quality achieved the highest dimension score (3.05), placing it in the 'High/Effective' category. This finding reveals the study's central analytical paradox by raising the question of how a system with low quality can produce high information quality. The answer lies in SIPD's architectural design of the SIPD as a locked system a centralized validation mechanism that enforces data precision at the input stage through automated error detection. The system refuses to process inputs with nomenclature errors, decimal inconsistencies, or documentation gaps, redirecting erroneous entries back to the operators for correction before progression through the verification chain. This design effectively compels operators to produce accurate, transparent, and *Standar Akuntansi Pemerintahan* (SAP) compliant financial reports, regardless of the system's performance quality. As a Banggar member confirmed, 'The system makes it easy to independently verify reports and travel history. We can immediately identify incomplete reports.'

However, this high information quality is achieved at a significant operational cost. The trade-off between accuracy and timeliness is directly documented. The timeliness score of 3.00, which is the lowest among the three information quality indicators, reflects how server latency disrupts the immediate presentation of LRA data that SIPD is designed to provide. This paradox has important policy implications. High information quality in the Mimika context does not necessarily indicate system success in the traditional DeLone and McLean sense. Rather, it may reflect the system's rigid design operating at the expense of organizational efficiency. The locked-system architecture that produces accurate outputs simultaneously creates an excessive operator burden in infrastructure-constrained environments.

4.2.3 Service Quality (Score: 2.50 — Moderate)

Service Quality's moderate score (2.50) indicates that technical support for SIPD users exists but has not yet fully accommodated operational field needs. The lowest-scoring indicators, help desk responsiveness (2.48) and SOP availability (2.48), reveal a reactive support model where problems must first occur before assistance is sought, rather than a proactive capability-building approach that anticipates operational challenges. Bimtek effectiveness (2.52) is marginally higher but remains inadequate given SIPD's frequent feature updates. System modifications introduced without adequate socialization create knowledge gaps that disrupt established workflows. The SERVQUAL criterion ([Parasuraman et al., 1988](#)) that service quality requires responsiveness and reliability is only partially met. The support system exists structurally but lacks the operational agility required by a legislative secretariat with urgent financial administration needs ([Mutiarin, Yusuf, Lega, & Habibullah, 2024](#)).

4.3 SWOT Analysis: IFAS and EFAS Matrices

Table 3. Internal Strategic Factors in the IFAS Matrix

Code	Internal Strategic Factor	Weight	Rating	Score	Basis
S	STRENGTHS				
S1	Sekwan and managerial leadership commitment	0.15	3	0.45	Interview evidence
S2	Budget availability for office support facilities	0.10	2	0.20	LRA documentation
S3	Real-time integrated LRA accuracy	0.10	3	0.30	IQ score = 3.05 (High)
S4	Discipline and integrity of financial management staff	0.10	2	0.20	Questionnaire/interview
S5	Audit trail availability for financial monitoring	0.05	2	0.10	System observation
Total Strength Score (S)		0.50		1.25	
W	WEAKNESSES				
W1	9 SIPD operators disproportionate to workload of 35 council members	0.15	4	0.60	SQ score = 2.15 (Low)
W2	Low IT literacy among some apparatus	0.10	4	0.40	Questionnaire/interview
W3	Frequent end-of-month bottleneck	0.15	4	0.60	Participatory observation
W4	Complete operational dependency on manual operator input	0.05	4	0.20	System workflow analysis
W5	No comprehensive local technical SOP	0.05	3	0.15	ServQ score = 2.50 (Mod.)
Total Weakness Score (W)		0.50		1.95	
TOTAL IFAS SCORE (S + W)		1.00		3.20	$X = S - W = -0.70$

Based on Table 3, the IFAS matrix identifies the internal strategic position of SIPD implementation at the Mimika DPRK Secretariat by comparing organizational strengths and weaknesses. The analysis shows that the total strength score reaches 1.25, while the weakness score is higher at 1.95, resulting in a negative internal coordinate value of $X = -0.70$. The strongest internal factors include leadership commitment from the Sekwan and managerial level (score=0.45), as well as the accuracy of integrated real-time financial reporting (score=0.30), indicating institutional support and improved financial information quality as important advantages ([Landu, Mota, Moreira, & Bandeira, 2025](#)). However, the dominant weaknesses are related to operational capacity, particularly the imbalance between SIPD operators and workload demands (score=0.60) and frequent end-of-month operational bottlenecks (score=0.60). These findings indicate that although the organization possesses supportive leadership and reliable financial reporting mechanisms, internal capacity limitations remain the main constraints affecting SIPD effectiveness ([Naida & Sartika, 2025](#)).

Table 4. External Strategic Factors in the EFAS Matrix

Code	External Strategic Factor	Weight	Rating	Score	Basis
O	OPPORTUNITIES				
O1	Binding Regulatory Mandate under Permendagri No. 70/2019	0.15	3	0.45	Policy document
O2	Bureaucratic transformation toward paperless governance	0.10	2	0.20	SPBE policy context
O3	Enhanced public accountability for BPK audit purposes	0.10	3	0.30	LRA/BPK documentation
O4	National Smart City and digitalization support programs	0.10	1	0.10	National policy context
O5	Long-term efficiency gains after adaptation period	0.05	2	0.10	Comparative literature
Total Opportunity Score (O)		0.50		1.15	
T	THREATS				
T1	Mimika geographic conditions and internet blank-spot risk	0.15	4	0.60	Observation/SQ score
T2	Unscheduled central server maintenance without notification	0.15	4	0.60	Operator interviews
T3	Rigid application modules incompatible with council work fluctuations	0.10	4	0.40	Legislative context analysis
T4	Cybersecurity threats (national-level server failure events)	0.05	3	0.15	IT security literature
T5	Political pressure from council members when disbursements are delayed by system failures	0.05	4	0.20	Interview evidence
Total Threat Score (T)		0.50		1.95	
TOTAL EFAS SCORE (O + T)		1.00		3.10	$Y = O - T = -0.80$

Based on Table 4, the EFAS matrix illustrates the external strategic conditions affecting SIPD implementation at the Mimika DPRK Secretariat. The analysis shows that the total opportunity score is 1.15, while the threat score reaches 1.95, resulting in a negative external coordinate value of $Y = -0.80$. The strongest external opportunities are the mandatory regulatory framework through Permendagri No. 70/2019 (score=0.45) and enhanced public accountability requirements for financial reporting (score=0.30), indicating that policy support and governance demand provide a favorable environment for SIPD implementation. However, these opportunities are outweighed by significant external threats, particularly geographic conditions and internet blank-spot risks (score=0.60) and unscheduled central server maintenance without prior notification (score=0.60). In addition, rigid SIPD application modules that are less compatible with fluctuating legislative activities represent another major external challenge (score=0.40). These findings indicate that although SIPD benefits from strong regulatory support and digital governance initiatives, external infrastructure limitations and centralized system dependencies remain dominant factors constraining implementation effectiveness (Sudirman, Saidin, Maswa, & Susilawaty, 2025).

4.4 SWOT Quadrant Positioning: Quadrant IV (Defensive/WT)

Table 5. SWOT Coordinate Calculation and Strategic Positioning

Axis	Calculation	Coordinate	Implication
X-Axis (Internal)	Strengths (1.25) – Weaknesses (1.95)	$X = -0.70$	Internal Capacity Deficit with Dominant Weaknesses
Y-Axis (External)	Opportunities (1.15) – Threats (1.95)	$Y = -0.80$	External Threat Dominance with Insufficient Opportunities
Quadrant Position	Coordinates $(-0.70; -0.80)$	QUADRANT IV	Defensive WT Strategy with a Focus on Risk Mitigation

Strategy interpretation according to (David, 2011): Quadrant IV = simultaneous internal weakness and external threat dominance, requiring survival/damage-control focus.

Based on Table 5, the external strategic analysis indicates that SIPD implementation faces dominant external threats, resulting in a negative external coordinate value ($Y=-0.80$). The threat dominance is primarily driven by T1 (Mimika geographic conditions and internet blank-spot risk) and T2 (unscheduled central server maintenance without notification), each receiving the highest threat score of 0.60. These factors represent structural challenges beyond the direct control of the organization and significantly affect SIPD operational continuity (Jiang & Hang, 2026). Although the regulatory mandate through Permendagri No. 70/2019 represents the strongest external opportunity (O1:0.45), this advantage remains insufficient to overcome infrastructure limitations and centralized system dependency. Combined with the internal weakness position identified in the IFAS analysis ($X=-0.70$), these external conditions place SIPD implementation in Quadrant IV (Defensive/WT Strategy). The position reflects the need for risk mitigation strategies rather than system expansion, particularly through strengthening network resilience, improving organizational capacity, and developing adaptive policies for infrastructure-constrained regions (Li, Xia, Wang, & Huang, 2026). As the Sekwan confirmed, when the primary network in Timika failed in 2025, alternative connectivity solutions such as satellite internet could have prevented complete operational disruption.

4.5 Strategic Recommendations: Defensive/WT Implementation

4.5.1 Network Infrastructure Resilience (Threat Mitigation)

Quadrant IV positioning requires immediate investment in local network resilience as a non-negotiable survival mechanism. The Secretariat must prioritize budget allocation for an independent satellite-based backup Internet infrastructure (Very Small Aperture Terminal/VSAT or Starlink Enterprise), specifically designed to maintain SIPD connectivity during primary terrestrial network outages. This strategy directly addresses T1 and T2, both deterministic external threats that the organization cannot control but can defend against. The cost-benefit calculation is straightforward: unscheduled legislative activity disruptions carry political costs (T5) that vastly exceed the satellite subscription costs. This constitutes the most urgent single investment the Secretariat can make to prevent bureaucratic vulnerability from SIPD dependency.

4.5.2 HR Load Engineering (Weakness Mitigation)

The operator workload ratio imbalance (W1) requires HR engineering rather than merely numerical expansion. Tactical measures include appointing a dedicated IT Support specialist to handle local network troubleshooting, allowing SIPD operators to focus exclusively on financial data accuracy rather than managing connectivity problems. Additionally, implementing shift scheduling during high-traffic reporting periods, such as the end of the month, end of the quarter, and periods preceding plenary sessions, is essential to prevent burnout-induced errors. Furthermore, developing a local contextual SOP (W5) that provides Mimika-specific operational protocols for system disruptions, network outages, and pending data entry procedures during server downtime would ensure consistent operations regardless of individual operator experience levels.

4.5.3 Asymmetric Digital Policy Advocacy (Regulatory Mitigation)

The one-size-fits-all national digitalization policy embedded in Permendagri No. 70/2019 has demonstrated geographic incompatibility with regions facing severe infrastructure constraints. The Mimika DPRK Secretariat should pursue regulatory advocacy with the Ministry of Home Affairs to promote an Asymmetric Digital Policy by proposing legal dispensation for extended reporting deadlines for institutions in 3T regions (*Terdepan, Terluar, and Tertinggal*) during documented network outages. Furthermore, developing regional server architecture, such as server mirrors or regional data centers in eastern Indonesia, could reduce data latency between Jakarta and Papua. Greater flexibility in SIPD modules is also necessary to accommodate the non-linear activity patterns of legislative secretariats, including committee meetings, working visits, and *reses*, without requiring sequential system authorization workflows that may create cascading delays.

4.6 Synthesis: The Policy Paradox of Centralized E-Government

The synthesis of quantitative and qualitative findings in this study documents that SIPD implementation in a peripheral legislative institution operates within a policy paradox. On one dimension, the system architecturally succeeds in eliminating financial reporting manipulation opportunities and delivering transparent accountability instruments, as evidenced by Information Quality achieving the High category (3.05) despite organizational constraints. On the other hand, a centralized database architecture unaccompanied by equivalent telecommunications infrastructure provision has generated a new form of bureaucratic vulnerability: complete operational dependency on connectivity whose reliability falls below minimum functional thresholds.

This finding corrects the conventional assumption in the [DeLone and McLean \(2003\)](#) model that technology quality does not operate in a vacuum; it is fundamentally determined by the geographic ecology of its users. Systems designed for the infrastructure conditions of Jakarta's government centers carry embedded assumptions about connectivity reliability that do not hold in Papua's mountainous and coastal terrain. The high Information Quality score counterintuitively achieved despite Low System Quality reveals that SIPD's locked-system design can enforce accuracy as a constraint, even when technical performance is poor. However, it simultaneously reveals that the cost of this accuracy is displaced entirely onto human operators, whose extended working hours, stress-induced errors, and institutional knowledge dependency become the invisible subsidy for the system's reported effectiveness ([Mohsin, 2026](#); [Krisna, & Pinaraswati, 2026](#)).

5. Conclusions

This study evaluated SIPD effectiveness in financial management at the Mimika DPRK Secretariat using the DeLone and McLean IS Success Model and SWOT analysis. Four main conclusions were drawn. First, SIPD effectiveness is asymmetric and sub-optimal. System Quality was low (2.15) due to server instability and slow response, while Information Quality was high (3.05), reflecting the locked-system architecture that ensures data accuracy at the expense of timeliness and operator effort. Service Quality was moderate (2.50), with helpdesk responsiveness and Bimtek frequency identified as key weaknesses. Second, internal weaknesses were dominated by operator workload imbalance, while external threats were dominated by internet connectivity limitations and unscheduled central server maintenance. Third, IFAS-EFAS analysis positioned SIPD implementation in Quadrant IV (Defensive/WT), indicating the need for risk mitigation and operational resilience through network infrastructure strengthening, HR workload management, and asymmetric digital policy advocacy. Fourth, the findings demonstrate that centralized e-government systems can create infrastructure-related vulnerabilities in peripheral regions. In Mimika, SIPD effectiveness remains heavily dependent on operator effort rather than system reliability, highlighting the need for systemic policy intervention.

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Author Contributions

GYP conceptualized the study, developed the methodology, collected the data, conducted the formal analysis and investigation, and wrote the original draft. TPU conceptualized the study, developed the methodology, supervised the research, validated the findings, and reviewed and edited the manuscript. ERM conducted the formal analysis, interpreted the findings, validated the results, supervised the research, and reviewed and edited the manuscript. All authors contributed to the interpretation of the results, reviewed the final manuscript, and approved the version submitted for publication.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this article. The authors confirm that the research was conducted independently and that no financial, personal, or institutional relationships influenced the research design, data collection, analysis, interpretation of results, or manuscript preparation.

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