



## ARTICLE

# Optimizing Regional Financial Information Systems in Indonesia

## A CIPP Evaluation Approach to Institutional Capacity Asymmetry

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**Abstract:** Regional financial management demands transparency and integration through the Regional Government Information System (SIPD). Despite national mandates, provincial execution indicates asymmetric disparities. The research question asks how institutional capacity disparities and infrastructure asymmetry hinder SIPD optimization. This study aims to evaluate the dynamics of regional financial execution and administration via SIPD and identify root structural constraints. Using a descriptive qualitative method based on the CIPP (Context, Input, Process, Product) model, data from West Java, Banten, and Jambi were collected via interviews, observations, and document reviews, then analyzed using an interactive data analysis technique. The novelty lies in the holistic, multi-tier comparison of institutional capacity asymmetry at the provincial level. Findings and discussions indicate suboptimal aggregate implementation. Contextually, policies align with single-data urgency. Input evaluations reveal deficits in digital infrastructure and human resource literacy. Operational processes are disrupted by API synchronization failures and shadow manual bookkeeping practices. Product evaluations show benefit disparities; West Java achieved absolute efficiency, while Banten and Jambi experienced disbursement stagnation. In conclusion, capacity inequalities hinder SIPD effectiveness. It is recommended that the central government shift from reactive technical updates to Business Process Reengineering (BPR) standardization and sustainable capacity building to realize resilient digital financial governance.

**Keywords:** CIPP Evaluation; Financial Administration; Local Government; Public Accountability; Regional Finance; Regional Government Information System (SIPD).

## 1. Introduction

Since the onset of the era of bureaucratic reform and fiscal decentralization in Indonesia, local governments have been granted extensive autonomy to independently regulate, manage, and allocate their financial resources to fulfill the governmental responsibilities within their jurisdiction. At its core, this fiscal decentralization aims to bring public services closer to the community, enhance the efficiency of resource allocation, and internalize the costs and benefits of local development policies, thereby enabling local governments to operate more responsively to the evolving needs of their citizens (Marit et al., 2021). However, this massive and decentralized delegation of authority brings a complex range of challenges, particularly in ensuring that the management of public funds in hundreds of autonomous regions remains aligned with the principles of good governance (good corporate governance and good public governance), which are based on the pillars of transparency, accountability, efficiency, and effectiveness (Dona & Lestari, 2020; Halim, 2019).

Globally, digital financial management tools such as SIPD—known internationally as Integrated Financial Management Information Systems (IFMIS)—have become a cornerstone for developing countries in reducing inefficiencies and strengthening public sector accountability (Ahmad & Furqan, 2025; Aryani, 2023). However, cross-country empirical studies demonstrate that these digitalization projects are often hindered by bureaucratic resistance, weak institutional capacity, and gaps in information technology infrastructure (Pasape & Godson, 2022).

To address the challenges of oversight and harmonization of financial data on a national scale, the central government continues to strive for reform, both in terms of regulation and the adoption of information technology, culminating in the issuance of Government Regulation No. 12 of 2019 on Regional Financial Management, as well as its technical implementing regulation, namely Minister of Home Affairs Regulation (Permendagri) No. 70 of 2019 on the Regional Government Information System (SIPD) (Hasanah et al., 2025).

The Local Government Information System (SIPD) was initiated not merely as a record-keeping application, but as a strategic instrument—a game-changer—that fundamentally transforms the business processes of local financial management from a previously fragmented ecosystem into a centralized, nationally integrated digital infrastructure (Nasution & Nurwani, 2021; Septiani & Isnawaty, 2024; Setiawan & Anisykurlillah, 2024). Prior to the era of full SIPD implementation, local governments had the discretion to use various system architectures. Heterogeneous software—such as the Regional Management Information System (SIMDA) developed by BPKP, or the independent financial management applications built by individual local governments—which ultimately leads to the phenomenon of “information silos” (information silos) (Halim, 2019; Meynaldi & Rosalina, 2023). This fragmentation of applications hinders efforts toward rapid, accurate, and standardized fiscal consolidation, creates information asymmetry between the central and local governments, and makes it difficult for the Ministry of Home Affairs and the Ministry of Finance to conduct real-time budget tracking (Meynaldi & Rosalina, 2023; Septiani & Isnawaty, 2024). Through the SIPD architecture, all crucial stages in the public financial management cycle—from the Regional Government Work Plan (RKPD), General Budget Policy and Priority Interim Budget Ceiling (KUA-PPAS), the formulation of the Regional Revenue and Expenditure Budget (APBD), implementation, administration, to the accounting and accountability reporting stages—are integrated into a single database (single source

of truth) hosted on the central government's server (Hasanah et al., 2025; Septiani & Isnawaty, 2024). The hope is that this cloud-based automation system will not only digitize administrative documents but also serve as a preventive internal control mechanism capable of issuing early fiscal warnings, strictly enforcing budget ceilings, and significantly minimize discretion that could lead to inefficiencies, budget leaks, or misallocation of public funds (Dona & Lestari, 2020; Septiani & Isnawaty, 2024).

Although the blueprint and policy architecture of the SIPD promises a radical transformation of the bureaucracy, empirical evidence shows that the transition from legacy systems to the SIPD ecosystem is by no means free of structural or cultural friction. A state-of-the-art literature review of the global and national landscape confirms that digital transformation in government financial reporting cannot be viewed merely as a disruption caused by technology implementation, but rather as a transformation that is highly dependent on institutional readiness and the adaptive capacity of human resources (Maria & Halim, 2026; Salomo & Rahmayanti, 2023). Research conducted by Badewin et al., (2025) found that e-government platforms have significant potential to enhance transparency and the timeliness of reporting; however, disparities in the technical capacity of technocrats and leadership commitment across regions consistently trigger sharp inconsistencies in their implementation. More specifically, research by Gracya and Purwanti (2026) on the SIPD at the district level revealed that although the system framework has been implemented, optimal operational performance has not been achieved due to fragile internet connectivity, limited technical literacy among officials, and high latency in application programming interface (API) synchronization. From these various literature reviews, a very consistent research gap emerges: the majority of previous studies tend to focus their observational lens on the technical challenges of system adoption at the district/city government level in isolation or highlight effectiveness only in macro-planning and initial budgeting (Aryani, 2023; Nisa & Tamrin, 2025). There are very few, if any, comprehensive scientific studies that analyze the operational effectiveness of the system during its most crucial, labor-intensive phase—one with zero error tolerance—namely the “Implementation and Administration” module—particularly within large-scale entities at the provincial government level.

Addressing this research gap, the scientific novelty statement of this study lies in the application of a multi-tier comparative evaluation approach using the CIPP (Context, Input, Process, Product) analytical framework in a holistic manner to evaluate the operational effectiveness of financial governance within the SIPD Implementation and Administration module. This approach specifically dissects the phenomenon of institutional capacity asymmetry by categorizing three clusters of provinces (representing high, moderate, and low performance), while summarizing and directly juxtaposing the empirical perspectives of local implementers with the justifications of regulatory authorities at the central level (Ministry of Home Affairs).

Based on the theoretical background and rationale outlined above, the main research problem in this study is how disparities in institutional capacity and asymmetries in supporting infrastructure across provinces hinder the smooth optimization of local government financial management through the SIPD system, ultimately triggering administrative pathologies such as delays in fund disbursement and the emergence of shadow accounting practices. Therefore, this study aims to comprehensively evaluate the dynamics of regional financial management and administration through the application of the SIPD at the provincial level in Indonesia, in order to identify the root causes of structural constraints in the field, as

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well as to formulate recommendations for adaptive policy mitigation strategies to achieve truly transparent and accountable financial governance.

## 2. Methods

This study was designed using a descriptive qualitative approach rooted in the constructivist paradigm (Creswell & Creswell, 2018; Mulyana, 2006; Nurdin & Hartati, 2019). This approach is integrated with the operational analytical framework of the CIPP Evaluation Model (Context, Input, Process, Product) conceptualized by Stufflebeam. The relevance of using the CIPP model is supported by various recent international literature that demonstrates its reliability in holistically evaluating the effectiveness of digital transformation and e-government policies in the public sector. This is because the CIPP model does not merely focus on the final reporting outcomes (product) but systematically examines the policy's rational foundation (context), infrastructure readiness and human resource capabilities (input), as well as operational technical barriers in the field (process) (Pakpahan, 2024; Stuufflebeam & Zhang, 2017). Operationally, this evaluation will diagnose the level of compliance of disbursement document management procedures with the standard benchmarks mandated by regulations (Gracya & Purwanti, 2026; Hasanah et al., 2025; Triwahyuni & Fatmawati, 2024).

The selection of the research setting and informants was carried out using multistage purposive sampling, a method widely recognized for its validity in public administration research for mapping phenomena of cross-jurisdictional policy asymmetry and multilevel governance (Nisa & Tamrin, 2025). The primary research site at the policy formulation level is the Directorate General of Regional Financial Development, Ministry of Home Affairs, as the epicenter of financial governance oversight. In the context of empirical data variance, three provinces were selected to represent diametrically opposed clusters of SIPD implementation maturity based on the Ministry of Home Affairs' internal evaluation scores: West Java Province (high performance benchmark, score 94.6), Banten Province (moderate performance, score 82.43), and Jambi Province (critically low performance, score 41.1) (Ministry of Home Affairs, 2024). This stratification was intentionally designed so that the findings are not biased toward developed regions alone but can reveal the root causes of disparities in technology adoption.

The primary data collection phase was conducted using in-depth semi-structured interviews and moderate participatory observation focused on the daily interactions of civil servants with the SIPD system interface (Hermawan & Amirullah, 2021). Key informants ranged from central strategic actors (the Director of Implementation and the Pusdatin Development Team) to local technical implementers (the Head of the Regional Treasury Office and the Expenditure Treasurer) to ensure robust triangulation of perspectives (Mariyono, 2024). Secondary data was extensively collected from a documentary review of regulations, logs of system-related issues (helpdesk tickets), and summaries of disbursement timelines (SP2D) (Salam, 2023). The entire dataset was then analyzed using interactive qualitative data analysis techniques (data reduction, linear thematic data presentation according to the CIPP framework, and verification of tentative conclusions) to ensure the scientific validity and reliability of the findings, a standard of analytical rigor required in institutional transformation studies (Creswell & Creswell, 2018; Sugiyono, 2019).

### 3. Results and Discussion

The large-scale implementation of an e-government ecosystem in the domain of public financial management and administration at the national level is not merely the installation of a computer software interface; rather, it constitutes a large-scale institutional disruption and transformation that requires absolute alignment between top-down regulatory frameworks, the resilience of computing infrastructure, the adaptability of bureaucratic culture, and the neuro-technical capacity of its human resources (Septiani & Isnawaty, 2024; Triwahyuni & Fatmawati, 2024). The in-depth findings of this comparative research clearly confirm a classic governance paradox: that although the system design architecture and policy ideals at the central ministry level have been formulated holistically, rationally, and futuristically, the reality of execution at the local frontline level (street-level bureaucracy) reveals sharply divergent and asymmetrical variations. To systematically unravel the tangled threads of these implementation anomalies, the analysis of research results and elaboration of the discussion are detailed through the lens of the four-dimensional CIPP evaluation framework as follows.

#### 3.1. Context Evaluation: Toward a Paradoxical Single Data Architecture

The implementation of SIPD is philosophically designed to boost transparency and eliminate the phenomenon of “information silos” left over from fragmented legacy financial management systems. Ontologically, this centralization policy is fully aligned with the global trend of implementing Integrated Financial Management Information Systems (IFMIS) to achieve fiscal efficiency (Ahmad & Furqan, 2025; Aryani, 2023).

Findings from in-depth interviews with a panel of macroeconomic policymakers from the Directorate General of Regional Finance and the Development Team reveal that the ontological objective of the SIPD system’s design was to literally translate legal regulations into a set of strict computational algorithms in a precise and prescriptive manner (Setiawan & Anisykurillah, 2024). Philosophically, the SIPD was designed with a high level of security intervention to serve as the sole source of validity and absolute truth (single source of truth). This algorithm is designed to ensure non-manipulative administrative governance, where no regional expenditure disbursement documents can be issued outside of the programs, activities, and sub-activities that have been locked in since the strategic planning stage (smart planning and budgeting concept) (Hasanah et al., 2025; Setiawan & Anisykurillah, 2024).

Shifting to the level of actors’ perceptions in the regions, a contextual evaluation of the three research sites—West Java, Banten, and Jambi provinces—generally indicates an adequate level of cognitive acceptance of the policy’s good intentions. Regional leaders, from the Regional Secretary down to the Head of the Regional Financial Management Agency (BPKAD), unanimously recognize and fully support the urgency of enhancing public transparency, streamlining reporting, and accelerating auditability brought about by the SIPD system (Halim, 2019).

However, a more critical examination of the context has also revealed a blind spot and a fundamental conceptual flaw in this policy design: namely, the illusion and assumption of uniform capacity. This policy architecture for financial management via SIPD was produced and implemented in an imperative, massive, and simultaneous manner (a “big bang” approach) without an asymmetric transition process that accounts for the varying levels of digital readiness and fiscal capacity disparities among provinces in Indonesia. Consequently, a policy design that appears

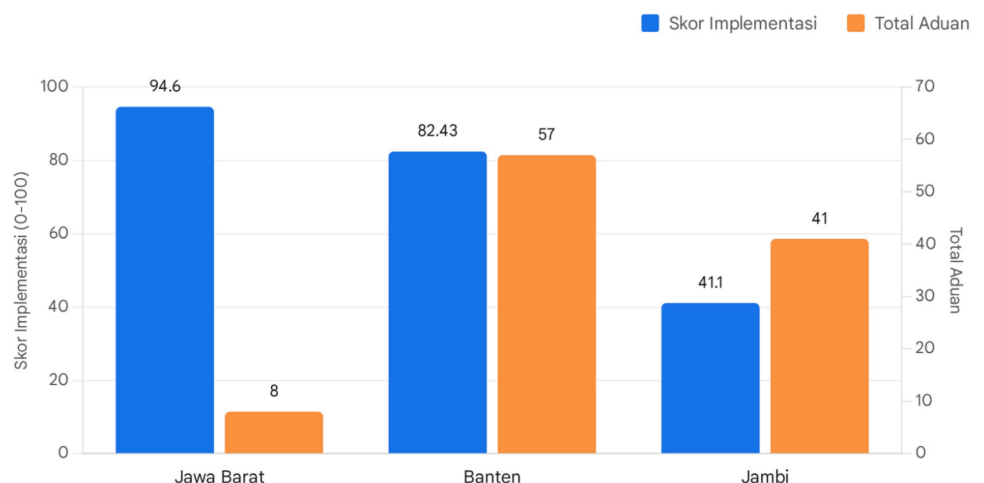
so elegant and revolutionary on paper in Jakarta’s presentations immediately suffers fatal distortions when forced to be replicated into regional institutional ecosystems that lack even a comparable managerial foundation. In Jambi Province, as a representative of the lower-tier cluster, political support for this digital reform policy is very high; however, the actual operational context on the ground demands a more gradual data migration and transition process, rather than a radical change that would immediately strip away the recording authority of their legacy systems (Tanan et al., 2025). It is precisely this uniformity of regulations imposed despite the diversity of existing conditions that will eventually become the root cause of a series of malfunctions in the operational phase.

### 3.2. Input Evaluation: Infrastructure Gaps and Human Capital Deficits

Theoretically and from a regulatory perspective, the success of the digital financial management system (IFMIS) transformation in the public sector depends heavily on the maturity of the input dimension, which includes the equitable distribution of information technology infrastructure and the level of digital literacy among human resources (HR). Current academic discourse emphasizes that without an adequate human capital foundation, system automation will only create new administrative burdens rather than efficiency and widen the digital divide between regions (Maria & Halim, 2026). In the context of SIPD, central government regulations assume uniform readiness across all regions. However, empirical analysis confirms that this ideal assumption clashes sharply with the reality of institutional capacity asymmetries on the ground (Lakat, 2025; Wujarso et al., 2025).

Field evaluations confirm extreme disparities in operational readiness. West Java Province serves as a national benchmark, reaping the benefits of its historical investments in strengthening the ICT infrastructure ecosystem and human resource competencies. In contrast, conditions in Banten and Jambi Provinces reveal deficits

## Perbandingan Skor Implementasi dan Total Aduan Sistem SIPD per Provinsi (TA 2024)



Kesenjangan kapasitas SDM dan infrastruktur berbanding lurus dengan tingkat keberhasilan implementasi. Provinsi dengan tingkat maturitas digital rendah (Jambi) mencatatkan skor implementasi terendah diiringi rasio aduan teknis yang signifikan.

Data source: [Kementerian Dalam Negeri](#)

Figure 1. Comparison of SIPD System Implementation Scores and Total Complaints by Province in 2024

in human capital and infrastructure that directly hinder system implementation. The bureaucracy’s limited understanding of accrual-based accounting logic triggers data entry fatigue. Even more critically, the instability of broadband connectivity in Jambi consistently causes server timeouts precisely during the upload of mass disbursement documents (Gracya & Purwanti, 2026).

This disparity in input dimensions correlates linearly with a surge in operational obstacles, as illustrated in the 2024 SIPD system complaint comparison chart (Figure 1). The high escalation of technical complaints in regions with low digital maturity proves that the vulnerability of SIPD implementation does not stem solely from software architecture flaws, but rather from the failure to mitigate the scarcity of essential infrastructure and the absence of legally binding disaster recovery protocols. This reality validates the empirical postulate that deficits in institutional capacity and infrastructure are the most destructive variables threatening the effectiveness and accountability of e-government systems in developing countries (Badewin et al., 2025; Nisa & Tamrin, 2025).

### 3.3. Process Evaluation: Operational Dynamics, API Congestion, and Shadow Accounting

Evaluate the process of assessing the extent to which regional operations comply with IFMIS regulatory standards. Normatively, this system mandates a linear, automated, and paperless administrative workflow. However, operational realities reveal massive procedural dissonance resulting from the absence of standardized Business Process Reengineering (BPR) prior to the system’s launch. This is confirmed by the Directorate General of Regional Finance, which stated that, “The implementation process in local governments is still in the adjustment phase, so it has not yet fully aligned with the ideal business process.” Current academic discourse emphasizes that forcing digital transformation without mature business process reengineering will merely shift manual bureaucracy into an electronic format, triggering new bottlenecks rather than accelerating services (Gracya & Purwanti, 2026; Nisa & Tamrin, 2025).

Table 1. Typologies of Information Flow Asymmetry and the Implementation of SIPD

Evaluation Classification	West Java (High Performance)	Banten (Moderate Performance)	Jambi (Low Performance)
Data Integration Flow Conditions	Streamlined: Data flows with precision; plans and budgets are aligned.	Bottleneck: A backlog and queue of documents have formed at the final-layer authentication and authorization stage.	Fragmented: Disrupted data connectivity; bureaucratic processes are circumvented through additional manual input.
Patterns of Government Officials’ Adaptation to the System	Systemic: Obstacles are resolved through improvements to workflow validation within the application.	Reactive: Reporting processes often require integrations that frequently fail to synchronize	Shadow: Manual systems (paper/spreadsheets) are activated in parallel due to a loss of trust in the system.
Asymmetry in Infrastructure and API Integration (Ministry of Home Affairs – Banks)	API interoperability between BPKAD and the Core Banking system is functioning adequately and stably.	Limitations in regional banks’ API capabilities result in SP2D status being issued, but the fund transfer not being executed.	Integration is highly prone to timeouts; physical disbursement often depends on risky manual cross-validation.

Source: Research Findings. Processed Data. 2026.

These process disparities are clearly documented in the data integration flow typology (Table 1). The most critical bottleneck stems from the incompatibility of Application Programming Interface (API) synchronization between the central SIPD server and the regional banks’ core banking systems, particularly in Banten and Jambi provinces. The Head of the Provincial Finance and Asset Management Agency (BPKAD) of Jambi Province complained, “The obstacle we frequently face is delayed data synchronization, preventing the process from being conducted in real-time.” This incompatibility paralyzes the immediate cash transfer order cycle, forcing

officials to print physical documents for manual validation at bank counters. This failure of interoperability confirms international literature reviews demonstrating that e-government infrastructure in developing countries is highly vulnerable to bottlenecks at third-party integration points, creating operational latency that is detrimental to cash accountability (Badewin et al., 2025).

As a defensive response by the bureaucracy to this systemic impasse, local administrators have developed maladaptive behaviors in the form of double-entry bookkeeping and shadow accounting. A statement by the Head of the Banten Provincial BPKAD explicitly acknowledged that, “In practice, there are still some processes carried out manually because the system has not fully accommodated field needs.” The absence of rollback rights forces officials to maintain legacy records clandestinely to avoid administrative sanctions in the event of validation errors. This redundant practice not only doubles the workload but also fatally erodes the institutional trust of local government officials in the reliability of the SIPD (Hasanah et al., 2025; Kusumawardhani, 2023).

### 3.4. Product Evaluation: National Visibility vs. Local Operational Paralysis

In academic discourse, the outcomes of the Integrated Financial Management Information System (IFMIS) should ideally be capable of producing timely, relevant, and reliable financial data to ensure transparency and accountability in public sector governance (Lakat, 2025; Pasape & Godson, 2022). However, an evaluation of the SIPD reveals a paradoxical contradiction between central policy expectations and the reality of local practices. At the national level, the system is recognized as successfully presenting a macro-fiscal oversight dashboard with absolute visibility that effectively curbs the manipulation of reports (window dressing) (Ahmad & Furqan, 2025). However, at the local operational level, the quality of the outputs is severely distorted by the incompatibility of administrative processes and infrastructure.

Table 2. Status of Disparities in the Implementation of Provincial Cash Disbursement Administration Documents (SP2D) for 2024

Province Locations	Total Issued SP2D Documents (SIPD)	Status: Transferred	Status: Not Transferred	Status: Unknown	Administrative Efficiency Percentage
West Java Province	51	51	0	0	100.00% (Highly Efficient)
Banten Province	8,689	8,683	0	6	99.93% (Critical for Bank API Authorization)
Jambi Province	3,612	3,491	121	0	96.65% (High Delay Rate)

Source: Aggregated Summary of Data from the Dashboard of the Directorate General of Regional Finance Development, Ministry of Home Affairs, 2024. Processed data. 2026..

This polarization of impacts is clearly reflected in the disbursement statistics (Table 2). West Java Province successfully achieved a 100% absorption rate for Fund Disbursement Orders (SP2D) thanks to disciplined execution procedures. Conversely, operational performance in Banten and Jambi provinces has stagnated; hundreds of disbursement documents worth billions of rupiah have been held up due to authorization failures at the banking integration gateway and the rejection of rigid budget ceiling entries (garbage in, garbage out). These critical delays in the realization of local cash flow undermine the principle of the Service Level Agreement (SLA) for public services and risk disrupting the local economic cycle, which is heavily dependent on stimulus from local government spending.

The failure of this product optimization validates the argument in recent literature that the outcomes of digital financial governance transformation will not be effective if they rely solely on the availability of cloud computing platforms. The quality of e-government products is largely determined by the robustness of supporting infrastructure, compliance discipline, and comprehensive institutional readiness (Maria & Halim, 2026; Wujarso et al., 2025). Without alignment between the sophistication of the central system and regional adoption capacity, there is concern that the final SIPD product will merely create an illusion of transparency that masks functional paralysis at the front lines of government bureaucracy (Nisa & Tamrin, 2025).

### 3.5. Mitigation Responses and Institutional Adaptation Needs

In response to the significant escalation of adoption-related friction in the field, the Directorate General of Regional Finance has adaptively shifted its role from an authoritative body to that of a technical support facilitator. Mitigation efforts have been accelerated sporadically through the implementation of massive technical guidance, the establishment of a centralized Helpdesk Center, and iterative interface updates (Agile Development Patching) (Angreani Adare et al., 2024). Nevertheless, these reactive “firefighting” strategies have not fully addressed the core of the architectural pathology. The absence of standardized Standard Operating Procedures (SOPs) that translate algorithmic sequences into business process reengineering (BPR) leaves local administrators navigating using the residual logic of the old system. To ensure the sustainability of this IFMIS, the ministry is required to decentralize measured rollback rights to provincial authorities, increase the elasticity of cloud storage capacity, and institutionalize continuous human resource capacity engineering, rather than focusing solely on the euphoria of software installation (Irmawati et al., 2025; Pasape & Godson, 2022).

## 4. Conclusion

Overall, the CIPP evaluation concluded that the optimization of local government financial management and administration through the SIPD at the provincial level has not yet been fully achieved due to institutional capacity disparities. Although the integration of a single data source has been relevant in context, input disparities—in the form of a digital infrastructure deficit and low human resource literacy—have triggered disruptions in operational processes, such as API synchronization failures and the persistence of shadow accounting practices. Consequently, the outcomes reveal disparities; national fiscal visibility has increased rapidly, yet the efficiency of cash disbursement (SP2D) in low-capacity regions has stagnated. Therefore, central government intervention must absolutely shift from reactive technical updates toward standardizing Business Process Reengineering (BPR) and sustainable human resource capacity building to achieve resilient financial governance.

This study has limitations, namely that the scope of the study is limited to three provincial clusters and focuses exclusively on the administrative module during a short observation period. The descriptive qualitative approach used also limits the ability to generalize the data at the macro level. In response to these limitations, future research is recommended to adopt a quantitative or mixed-methods approach with a broader and more evenly distributed regional sample. Furthermore, an empirical analytical study on the effectiveness of integrating artificial intelligence (AI) and large-scale data analytics into the Integrated Financial Management

Information System (IFMIS) ecosystem is urgently needed to strengthen predictive fiscal accountability monitoring models in the future.

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