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Analysis of the Application of the Local Government Information System (SIPD) in Realizing Transparency and Accountability at the Regional Finance and Revenue Management Agency (BPKPD) of Binjai City (Centralization)

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ABSTRACT

This study aims to analyze the implementation of the Regional Government Information System (SIPD) in realizing regional financial transparency and accountability in the Binjai City BPKPD, with a special focus on the transition period from SIMDA to SIPD. The research uses a descriptive qualitative approach with a case study design. Data was collected through semi-structured in-depth interviews with five informants, non-participatory observations, and a documentation study of the Binjai City BPKPD Strategic Plan 2025-2029. The analysis used the interactive model of Miles, Huberman, and Saldana (2014) which was interpreted through the six-dimensional model of the DeLone and McLean (2003) Model. The results of the study reveal an asymmetrical effectiveness profile: the quality of information and the use of the system are considered effective; the quality of the system and user satisfaction are quite effective; Meanwhile, the quality of service is less effective due to the absence of formal technical guidance. The net benefits are realized through real-time data transparency and a permanent audit trail, although the full potential of SIPD has not been fully realized as confirmed by the Binjai City BPKPD Strategic Plan 2025-2029.

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1. Introduction

Transparency and accountability are two fundamental pillars of good governance that directly determine the quality of government accountability to the public (Division & Support, 1997). (Mardiasmo, 2018) defines transparency as the government's openness in providing information on public resource management to parties in need, while accountability is the obligation of trustees to account for all actions and activities to the trustees, both vertically to the central government and horizontally to the community (Batubara, 2023). In the context of local government, transparency refers to the principle of openness that allows the public to know as widely as possible about regional financial management because the funds ultimately belong to the people (Hidayani et al., 2023). In line with the development of the digital era, the integration of information technology in the public sector accounting system is a crucial instrument to mitigate information asymmetry, strengthen the quality of accountability, and build public trust in government financial management (Ladesye Napitupulu et al., 2024; Sagala & Siregar, 2023; Yona Andreani & Laylan Syafina, 2022).

However, realizing regional financial transparency and accountability in Indonesia faces complex systemic challenges. The fragmentation of information systems between planning, budgeting, and reporting processes creates data silos that hinder comprehensive transparency and complicate vertical and horizontal accountability (Bastian, 2019). Weak integration between stages of financial management results in data inconsistencies that have direct implications for the quality of local government accountability reports. This condition

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is exacerbated by the limited capacity of human resources in managing financial information systems and the low digital literacy of regional apparatus (Nasution & M.Si, 2021). (Hasibuan & Hasibuan, 2022) emphasized that transparency is not just a formal obligation, but an integral part of governance that has a real impact on the quality of institutional performance, a condition that cannot be realized without an integrated and reliable information system.

Responding to these challenges, the government through the Ministry of Home Affairs presents the Regional Government Information System (SIPD) as an integrated technology solution based on the Regulation of the Minister of Home Affairs Number 70 of 2019. SIPD is designed as a single platform that unites the entire cycle of regional financial management from planning, budgeting, administration, to reporting in one centralized digital ecosystem managed by the Ministry of Home Affairs (Alfani & Nasution, 2022). This system is equipped with a locking system that prevents retroactive data modification, standardization of spending account codes for national uniformity, as well as a comprehensive audit trail that allows the tracking of every financial transaction permanently as an internal control instrument that ensures every transaction can be accounted for (Syabri & Kusmilawaty, 2019; Vitriana et al., 2022). By integrating the entire financial cycle in one platform, SIPD is expected to be able to eliminate data fragmentation which has been the main obstacle to regional financial transparency and accountability (M. Putra Abdul Rozak Barus et al., 2023).

By 2024, more than 500 local governments have adopted SIPD. However, its implementation has consistently shown results that have not been optimal. Studies in the City of Pekanbaru (Vitriana et al., 2022), Wonosobo Regency (Wahyuningsih et al., 2022), Denpasar City (Glyptis et al., 2020), and Medan City (Nasution & M.Si, 2021) consistently found that SIPD has not been effective in realizing transparency and accountability as expected, and even still relies on SIMDA companion applications to maintain operational stability. (Suardiyanti et al., 2025) and (Yuanita & Choiriyah, 2025) confirm that the limitations of human resource capacity and digital infrastructure remain unresolved structural barriers. This gap between system design and implementation reality reflects the classic challenges of e-government in developing countries, where regional technical and institutional readiness often do not align with central reform ambitions (Lapuente & Van de Walle, 2020).

This condition is empirically confirmed in Binjai City, where the Binjai City BPKPD Strategic Plan (Renstra) 2025-2029 places "Strengthening Transparent and Accountable Regional Financial Governance" with a priority criterion scale value of 90 and "Utilization of Information Technology in Regional Financial, Asset, and Revenue Management" with a priority criterion scale value of 88 out of a scale of 100 as the two most urgent strategic issues that must be resolved in the 2025-2029 period. In the framework of the preparation of the Strategic Plan, the higher the value of the criterion scale of a strategic issue, the greater the urgency and priority of handling it, not the optimal achievement. This condition confirms that although SIPD has been implemented since 2023, its main goal of realizing regional financial transparency and accountability has not been optimally achieved. Furthermore, the Strategic Plan also notes that the migration from SIMDA to SIPD is still in the stage of continuous refinement, indicating that the system transition period is a critical period that is prone to administrative errors, data inconsistencies, and potential loopholes in the financial control system (Glyptis et al., 2020; Ramadani et al., 2022).

Previous studies on SIPD implementation, such as those conducted in Pekanbaru City (Vitriana et al., 2022), Wonosobo Regency (Wahyuningsih et al., 2022), Denpasar City (Teken & Romarina, 2024), and Medan City (Nasution & M.Si, 2021), share three limitations relevant to this study. First, they evaluate SIPD only after the system had reached a stable operational phase, leaving the critical dynamics of the SIMDA-to-SIPD transition period unexamined. Second, all four were conducted in metropolitan cities or large regencies with fiscal and human-resource capacities substantially different from medium-sized satellite cities, so their findings cannot be assumed to generalize to the latter context. Third, in line with the broader literature (Musfirah et al., 2024; Sofyani et al., 2020), these studies tend to examine transparency or accountability partially rather than as two simultaneously and measurably assessed constructs. This study addresses these three limitations concurrently, positioning it distinctly from the existing body of SIPD research. Based on these gaps, this study aims to analyze the implementation of SIPD in realizing regional financial transparency and accountability in the Binjai City BPKPD. The novelty of this research lies in three aspects. {1} this study is the first study that specifically analyzes the implementation of SIPD as an instrument of transparency and accountability in the context of medium-sized cities characterized by satellite cities which have been underrepresented in the literature. {2} this study uses the value of the priority criteria for strategic issues in the Binjai City BPKPD Strategic Plan 2025-2029 as objective empirical evidence about the urgency of the methodological approach problem that was not found in the previous SIPD research. {3} this study pays special attention to the transition period from SIMDA to SIPD as a critical phase that has been neglected in the literature, as well as producing concrete prescriptive recommendations that can be replicated by hundreds of other medium-sized cities in Indonesia.

2. Methods

This research uses a qualitative approach with descriptive research and case study design. The qualitative approach was chosen because this research aims to understand in depth the implementation of SIPD in the context of local government organizations, where the complexity of user experiences and perceptions cannot be reduced to mere numerical data (Weyant, 2022). The case study design is used to allow an in-depth and contextual exploration of the phenomenon of information system implementation in one specific analysis unit, namely the Binjai City BPKPD (Moleong, 2018). This approach is seen as most appropriate to uncover the nuances of implementation that cannot be captured through quantitative approaches, including user adaptation dynamics, operational constraints, and contextual institutional impacts.

The subject of this research is the Binjai City Regional Finance and Revenue Management Agency (BPKPD) as an agency directly responsible for regional financial management and has implemented SIPD since 2023, while the object of the research is the implementation of SIPD in realizing regional financial transparency and accountability. The informants were selected purposively based on their direct involvement and in-depth knowledge of the operationalization of SIPD, consisting of five informants representing all levels of system users: Acting Secretary of BPKPD as a strategic policy maker, Head of Accounting and Budget as managerial users, Head of Program Subdivision as technical coordinators, and SIPD Operators as operational users. The adequacy of five informants is justified by two considerations. First, in a single-case, single-agency design, these five informants constitute a purposive census of every distinct organizational role directly involved in the operationalization of SIPD at BPKPD Binjai City, from strategic policy-making to daily operational input, so that no relevant user perspective within the case is omitted. Second, data collection was concluded once responses across informants converged and no new substantive themes emerged in relation to the six DeLone and McLean dimensions, indicating that thematic saturation had been reached within the scope of this case.

Data was collected through three main instruments. First, a semi-structured in-depth interview was conducted with the five informants to explore their perceptions, experiences, and assessments of the implementation of SIPD, operational barriers, and its impact on regional financial transparency and accountability during the transition period from SIMDA to SIPD. Second, non-participatory observations are carried out directly within the Binjai City BPKPD to observe the actual conditions of the use of SIPD in the daily operations of the agency. Third, a documentation study on the Binjai City BPKPD Strategic Plan (Renstra)

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2025-2029 as a secondary data source used to support and confirm the findings from interviews and observations. The simultaneous use of all three instruments was carried out to strengthen the depth of analysis through source triangulation and triangulation methods (Miles et al., 2014).

Data analysis used the interactive analysis model of Miles, Huberman, and Saldana 2014 which consisted of three stages that took place simultaneously and continuously. First, data condensation involved verbatim transcription of all interview recordings, followed by open coding of the transcripts to identify recurring concepts, which were then categorized into the six dimensions of the DeLone and McLean (2003) Information Systems Success Model. Second, data display organized the condensed and categorized codes into a descriptive narrative and summary matrix (Table 1) for each dimension, allowing patterns and contradictions across informants to be readily identified. Third, conclusion drawing and verification involved interpreting the categorized findings in light of the triangulated observation and documentation data, revisiting earlier interview data when new patterns emerged, and finalizing the effectiveness rating per dimension only once the interpretation was consistent across all three data sources. Data validity is ensured through source triangulation and method triangulation. Source triangulation was carried out by cross-checking the accounts given by informants at different organizational levels (strategic, managerial, technical, and operational) to identify convergence and divergence in their perceptions of SIPD's effectiveness. Method triangulation was conducted by comparing interview findings against direct observation of system use in daily operations and against documentary evidence from the Binjai City BPKPD Strategic Plan 2025-2029, so that claims made in interviews could be independently corroborated. In addition, interview transcripts were returned to each informant for member checking, allowing them to confirm that their statements had been recorded accurately and in accordance with the intent of the questions asked before the data were coded and analyzed. All analysis results were interpreted based on the six dimensions of the Information System Success Model of DeLone and McLean

(2003) which include system quality, information quality, service quality, usage, user satisfaction, and net benefits, resulting in a holistic and structured evaluation of the implementation of SIPD in BPKPD Binjai City (DeLone & McLean, 2003)

3. Results

The Binjai City BPKPD is adopting SIPD in 2023, transitioning from a local installation-based system (SIMDA) to a cloud-based platform that is fully managed by the Ministry of Home Affairs through Pusdatin. Based on the results of in-depth interviews with five informants, field observations, and documentation studies of the Binjai City BPKPD Strategic Plan 2025-2029, the research findings per dimension of DeLone and McLean (2003) are summarized as follows.

Table 1. Effectiveness of SIPD Implementation Based on the Dimensions of DeLone and McLean (2003)

D&M Dimensions	Key Indicators	Effectiveness Rate	Field Findings
System Quality	Reliability, ease of use, system availability	Quite Effective	Recurrent tissue disorders are structural; interface is easy to operate; Stability increased compared to the previous 2 years
Quality of Information	Accuracy, completeness, consistency, SAP suitability	Effective	Financial statements meet SAP; consistent module integration; The Principle of the Single Source of Truth
Quality of Service	Technical guidance, support responsiveness, assistance accessibility	Less Effective	There has been no formal technical guidance since 2023; slow Pusdatin response (1 hour-1 month); BPKPD comes directly to Jakarta

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System Usage	Adoption rate, frequency of use, module coverage	Effective	The main platform of the entire financial cycle; three-level architecture of OPD-BPKPD-Ministry of Home Affairs; Segregation of Duties Is Realized
User Satisfaction	Perception of satisfaction, acceptance of the system, appreciation of features	Quite Effective	Conditional and differential; the managerial level is more satisfied; Highest appreciation for the Journal's cleansing feature
Net Benefits	Transparency, accountability, financial management efficiency	Quite Effective	Real-time transparency and a permanent audit trail are realized; full potential has not been realized (Strategic Plan score 90 & 88)

Across the six dimensions summarized in Table 1, the findings reveal a consistent and asymmetrical pattern: dimensions tied to the system's technical output and embedded use, information quality and system use, are rated effective, while the dimension tied to external human support, service quality, is rated the least effective of all six. This asymmetry, elaborated dimension by dimension below, is the central empirical pattern that the Discussion section interprets against prior SIPD research.

System Quality

The reliability of network infrastructure is the most dominant issue that is consistently identified by all informants. As a cloud-based system that is fully managed by the Ministry of Home Affairs, disruptions to the central server have a direct impact on all users at the regional level without the ability to intervene independently. This condition is most critical in the peak period of APBD preparation. The Head of Accounting revealed that

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"if there is an error, we cannot journal, we cannot input data, sometimes the interruption is also up to 2 days" (Head of Accounting, 2026). In line with that, the Head of Budget stated that "if the peak is at its peak, sometimes it takes a while to make an error, if it is indeed the season of budget preparation, it is often SIPD maintenance from the ministry, we wait maybe how many hours or 1 day can we do" (Head of Budget Division, 2026). On the other hand, the Operator notes that there are significant improvements "for now there are not too many problems compared to 2 years ago" (Operator/User Staff, 2026). Regarding ease of use, the Head of Budget emphasized that the system interface is easy to understand, while the Operator stated that the system is "easy to learn and easy to use" (Operator/User Staff, 2026). One critical finding was also identified in the locking system of the budgeting module, the Head of Budget Division revealed that "if there is a shift, it can shift again, so it does not lock, it should be that if the ceiling has been realized, it should not be shifted again because that is what can be conceded" (Head of Budget Division, 2026). This problem has been reported to the Pusdatin but has not received a definite follow-up. Taken together, these accounts indicate that SIPD's system quality is constrained less by design flaws than by the structural risk inherent in a fully centralized, single-server architecture, a risk that has measurably eased over time but remains a latent vulnerability at peak reporting periods.

Information Quality

The quality of information produced by SIPD received a consistently positive assessment from all informants. The Head of Accounting stated that the financial statements produced by SIPD are in accordance with Government Accounting Standards (SAP) because "indeed this Ministry of Home Affairs product has been adjusted to the SAP product itself" (Head of Accounting, 2026). Regarding the completeness of the data, the same informant revealed that "it seems that all accounts already exist, in the beginning there were indeed some accounts that did not match but the more here it is the better" (Head of Accounting, 2026). In line with that, the Head of Budget confirmed the integration between the modules that ran smoothly by stating that the data from BAPPEDA "has entered the RKPD RAB and it directly enters the Budgeting SIPD, so there has never been an impactful discrepancy" (Head of Budget Division, 2026). In terms of storage accuracy, the Operator states that the historical data from the transition period of SIMDA to SIPD has been successfully transferred in a "complete and accurate" manner (Operator/User Staff, 2026). Taken together, these findings indicate that SIPD's information quality is the strongest-performing dimension in this case, driven by built-in regulatory compliance, automated cross-module validation, and a single source of truth that eliminates the data fragmentation historically associated with SIMDA.

Service Quality

Service quality is the most critical dimension in the implementation of SIPD at the Binjai City BPKPD. All informants consistently confirmed the absence of formal technical guidance. The Head of the Budget Division stated "if our technical guidance has never attended the SIPD technical guidance, we often consult with the Ministry of Home Affairs if, for example, there is a problem" (Head of Budget Division, 2026). In line with that, the Operator emphasized that "training has never existed so it is still very lacking" (Operator/User Staff, 2026). The responsiveness of the technical support of the Ministry of Home Affairs is considered very uncertain. The operator revealed that "the time to solve the problem is not certain, it can be fast, it can be 1 hour 2 hours 1 day even, sometimes 2 weeks, sometimes a month" (Operator/User Staff, 2026). This was confirmed by the Head of Accounting who stated that "as long as there is no error, the network is satisfied, but if there is a network error and there is no place to ask questions, we start to get tired" (Head of Accounting, 2026). Facing this limitation, the Acting Secretary of BPKPD took proactive steps by stating that his party "directly coordinated with the center, directly came to the Ministry of Home Affairs" (Acting Secretary, 2026). The Head of Budget added that there is a discourse on the formation of Pusdatin representatives in each region, although "for this year it is said that there is a discourse that people want to make representatives in each region, maybe for the preparation of next year's APBD" (Head of Budget Division, 2026). Taken together, these accounts converge on a single conclusion: service quality is the weakest link in SIPD's implementation at BPKPD Binjai City, where the absence of any formal technical guidance since 2023 has forced the agency into ad hoc, resource-intensive coping strategies rather than being supported by a reliable central service function.

Use

The adoption rate of SIPD in the Binjai City BPKPD has reached a substantial level. The Acting Secretary revealed that SIPD covers the entire financial cycle in one platform "starting from planning at BAPPEDA and budgeting in us, administration in the treasury sector to reporting in accounting all have 1 application" (Acting Secretary, 2026). Regarding the division of roles, the Head of the Budget Division explained that "from the budget field, it is just a matter of handing it over to the OPD to input it, so we are here only as lending the sector" (Head of the Budget Division, 2026). The knowledge transfer mechanism is carried out internally without formal training The Acting Secretary revealed that "it is the head of the sub-division himself or the head of the sub-division who teaches the staff" (Acting Secretary, 2026). However, the Operator identifies a significant usage gap by stating that "there are also manual ones related to BUMD, BLUD, CKM reports, it is still manual because the one who manages it is not directly from the APBD" (Operator/User Staff, 2026). Regarding cross-level reporting, the Head of Accounting confirmed that the Budget Realization Report (LRA) is still reported to the provincial government every month through a separate coordination channel outside SIPD, namely via email or WhatsApp, as a fulfillment of regulatory obligations to the governor as the representative of the central government in the regions. Taken together, these findings show that SIPD has achieved substantial and structurally embedded adoption for the core financial cycle, though its integration remains incomplete for peripheral entities (BUMD, BLUD, CKM) and parallel reporting obligations that persist outside the platform.

User Satisfaction

User satisfaction patterns are conditional and differential between levels. At the managerial level, the Acting Secretary considered the SIPD to be very helpful because "all OPDs can be viewed online and transparently" (Acting Secretary, 2026), while the Head of Budget stated that "it is quite satisfying for this SIPD" (Head of Budget Division, 2026). At the technical level, the Head of Accounting expressed conditional satisfaction, "if there is a rate, what is the rate? As long as there is no network error, we are satisfied, but if there is a network error and there is no place to ask questions, we start to get tired too" (Head of Accounting, 2026). The operator provides a more critical assessment by stating that the SIPD and SIMDA are "almost the same as the former", with the fundamental drawback that any data changes will have to wait for an erratic Pusdatin response (Operator/User Staff, 2026). In the midst of these conditions, the feature that received the most appreciation was the journal cleansing button, the Operator stated "the most useful thing if accounting is called the super/journal cleansing button, so if for example there is an error, it is immediately eliminated" (Operator/User Staff, 2026). The most consistent recommendations from all informants were improvements in network stability and increased technical support response speed from the center. Taken together, these accounts reveal that satisfaction with SIPD is not a uniform organizational sentiment but a stratified one, shaped less by the system's core functionality than by each user's proximity to, and control over, the resolution of technical disruptions.

Net Benefit

The net benefits of SIPD are most evident in increasing transparency and accountability of regional finances. From the aspect of transparency, the Acting Secretary

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revealed that with SIPD "it is very helpful starting from planning in BAPPEDA and budgeting, administration to reporting all have 1 application, so it is very helpful in increasing the accountability of government performance" (Acting Secretary, 2026). The Head of Accounting confirmed the paradigm shift brought by SIPD by stating that "because it will be centralized, yes, so it should be better because the data is directly automatically also sent to the center, so we are transparent throughout Indonesia how much from our side, compared to the previous use of each region's system" (Head of Accounting, 2026). From the aspect of accountability, the Head of Accounting added that "in journaling, evidence is attached" (Head of Accounting, 2026), which directly strengthens the audit and financial accountability footprint. The Head of the Program Subdivision emphasized that the contribution of SIPD is instrumental "this SIPD is in budgeting, administration and reporting" and the AKIP assessment is carried out by the inspectorate which covers many aspects beyond the SIPD figure (Head of Program Subdivision, 2026). This strategic commitment is confirmed in the Binjai City BPKPD Strategic Plan 2025-2029 which places the strengthening of transparent and accountable financial governance with a priority score of 90 and the use of information technology with a score of 88 out of 100 as the two most urgent strategic issues, indicating that the full potential of SIPD has not been fully realized. Taken together, these findings indicate that SIPD's net benefits are real and structurally embedded in transparency and audit-trail mechanisms, yet remain below their full potential, a gap the Binjai City BPKPD itself formally acknowledges through the priority scores assigned in its 2025-2029 Strategic Plan.

4. Discussion

The evaluation of the implementation of SIPD in BPKPD Binjai City was carried out using the Information System Success Model of DeLone and McLean (2003), which allows a holistic assessment of the information system from technical quality to real organizational

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impact. This model was chosen for its proven relevance in evaluating information systems in the public sector, as confirmed by (Sofyani et al., 2020).

System Quality

Network infrastructure reliability is the most dominant issue that is consistently identified from all informants in the context of SIPD system quality in BPKPD Binjai City, as a critical component of system quality which includes reliability, ease of use, and system availability (DeLone & McLean, 2003). The reliability of SIPD is highly determined by the condition of the Ministry of Home Affairs' centralized server which is the only access point for all local governments in Indonesia. This architecture inherently creates a vulnerability that in the information systems literature is known as a single point of failure, where a disruption at a single central point has a simultaneous impact on all users at the regional level (Laudon & Laudon, 2020). In the peak period of the preparation of the APBD when all regions need full access at the same time, the Ministry of Home Affairs often carries out maintenance, creating operational obstacles that cannot be anticipated independently by the regions.

On the other hand, the field data also revealed encouraging developments: the stability of the system was considered much better than the previous two years, and the system interface was considered easy to learn and operate. This condition shows that the process of internalizing the system has been running effectively in a period of less than three years since the initial implementation. This improvement trajectory is consistent with the findings (Suardiyanti et al., 2025) which found that the implementation of SIPD in various regions shows continuous improvement in line with the system updates carried out periodically by the Ministry of Home Affairs. Thus, the challenges in this dimension are structural inherent in centralized architectural design and cannot be fully solved at the regional level without the intervention of the Ministry of Home Affairs as the system manager.

Information Quality

In contrast to the previous dimension, the quality of information produced by SIPD received a consistently positive assessment from all informants. The accuracy of financial data that continues to improve, the completeness of account coverage is increasingly comprehensive, and the conformity of reports with Government Accounting Standards (SAP) as stipulated in Government Regulation Number 71 of 2010 are recurring themes in all interview results. Conformity with SAP is a direct consequence of the design of SIPD as an official product of the Ministry of Home Affairs which was developed following applicable regulations. More than that, SIPD has adaptive advantages that SIMDA does not have, every regulatory change is automatically accommodated in the system without the need for reconfiguration at the regional level, as can be seen from the addition of the Free Nutritious Meal (MBG) menu that immediately appears following the central government's policy.

The seamless integration of data between modules also strengthens this dimension. Data from the planning module in BAPPEDA flows automatically to the budgeting module in BPKPD without significant discrepancies, reflecting the application of the principle of single source of truth, which is a set of data that is used consistently without duplication at all levels of the system as formulated by (Kimball & Ross, 2013), within the framework of integrated data management. Automatic validation mechanisms that reject data that do not conform to the format are also effective guardians of information integrity (Romney et al., 2021). Verification through observation strengthens all these findings visually, the AKLAP dashboard displays 5,719 revenue journals and 24,802 spending journals that are presented accurately in standard format, while the Budget Realization Report displays the realization of regional revenue of 98.39% of the target of a complete, standardized, and cross-regional information output.

Service Quality

The absence of formal structured technical guidance since the SIPD was adopted at the Binjai City BPKPD in 2023 is the most consistent capacity deficit identified from all informants, making service quality the dimension that needs the most attention in the implementation of SIPD. Not a single formal training has ever been held, either by the Ministry of Home Affairs or by BPKPD itself. This condition is contrary to the principles of successful e-government implementation, where structured and sustained technical support is a prerequisite that cannot be ignored (Glyptis et al., 2020). When technical problems arise, the only available channel is an online consultation to the Ministry of Home Affairs Pusdatin with highly erratic responsiveness, varying from a few hours to a month depending on the complexity of the problem and the queue of reports from all over Indonesia. This condition is fundamentally different from SIMDA which has technical representatives in each province, allowing for faster and more contextual handling of issues.

In the face of these limitations, the Binjai City BPKPD developed an institutional response that should be noted, namely going directly to the Ministry of Home Affairs Center in Jakarta to coordinate face-to-face when online coordination did not yield adequate results. This step reflects a high level of institutional commitment, but at the same time exposes the ineffectiveness of regular technical support mechanisms that should be available without having to undertake such a large effort. (Ramadani et al., 2022) states that the shift from a distributed support model to a centralized model in the implementation of e-government at the local level often creates institutional dependencies that weaken regional adaptive capacity if not followed by a proportionate strengthening of the capacity of Pusdatin. The discourse on the formation of technical representatives of the Ministry of Home Affairs in each region, if realized, will be an improvement step in line with the findings (Twizeyimana & Andersson, 2019) which affirm that the success of e-government is highly determined by the availability of technical capacity and institutional support at the local level as a prerequisite for the realization of optimal public value.

Use

The adoption rate of SIPD in the Binjai City BPKPD has reached a substantial level, with this system serving as the main platform for the entire core financial management chain. This high level of usage indicates that users feel the real benefits of the system, a condition that according to (Ho et al., 2019) is the strongest predictor of the acceptance and sustainability of the use of information technology in organizations. The results of direct observation confirm that the operator displays a proficient, relaxed attitude, and does not show any obstacles in the operation of the system, this is a strong indicator that genuine user acceptance has been achieved.

The most significant aspect of the pattern of use of SIPD is the structured role sharing architecture of OPD as data inputtor, BPKPD as verifier and consolidator, and Ministry of Home Affairs as the final data locking authority. This structure directly implements the principle of segregation of duties, namely the separation of functions which is the most fundamental component of internal control in public financial governance ((COSO), 2013), so that no one party can input and authorize financial transactions unilaterally. However, the usage gap in BUMD, BLUD, and CKM entities that are still processed manually confirms that the scope of SIPD integration has not reached the regional financial ecosystem as a whole (Romney et al., 2021). Reporting of LRAs to provinces that continue to run through separate coordination channels outside of SIPD confirms that SIPD's reporting architecture is complementary and does not replace existing regulatory coordination mechanisms.

User Satisfaction

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SIPD user satisfaction patterns are conditional and differential satisfactory when the system is operating normally, but decline significantly when technical glitches occur without adequate response channels. Adequate satisfaction is generally felt at the managerial level, but at the operational technical level, the inability to improve data independently is different from SIMDA which provides such flexibility is the source of dissatisfaction that is most consistently expressed. This difference in perspective between the managerial level and the technical level is in line with the findings (Ho et al., 2019) which states that the intensity and depth of use of the system directly affect the satisfaction dimension most felt by users.

In the midst of these various limitations, the journal cleansing feature or super button in the accounting module received the highest appreciation from technical users. This feature allows for the removal of problematic journals directly without having to wait for Pusdatin's response, giving users a significant sense of control over the technical issues they face on a daily basis. The availability of self-maintenance features that allow users to resolve issues without relying on external parties is a design element that has been proven to significantly increase satisfaction. The expansion of similar features in other areas of SIPD has the potential to be significant in improving the overall condition of user satisfaction, while reducing the burden of Pusdatin services which has been a major bottleneck.

Net Benefit

As the peak dimension in the framework of DeLone and McLean (2003) that integrates the real impact of all previous dimensions, the net benefits of SIPD in BPKPD Binjai City are most clearly manifested in two main constructs, namely transparency and regional financial accountability. From the aspect of transparency, the adoption of SIPD brings a fundamental paradigmatic change. Before the SIPD era, regional financial data was siloed stored on the servers of each region and could only be accessed internally. SIPD fundamentally changes this paradigm through the consolidation of financial data across local governments in a single platform that can be monitored in real-time by the Ministry of Home Affairs, a shift that implements the principle of open government data as a pillar of contemporary public sector governance reform. In line with (Mardiasmo, 2018) which defines transparency as the government's openness in providing information related to public resource management, SIPD's real-time monitoring capabilities realize this definition in a concrete and verified manner.

From the aspect of accountability, the three-layer architecture of the SIPD OPD inputs, BPKPD verifies, the Ministry of Home Affairs structurally locks and builds strong internal control through the separation of functions. All financial transactions leave a permanent digital audit trail and cannot be modified unilaterally, as confirmed through the display of the Journal Posting module in observation. This mechanism directly facilitates audits by the BPK and supervision by the DPRD as the two main pillars of external accountability of local governments. However, it should be noted that the assessment of performance accountability through the Government Agency Performance Accountability System (SAKIP) is not solely determined by the SIPD, but includes order to the rules for the use of the budget and the standards of the overall accountability report assessed by the inspectorate. SIPD's contribution is instrumental in facilitating and strengthening accountability, not being the sole determinant.

SIPD's strategic contribution is confirmed in the Binjai City BPKPD Strategic Plan 2025-2029, which places the Strengthening of Transparent and Accountable Financial Governance with a priority score of 90 and the Utilization of Information Technology in Financial Management with a score of 88 as two of the five main strategic issues of the institution. The high priority scores of the two issues reflect the institutional recognition that SIPD optimization is the most urgent development agenda that must be completed. The gap from the maximum value on both issues can be explained coherently through findings on the upstream dimensions, repetitive system instability and limitations of technical support services, creating conditions where the timeliness of financial reporting cannot be consistently guaranteed. These overall findings strengthen and expand the results of the research (Sofyani et al., 2020) that information technology governance contributes significantly to the accountability and transparency of local governments, by adding nuances that these contributions are instrumental and conditional on the technical quality and service quality of the system. Optimizing the benefits of SIPD is still wide open and is a strategic agenda that has been explicitly set out in the 2025-2029 Strategic Plan as the main priority of the Binjai City BPKPD in the future.

Comparison with Prior SIPD Research and Implications

Compared to prior SIPD case studies, the findings of this study present both continuities and a notable point of divergence. Studies in Pekanbaru City (Vitriana et al., 2022), Wonosobo Regency (Wahyuningsih et al., 2022), Denpasar City (Teken & Romarina, 2024), and Medan City (Nasution & M.Si, 2021) each reported that SIPD implementation had not yet been effective, with local governments continuing to rely on SIMDA to maintain operational stability. The findings of this study confirm the persistence of service-quality deficits identified across all four prior studies, most notably the absence of adequate technical guidance and support, suggesting that this is not an isolated local weakness but a structural feature of SIPD's centralized service architecture, unmediated by city size. However, unlike these four studies, which characterize SIPD implementation in largely uniform terms of ineffectiveness, the present findings reveal an asymmetrical effectiveness profile in which information quality and system use are already rated effective, and net benefits are meaningfully realized through real-time transparency and audit-trail mechanisms. This divergence suggests that effectiveness in SIPD implementation should not be assessed as a single undifferentiated outcome, but as a composite of dimensions that mature at different rates.

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Theoretically, this asymmetry extends the DeLone and McLean (2003) model by demonstrating that, in the context of a centrally mandated public-sector information system, the model's dimensions are not equally sensitive to local implementation efforts: system quality and service quality remain bound by decisions made at the central (Ministry of Home Affairs) level, while information quality, use, and net benefit are more responsive to the operational discipline of the implementing agency itself.

Practically, these findings imply that improving SIPD's overall effectiveness requires interventions at two different levels. For the Ministry of Home Affairs, the persistent service-quality deficit across four independent studies in four different regions signals a need for structural reform, particularly decentralization of technical support capacity, rather than further reliance on informal escalation. For local governments in medium-sized satellite cities such as Binjai, internal measures such as expanding self-service features (akin to the journal cleansing function) and formalizing internal knowledge-transfer practices can meaningfully improve user satisfaction and system use even while central service-quality constraints remain unresolved.

5. Conclusion

This study concludes that SIPD implementation at BPKPD Binjai City has contributed significantly to regional financial transparency and accountability, albeit through an asymmetrical effectiveness profile across the six DeLone and McLean (2003) dimensions. Information quality and system use stand out as the strongest dimensions, anchored in reporting that meets Government Accounting Standards, consistent cross-module integration, and a three-level control architecture (OPD-BPKPD-Ministry of Home Affairs) that enforces genuine separation of duties. System quality and net benefit are realized but qualified: network disruptions remain a structural risk of centralized cloud architecture, and the Binjai City BPKPD Strategic Plan 2025-2029 itself confirms, through

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priority scores of 90 and 88, that SIPD's full potential has not yet been reached. Service quality remains the most critical weakness, driven by the absence of formal technical guidance since 2023, while user satisfaction is stratified: adequate at the managerial level but more critical operationally, tempered by strong appreciation for self-service features such as the journal cleansing function.

Theoretically, this study contributes to the e-government literature by confirming the relevance of the DeLone and McLean (2003) Model in evaluating local government financial information systems in the context of developing countries, while adding to the findings that the effectiveness of implementation is asymmetrical between dimensions and is strongly influenced by the quality of technical support. Practically, this study is the first study to analyze the implementation of SIPD in medium-sized cities characterized by satellite cities using Strategic Plan data as objective empirical evidence of a methodological approach that was not found in previous research and can be adopted by other researchers in examining the implementation of information systems in the public sector.

This research has several limitations that need to be considered. First, the scope of a single case study in one agency makes the generalization of findings need to be done with caution. Second, this study does not substantively analyze the content of the financial statements produced by SIPD, the assessment of the accuracy of budget realization and the suitability of financial reporting in depth is the realm of external audits that are outside the scope of this study. Third, interview data reflects the perceptions of informants at a given point in time so that the dynamics of the ever-evolving implementation may not be fully captured.

Based on these findings and limitations, this study recommends three intervention priorities. First, the Ministry of Home Affairs needs to strengthen a more decentralized technical support mechanism, the formation of Pusdatin representatives at the regional or provincial level will significantly reduce the technical support bottleneck, which is currently the biggest obstacle to the effectiveness of SIPD. Second, the implementation of structured and periodic technical guidance for all SIPD users at the regional level needs to be programmed systematically, not only relying on informal knowledge transfer between employees. Third, expanding the scope of SIPD integration for financial entities that are currently still processed manually, such as BUMD, BLUD, and CKM, needs to be a priority for system development in the future. Further research is recommended to conduct comparative studies between medium-sized cities to confirm and expand the identified SIPD implementation patterns, as well as integrate substantive analysis of financial statements to provide a more comprehensive assessment of transparency and accountability.

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