



Application of Information Technology for Enhancing Accounting Effectiveness in the Regional Finance and Assets Agency

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ABSTRACT

Purpose: This study aims to evaluate the effectiveness of the Regional Government Information System (SIPD) in improving efficiency, transparency, and accountability in regional financial management, with a focus on identifying the factors that hinder its optimal implementation at the Regional Financial and Asset Agency (BKAD) of Paniai Regency. **Design/Methodology/Approach:** A qualitative research design was employed using in-depth interviews and document analysis. Informants included one division head, three financial staff members, and two IT personnel at BKAD. Data were analyzed using thematic analysis to identify major challenges and recurring themes related to SIPD implementation. **Findings:** The study reveals that SIPD implementation is constrained by several challenges, including limited internet connectivity in remote areas, inadequate technological infrastructure, and insufficient human resources with the necessary technical expertise. Additionally, poor synchronization between BKAD and other regional government agencies (OPDs) in financial reporting contributes to delays in the preparation of financial statements. **Practical Implications:** The findings suggest that enhancing technological infrastructure, procuring compatible devices, and providing targeted training programs are crucial to improving system performance. Furthermore, strengthening regulations and policies is necessary to ensure compliance and inter-agency coordination. **Originality/Value:** This study contributes to the literature by offering empirical insights into SIPD implementation challenges in an under-researched region, providing actionable recommendations for policymakers and practitioners to enhance financial transparency and accountability.

1. Introduction

The rapid development of information technology (IT) has profoundly transformed public sector management worldwide, including the domain of government accounting. The integration of IT into public financial management systems has been widely recognized as a means to enhance transparency, efficiency, and accuracy in financial reporting. In Indonesia, government initiatives have increasingly emphasized the adoption of technology to strengthen governance and improve the quality of public services. The Financial and Development Supervisory Agency (BPKP) reported that by 2023, approximately 75% of regional governments had begun adopting IT in their accounting management processes.

This widespread adoption demonstrates a strong national commitment to digital transformation in public financial administration. Despite this progress,

significant disparities remain between regions in terms of IT readiness and implementation success. Remote and underdeveloped areas often face unique challenges related to infrastructure availability, human resource capacity, and budget allocation. One such region is Paniai Regency, located in Central Papua Province. Geographically isolated and characterized by difficult terrain, Paniai faces substantial obstacles in building the necessary infrastructure to support digital governance. According to data from the Ministry of Communication and Information (2022), only about 30% of villages in Paniai Regency have adequate internet connectivity, resulting in restricted access to online systems and limited participation in technology-driven initiatives.

Infrastructure constraints are compounded by human resource limitations. The successful implementation of IT-based systems depends not only on the availability of physical infrastructure but also on the presence



of trained personnel capable of operating and maintaining such systems. In Paniai Regency, the limited number of civil servants with IT competence has hindered the effective utilization of government information systems. Furthermore, challenging geographical conditions often slow down program implementation and inter-agency coordination, leading to delays in financial data collection and reporting.

The consequences of these challenges are reflected in the financial reporting performance of regional work units (SKPDs).

Data from the Audit Board of Indonesia (BPK) Report (2023) indicates persistent delays in the submission of financial statements. Government Regulation No. 8 of 2006, Chapter IV, Article 8, Paragraph (3) requires that financial reports be submitted no later than two months after the end of the fiscal year. However, as the reporting deadline approaches, a significant number of SKPDs in Paniai Regency fail to meet this requirement.

The following table summarizes the status of financial report submissions by SKPDs as of February 2024:

Table 1. Realization of Financial Report Data from SKPDs

No	Name of SKPD	Submitted	In Process	Not Submitted	Yet Submitted
1	Education Authorities				✓
2	Public Health Office				✓
3	Regional Public Hospital	✓			
4	Department of Public Works and Spatial Planning				✓
56	Political and Community Protection Agency	✓			
Total		8	10		38
Percentage		14%	18%		68%

Source: Accounting Division of the Financial and Asset Management Agency of Paniai Regency (2024)

The data reveal that out of 56 SKPDs, only 14% had submitted their reports on time, while 68% had not yet submitted as of February 2024. Several key factors contribute to these delays, including (1) late implementation of programs and activities by SKPDs, (2) insufficient compliance with regulations and poor coordination between third parties and PPTK, (3) limited understanding of financial reporting procedures among SKPD personnel, and (4) inadequate human resources and infrastructure support.

Interestingly, despite these persistent challenges, Paniai Regency has consistently received an **Unqualified Opinion (WTP - Wajar Tanpa Pengecualian)**, which is the highest audit opinion awarded by the Supreme Audit Agency (BPK) for the past five years. While this reflects adherence to generally accepted accounting principles, it does not

necessarily indicate that financial management is free from operational inefficiencies or implementation gaps. Rather, it underscores the importance of examining how IT adoption can be further optimized to bridge the gap between compliance and actual performance.

Scholars have noted that the adoption of IT in public financial management can enable real-time monitoring, improve inter-agency coordination, and strengthen regulatory compliance (Susanto & Septiyanti, 2023). In regions with robust infrastructure, IT integration has led to substantial improvements in financial transparency and accountability. However, in remote areas, the potential benefits of IT adoption are often offset by contextual limitations. Rahman and Widodo (2023) argue that the digital transformation agenda in Eastern Indonesia is constrained by inadequate



infrastructure and a shortage of skilled personnel, resulting in suboptimal outcomes.

Furthermore, national policy frameworks have intensified the need for local governments to strengthen their financial management practices. Government Regulation No. 12 of 2019 on Regional Financial Management explicitly mandates the use of technology-based systems to improve planning, budgeting, implementation, and reporting processes. Data from the Association of Indonesian Regency Governments (APKASI, 2023) indicates that only 45% of local governments in Eastern Indonesia have been able to fully implement these regulations in a timely manner, highlighting the persistent implementation gap.

The case of Paniai Regency represents a critical example of this national challenge. The combination of limited infrastructure, low digital literacy, and budgetary constraints has resulted in delayed reporting and underutilization of available technological tools. These challenges underscore the importance of conducting empirical research to explore the specific barriers to IT adoption in accounting processes and to propose evidence-based recommendations for improvement.

Therefore, this study aims to assess the effectiveness of IT implementation in supporting the accounting functions of the Regional Financial and Asset Management Agency (BKAD) in Paniai Regency. Specifically, the research seeks to: (1) identify the key factors that facilitate or hinder the successful adoption of IT in regional financial management, (2) analyze the impact of IT adoption on the timeliness and quality of financial reporting, and (3) provide recommendations to enhance the transparency and accountability of financial management through optimized technology use.

By focusing on Paniai Regency as a case study, this research contributes to the broader literature on public sector digital transformation in developing regions. The findings are expected to offer practical insights for policymakers, particularly in designing

strategies that address infrastructure limitations, improve human resource capacity, and strengthen regulatory enforcement in remote areas. Ultimately, the study seeks to demonstrate how technology can serve as a catalyst for achieving good governance principles, including efficiency, transparency, and accountability in regional financial management.

2. Review of Literature

This chapter reviews relevant empirical studies and theoretical foundations that inform the research on the application of information technology (IT) to enhance accounting effectiveness in the Paniai Regency Government, Central Papua. The review is structured into five subsections: (1) empirical review, (2) theoretical framework, (3) concept of information technology, (4) functions of information technology in public sector accounting, (5) effectiveness of accounting information systems (AIS), and (6) the relationship between management theory and IT concepts. This structure ensures a clear logical flow, linking existing research to the present study and identifying the research gap.

2.1 Empirical Review

The application of IT in public sector accounting has been widely studied, with evidence showing its impact on efficiency, transparency, and decision-making quality. Empirical research in Indonesia and other developing countries generally indicates that adopting IT-based accounting systems leads to better financial reporting accuracy and improved internal control mechanisms (Wibowo & Susanto, 2023). However, implementation challenges remain, such as limited technical capacity, inadequate infrastructure, and resistance to change among employees (Mardiasmo, 2017).

Several studies have analyzed IT adoption in local government settings. For instance, Saputra et al. (2020) found that e-budgeting systems in provincial governments improved budget absorption rates and



minimized misallocation of funds. Similarly, Hidayat and Pratama (2021) reported that integrating IT into financial management systems enhanced data accuracy and reduced audit findings. Internationally, studies in

African and Asian developing economies have emphasized the need for contextualized IT implementation strategies due to infrastructure constraints and varying levels of staff readiness (Abdul-Rahman & Ayuba, 2019).

Summary of Previous Studies

Author/Year	Context	Method	Key Findings
Wibowo & Susanto (2023)	Indonesia, local government accounting	Case study	IT-based accounting systems improve accuracy and timeliness of financial reporting.
Saputra et al. (2020)	Provincial governments in Indonesia	Quantitative survey	E-budgeting increases budget absorption and reduces fund misuse.
Hidayat & Pratama (2021)	Municipal financial management	Mixed-method	IT integration reduces audit findings and enhances accountability.
Abdul-Rahman & Ayuba (2019)	African public sector	Empirical study	Success depends on staff training, infrastructure, and change management strategies.

This empirical evidence suggests that IT implementation can enhance accounting effectiveness if properly managed and supported by organizational readiness. However, it also highlights challenges relevant to Paniai Regency, such as limited technical expertise, potential budgetary constraints, and the need for strong top management support.

2.2 Theoretical Framework

This study is grounded in two major theories: **System Theory** and **Contingency Theory**.

System Theory

System Theory conceptualizes an organization as a set of interrelated subsystems that work together to achieve overall objectives (Badakhshian, 2020). In the context of accounting, the IT subsystem is critical to ensuring that financial data is accurately collected, processed, and reported. Successful IT adoption requires integration with other organizational subsystems — human resources, processes, and control mechanisms — to achieve optimal results.

Contingency Theory

Contingency Theory posits that there is no one-size-fits-all approach to organizational

effectiveness (Otley, 2018). Instead, performance depends on contextual variables such as organizational size, technology level, environmental uncertainty, and human resource capacity. Applying this theory, the study argues that IT adoption in Paniai Regency should be tailored to its specific context — including infrastructure limitations, staff digital literacy, and available budget. A flexible implementation strategy is therefore essential to ensure successful outcomes.

These theoretical lenses provide the conceptual basis for evaluating how IT adoption influences accounting effectiveness and which factors moderate this relationship.

2.3 Concept of Information Technology

Information Technology (IT) refers to the combination of hardware, software, networks, and associated human capabilities used to collect, store, process, and disseminate information (Laudon & Laudon, 2022). In the public sector, IT plays a strategic role in modernizing administrative processes, improving service delivery, and increasing transparency. In accounting, IT enables automation of key processes such as journal entries, ledger posting, budget reconciliation,



and report generation. IT also facilitates the integration of different financial modules — budgeting, procurement, payroll — into a unified platform, thereby improving data accuracy and reducing redundancy (Wibowo & Susanto, 2023).

2.4 Functions of Information Technology in Public Sector Accounting

IT serves multiple functions that are particularly relevant for government accounting operations:

1. **Data Management and Accessibility:** IT systems organize, store, and retrieve financial data efficiently, enabling timely access to historical and real-time information for internal and external stakeholders.
2. **Process Automation:** IT reduces manual workload through automated posting, reconciliation, and reporting, which minimizes human error and accelerates processing time.
3. **Decision-Making Support:** IT provides analytical tools and dashboards that allow decision-makers to evaluate financial performance, forecast revenue, and allocate resources effectively.
4. **Communication and Collaboration:** IT enables real-time coordination among different government units through collaborative platforms, improving synchronization in financial reporting.
5. **Transparency and Accountability:** IT-based systems facilitate audit trails, electronic documentation, and compliance monitoring, thereby strengthening public trust and reducing opportunities for fraud.

2.5 Effectiveness of Accounting Information Systems

An **Accounting Information System (AIS)** is defined as a structured framework for collecting, recording, storing, and processing financial data to produce useful information for decision-making (Romney & Steinbart, 2015). AIS effectiveness is commonly measured by

criteria such as accuracy, reliability, timeliness, and user satisfaction (Puspitawati, 2021).

Mardiasmo (2017) argues that the effectiveness of AIS is demonstrated when it contributes to achieving organizational goals, particularly in terms of financial transparency and accountability. Handoko (2003) further emphasizes that effective AIS reduces errors, improves control, and supports both strategic and operational decision-making.

2.6 Relationship Between Management Theory and IT Concepts

Management theories and IT concepts are deeply interconnected in organizational governance:

1. **Operational Efficiency and IT Integration:** Classical management theory highlights efficiency and task optimization. Enterprise Resource Planning (ERP) systems and e-budgeting platforms embody this principle by integrating multiple business functions into a unified platform, reducing duplication of work.
2. **Coordination and Communication:** Henri Fayol's administrative principles stress coordination as a key managerial function. IT enhances coordination by enabling real-time communication via tools such as Microsoft Teams or Slack.
3. **Bureaucratic Structure and Data Management:** Max Weber's bureaucratic theory emphasizes structured hierarchies and standard procedures. IT supports these structures by enabling digital record-keeping, workflow automation, and real-time monitoring, making bureaucratic processes more transparent and responsive.

Together, these perspectives suggest that IT is not merely a technical tool but a strategic enabler that can reshape management practices, improve accountability, and drive public sector reform.

2.7 Synthesis and Research Gap

From the empirical and theoretical review, it is clear that IT adoption positively



influences accounting effectiveness by enhancing efficiency, accuracy, and transparency. However, successful implementation depends on contextual factors, including organizational readiness, leadership commitment, and infrastructure support. In the case of Paniai Regency, limited empirical studies have been conducted to assess how these factors interact in a remote, resource-constrained environment. This research addresses this gap by examining IT adoption in the specific context of Paniai Regency and identifying enablers and barriers to achieving accounting effectiveness.

3. Method Study

3.1. Research Approach

This study employs a **descriptive qualitative approach**, which is particularly appropriate for exploring complex social phenomena such as the implementation of information technology in public sector accounting. A qualitative approach allows researchers to gain an in-depth understanding of how technology adoption influences accounting effectiveness within the specific context of the Regional Finance and Asset Agency (BKAD) of Paniai Regency.

Unlike a purely quantitative method that relies on numerical data and statistical tests, the descriptive qualitative approach focuses on rich, narrative data that captures the perceptions, attitudes, and lived experiences of the stakeholders involved. This approach is essential in identifying hidden barriers, organizational dynamics, and informal practices that may not be apparent through quantitative measurement alone.

The **sampling technique** used is **purposive sampling**, targeting participants with direct involvement in financial reporting, SIPD operations, and IT system maintenance. This ensures that the information collected is relevant and representative of the core processes under investigation. The inclusion criteria emphasize expertise and practical experience in financial management and

system implementation, which helps ensure data credibility and relevance.

Ethical considerations were prioritized throughout the research process. Participants were fully informed about the research objectives and the voluntary nature of their participation. Consent forms were provided and signed, and confidentiality of responses was guaranteed. This ethical protocol not only protects participants but also enhances trust and openness during data collection.

3.2 . Researcher's Role

The researcher acts as the **primary instrument** of the study, playing an active and engaged role in all research phases. In qualitative research, the researcher is not merely an observer but also a data collector, analyst, and interpreter. The responsibilities include:

1. **Research Design and Planning** – Developing a conceptual framework based on System Theory and Contingency Theory to guide data collection and analysis. Careful planning ensures that the research questions, objectives, and methodology are aligned.
2. **Data Collection** – Conducting interviews, observations, and document analysis systematically while building rapport with participants to encourage honest and detailed responses.
3. **Data Analysis** – Applying thematic coding, categorization, and interpretation of patterns in participants' responses to reveal insights into IT implementation effectiveness.
4. **Critical Reflection** – Maintaining reflexivity throughout the study by documenting assumptions, potential biases, and decisions made during the research process to ensure objectivity.
5. **Reporting** – Presenting findings in a structured, logical, and evidence-based manner that is useful for policymakers, managers, and researchers.



3.3. Research Location and Duration

The research was conducted at the **Regional Finance and Asset Agency (BKAD) of Paniai Regency**, located at Jalan Yos Sudarso No. 1, Paniai, Central Papua, Indonesia. The site was chosen because BKAD is the central institution responsible for regional financial management, including budgeting, expenditure reporting, and the use of SIPD. The study took place over **two months, from December 2024 to January 2025**, aligning with the fiscal year-end reporting period. This timing provided an opportunity to observe financial reporting activities in real time, ensuring that the collected data captured actual practices rather than retrospective accounts.

3.4 . Data Sources

1. Primary Data

Primary data were obtained through interviews with individuals directly responsible for financial processes and IT operations.

No	Informant	Number
1	Head of Division	1
2	Financial Staff	3
3	IT Staff	2

Source: BKAD Paniai Regency, Processed Data (2025)

The diversity of informants allows multiple perspectives to be considered, improving the completeness of the data set.

2. Secondary Data

Secondary data include official government regulations, internal memos, financial reports, IT implementation manuals, system usage logs, and journal articles that discuss best practices in public financial management. These documents provide additional context and help verify the accuracy of primary data.

3.5. Data Collection Techniques

Data collection followed three complementary techniques:

1. **Observation** – Direct observation of financial staff during data entry, verification,

and reporting using SIPD. Field notes were taken to capture workflow patterns, bottlenecks, and interactions between IT and accounting staff (Sugiyono, 2018).

2. **In-depth Interviews** – Semi-structured interviews were conducted using a flexible guide, allowing for probing questions to clarify participant experiences. Interviews lasted between 30–60 minutes and were audio-recorded with consent (Sugiyono, 2018).

3. **Documentation Review** – Collection and analysis of relevant documents, such as financial statements, system-generated reports, and IT maintenance records. These documents support triangulation and provide objective evidence of accounting performance.

3.6. Data Analysis Techniques

The data analysis process followed **Miles and Huberman’s (2014) Interactive Model**, which involves four iterative steps:

1. **Data Reduction** – Sorting, coding, and categorizing data to focus on relevant information about IT usage and accounting effectiveness.
2. **Data Display** – Organizing findings into tables, matrices, and flowcharts to highlight key patterns and relationships between variables.
3. **Conclusion Drawing and Verification** – Identifying recurring themes and confirming their validity through repeated review and member checking.
4. **Triangulation** – Using data from multiple sources and methods to strengthen the validity and reliability of findings.
5. Thematic coding was facilitated using NVivo software, ensuring that the analysis was transparent, systematic, and replicable.

3.7. Validity and Reliability

To ensure **trustworthiness**, the study applies Lincoln and Guba’s (1985) four criteria:



1. **Credibility** – Achieved through source, technique, and time triangulation to confirm consistency of findings.
2. **Transferability** – Providing thick descriptions of the research setting and participants to allow application of results to similar contexts.
3. **Dependability** – Maintaining detailed records of research procedures to allow for external auditing.
4. **Confirmability** – Using an audit trail and reflexive journaling to ensure findings are shaped by data rather than researcher bias.

3.8. Ethical Considerations

Research permission was formally obtained from the Paniai Regency Government Office. All participants were assured that the data would be used solely for academic purposes, and anonymity was guaranteed to protect personal and institutional confidentiality.

4. Research Results and Discussion

4.1 Research result

4.1 Application of Information Technology in Accounting Systems

The implementation of information technology (IT) in regional financial management is a strategic necessity for local governments, including the Paniai Regency Regional Finance and Asset Agency (BKAD). Digitalization is not merely a trend; it significantly enhances efficiency, accuracy, and transparency in budget management.

According to Mariana et al. (2024), digital transformation in regional financial systems increases transparency and accountability, which are fundamental principles of agile governance. Budiman et al. (2024) emphasize that IT adoption in accounting processes enables faster, more accurate, and more transparent financial reporting. Furthermore, Mutia Kardina et al. (2024) note that IT reduces manual errors and supports timely decision-making based on validated financial data.

In line with these findings, BKAD Paniai has implemented digital-based systems to

replace manual financial recording. Every transaction is now recorded in real-time, minimizing human error and accelerating report preparation according to Government Accounting Standards (SAP). This technology not only improves operational efficiency but also strengthens public accountability in financial governance.

4.2 Documentation of IT Systems: SIMDA and SIPD

BKAD Paniai has historically relied on the Regional Management Information System (SIMDA). Developed by the Financial and Development Supervisory Agency (BPKP), SIMDA automates financial recording, ensures compliance with government regulations, and facilitates internal monitoring.

Strengths of SIMDA include:

1. Automation of financial processes, reducing manual workload.
2. Compliance with accounting standards and government regulations.
3. Easier monitoring of budget use across work units.

Limitations of SIMDA:

1. Lack of national integration, causing delays in synchronizing data with the central government.
2. Dependence on local installations, increasing the risk of data loss.
3. Limited remote access and insufficient real-time reporting.
4. Underutilization for public transparency, not fully aligned with Open Government principles.

To overcome these limitations, the government recommends transitioning to the **Regional Government Information System (SIPD)**, which provides online-based, integrated, and real-time financial management. However, the transition in Paniai faces challenges such as unstable internet networks, limited IT infrastructure, and insufficient human resources.



4.3 Financial Reporting Before and After Digitalization

The impact of digitalization on financial reporting is substantial. Prior to digitalization, financial transactions were recorded manually,

causing delays, discrepancies, and high error rates. After implementing SIMDA and partially adopting SIPD, recording is faster, more accurate, and more transparent.

Table 4.1 Comparison of Efficiency and Accuracy Before & After Digitalization

Aspect	Before Digitalization	After Digitalization (SIMDA/SIPD)
Speed of Recording	Slow, manual, verification needed	Fast, automatic, verifiable instantly
Error Rate	High (human errors)	Low (automatic validation)
Data Security	Prone to loss/damage	System storage with backups
Transparency	Limited, physical access only	High, real-time monitoring
Reporting	Long, repeated summarization	Fast, exportable directly
Inter-Unit Synchronization	Difficult	Integrated and accurate
Regulatory Compliance	Manual verification required	Compliant with SAP

The table shows a significant reduction in reporting time and errors, highlighting improved efficiency, accuracy, and regulatory compliance.

4.4 Manual Error Rates Before and After IT Adoption

Field data indicate that before IT implementation, data input errors occurred in **20-30%** of transactions due to manual recording. Discrepancies, duplication, and budget miscalculations were common, with long correction processes.

After digitalization:

1. Errors decreased to **5-10%**, thanks to automatic validation.
2. Duplication of records was eliminated, and budget calculations became more precise.
3. Corrections are faster, as the system identifies errors instantly.

These results confirm that IT adoption effectively reduces errors, increases accuracy, and enhances the reliability of financial reporting.

4.5 Time Required to Prepare Financial Reports

Before digitalization: Annual reports took 2-3 months; monthly reports required 1-

2 weeks due to manual data collection and reconciliation.

After digitalization (SIMDA/SIPD):

1. Annual reports are completed in 2-4 weeks.
2. Monthly reports are prepared within 2-5 days.
3. Reconciliation between units is automatic, improving consistency.

Despite technical constraints such as unstable internet and electricity, digitalization drastically reduces report preparation time, improving overall efficiency in financial management.

4.6 Technical Challenges

Interviews and field observations identified several challenges:

1. **Unstable Internet:** SIPD requires a reliable connection, but many areas experience disruptions. Temporary manual recording remains necessary.
2. **Frequent Power Outages:** Interruptions affect system access, requiring backup solutions.
3. **Limited IT-Skilled Human Resources:** Ongoing training is needed to ensure staff can operate SIMDA/SIPD optimally.



1. **Transition from SIMDA to SIPD:** Adoption is gradual due to infrastructure and HR limitations.
2. **Data Security and System Maintenance:** Proper backups and professional IT staff are crucial for safeguarding financial data and ensuring transparency.

4.7 Insights from Informant Interviews

Interviews with BKAD personnel reveal strong agreement on the positive impact of digitalization:

1. **Head of BKAD:** "SIPD accelerates transactions, reduces human error, and integrates data with the central government. This increases efficiency in preparing financial reports."
2. **Head of Accounting:** "Technology improves transparency; all transactions are recorded automatically and auditable in real-time. Internet and HR limitations remain a challenge."
3. **Financial Staff:** "IT reduces manpower and time, improves accuracy, and ensures transparency in all financial transactions."
4. **IT Staff:** "Current systems are sufficient but face challenges with internet, electricity, and limited IT personnel. Professional IT support is essential for maintaining data security."

The interviews support the quantitative findings and provide practical insight into implementation challenges, emphasizing the need for improved infrastructure, ongoing training, and technical support.

4.8 Summary

Overall, the adoption of SIMDA and the transition to SIPD have improved efficiency, accuracy, and transparency in regional financial management at BKAD Paniai. While technical constraints such as unstable networks, power outages, and limited HR persist, the digitalization process is a strategic step toward more accountable and professional governance. Continuous improvements in infrastructure, training, and system

maintenance are essential to fully realize the benefits of IT in regional financial management.

4.2 Discussion

4.2.1 Application of Information Technology in Accounting Systems in the Paniai Regency Regional Government

The application of information technology (IT) in local government accounting systems is a crucial factor in supporting transparency, efficiency, and accountability in public financial management. The Paniai Regency Government, through the Regional Finance and Asset Agency (BKAD), has implemented a digital system to enhance the accuracy of financial recording and reporting. However, its implementation still faces several challenges, including suboptimal technological infrastructure, limited human resources (HR) for system management, and external factors such as unstable internet networks and electricity supply.

According to Romney and Steinbart (2022), successful IT implementation in public accounting requires three main elements: **data security, system integration, and user competence**. Without these, the system risks inconsistencies, low reliability of financial information, and underutilization of available features. Winarno and Hakim (2023) also emphasize the importance of **change management policies** to enable civil servants to adapt effectively to digital transformation. To optimize the IT-based accounting system in Paniai Regency, a comprehensive strategy is needed, including continuous employee training, improved technological infrastructure, and stronger regulatory policies. IT, therefore, functions not only as an administrative tool but also as a foundation for transparent and accountable financial governance.

Previously, Paniai Regency used the offline-based **Regional Management Information System (SIMDA)**. While easier to operate without internet dependency, SIMDA limited integration and efficiency. To comply with central government policies, Paniai



Regency has gradually transitioned to the online, integrated **Regional Government Information System (SIPD)**. SIPD enables faster, more accurate financial transaction recording, with real-time monitoring by central authorities.

Interviews with the Head of BKAD revealed that SIPD aims to enhance efficiency and minimize human errors. However, network infrastructure constraints and limited HR skills have led some work units to continue using SIMDA or manual recording methods (Putri & Santoso, 2023; Rahmawati et al., 2023).

IT implementation has positively impacted efficiency, accuracy, and transparency. Financial staff confirm that digital systems reduce manpower and processing time, while minimizing errors (Yulianto et al., 2021; Sari & Kurniawati, 2022). Nonetheless, technical issues, including network disruptions and power outages, remain challenges. Data security is another concern, as the system lacks an optimally integrated backup mechanism, posing risks of data loss (Rahmawati et al., 2023).

Overall, the success of IT in Paniai's accounting system depends on **infrastructure**

readiness, HR competence, and policy support. The government must invest in technology and workforce development to ensure effective, sustainable digital accounting systems.

4.2.2 Documentation and Use of SIPD

Data from BKAD indicate that SIPD is **still in partial implementation** across work units. The system aims to improve efficiency, transparency, and accountability; however, obstacles persist.

Key challenges include:

1. **Technological Infrastructure:** Limited internet access in remote areas delays real-time reporting. Network instability and insufficient telecommunications infrastructure reduce system reliability.
2. **Human Resources:** Many employees are unfamiliar with SIPD, relying on manual recording or SIMDA. Limited IT experts hinder system operation.
3. **Policy Alignment:** Internal procedures still need adjustments to comply with SIPD mechanisms.

Table 4.2 presents the types of training conducted to support SIPD adoption:

No	Training Name
1	Training on SIPD Use
2	SIMDA Training
3	Accrual-Based Government Accounting Training
4	Regional Asset Management Training with SIPD
5	Security and Data Management Training in SIPD
6	Digital-Based Financial Analysis and Reporting Training
7	Regional Financial Audit and Supervision Training with IT
8	SIPD Integration Training with Other Systems

Despite training, employees still require assistance to navigate complex features, indicating that **capacity building is ongoing.**

4.2.3 Synchronization between BKAD and OPDs

Synchronization of financial reporting between BKAD and **Regional Apparatus Organizations (OPDs)** is essential for

transparency and accountability. Key aspects include:

1. **Financial Data Integration:** SIPD serves as the main platform for consolidating reports from all OPDs.
2. **Coordination and Validation:** OPDs periodically submit reports to BKAD, which verifies compliance before forwarding to higher authorities.



3. **Standardization:** BKAD applies uniform reporting formats, following Ministry of Home Affairs Regulation No. 77 of 2020.
4. **Budget Alignment:** BKAD and OPDs collaborate through Musrenbang and DPRD discussions to ensure consistency between budget planning and realization.

Challenges include irregular submission of OPD reports, data discrepancies, infrastructure

limitations, and insufficient technical expertise. Corrective measures include **strengthened coordination, HR training, and infrastructure optimization.**

4.2.4 Budget Realization Reporting: SIPD vs Manual Method

Table 4.3 Comparison of Budget Realization Reporting: SIPD vs Manual Method

Aspect	SIPD (Digital)	Manual Method (Conventional)
Time Efficiency	Faster due to automation	Slower, manual processing
Data Accuracy	Higher, system validates inputs	Prone to errors
Transparency & Accountability	Real-time access for auditors and OPDs	Less transparent, requires verification
Ease of Access	Accessible online from various locations	Limited to physical or local computer access
Data Security	Centralized storage with backup	Vulnerable to loss or damage
Reporting & Monitoring	Automatic generation in required format	Manual recapitulation required
Compliance	Aligns with regulations (Permendagri No. 70/2019)	Risk of non-compliance
Challenges	Dependent on internet, infrastructure, and HR	Labor-intensive, physical data risk

SIPD increases efficiency, accuracy, and transparency. However, constraints remain in **infrastructure, HR, and data synchronization** (Rahmawati et al., 2023; Winarno & Hakim, 2020). Strengthening digital infrastructure, HR training, and budget support are essential for full adoption.

4.2.5 Compliance with Government Accounting Standards (SAP)

SIPD has improved compliance with SAP by **integrating digital recording, reducing errors, and enabling real-time reporting.** Transparency and accountability have increased as financial data are more accessible to auditors and stakeholders.

Remaining challenges include:

1. OPDs in remote areas struggling with limited internet access.
2. Uneven HR competency in applying SAP-compliant procedures.

3. Technical disruptions causing reporting delays.

Research confirms that **digital systems improve SAP compliance**, but infrastructure readiness and HR capacity are critical (Yulianto et al., 2021; Sari & Kurniawati, 2022).

4.2.6 Technological Infrastructure Limitations

Key challenges for SIPD implementation:

1. **Internet Network Limitations:** Remote areas experience unstable connections, delaying data entry and reporting.
2. **Frequent Power Outages:** Lack of backup power (UPS/generators) interrupts system operations, increasing the risk of data loss.
3. **Device Limitations:** Some computers are outdated or incompatible with SIPD, slowing system performance.



4. **Lack of IT Experts:** Limited personnel expertise causes errors and delays; ongoing training is needed.

Investments in **infrastructure, hardware, backup systems, and HR capacity** are essential for sustainable SIPD implementation. This version is **concise, uses formal academic English, follows logical structure**, and integrates tables and references clearly.

5. Closing

5.1 Conclusion

Based on the results of the analysis and discussion, the following conclusions can be drawn:

1. **Implementation of Information Technology in the Accounting System in the Paniai Regency Government**

The implementation of information technology in the accounting system of the Paniai Regency Government has improved the efficiency and accuracy of financial recording. However, technical obstacles such as limited internet access, inadequate devices, and a shortage of IT experts continue to hinder the optimal operation of the system, causing delays and inefficiencies in financial input and reporting processes.

2. **Impact of Information Technology on Transparency and Accountability in Regional Financial Management**

The implementation of information technology through the Regional Government Information System (SIPD) has the potential to enhance transparency and accountability in financial management by enabling more systematic record-keeping and easier access for relevant stakeholders. Nevertheless, challenges such as infrastructure limitations, insufficient HR competency in using the system, and inconsistencies in policy implementation still limit the system's effectiveness in promoting transparent and accountable financial governance.

5.2 Suggestions

1. **Enhancing Technology Infrastructure and HR Capacity**

The Paniai Regency Government should strengthen supporting infrastructure, such as improving internet connectivity and providing backup power resources, to ensure the stable operation of technology-based systems. Hardware and software must be updated to meet the technical specifications required to run SIPD optimally. In addition, periodic training for employees in OPDs should be enhanced to ensure sufficient competence in operating the digital accounting system effectively.

2. **Strengthening Policy and Monitoring**

To maximize transparency and accountability in regional financial management, clear and enforceable policies must ensure that all OPDs fully utilize SIPD, minimizing manual recording practices that pose risks to transparency. Regular monitoring and evaluation of SIPD implementation are necessary to identify constraints and provide timely solutions. Collaboration with relevant institutions, such as the Ministry of Finance and the Audit Board (BPK), is also essential to ensure that SIPD implementation aligns with regulations and operates optimally in support of transparent and accountable financial governance.

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