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Digital Procurement as Governance Transformation: Evidence from School Financial Management in Indonesian Public Schools

Sahidin[1], Titi Fatmawati[2], Nasir[3]
Educational Administration, Universitas Muhammadiyah Kendari, Indonesia[1,2,3]
Email: myfmaintenance@gmail.com[1], fatmawati@umkendari.ac.id[2] , nasir@umkendari.ac.id[3]

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ABSTRACT: This study examines how e-procurement implementation through the School Information Procurement System (SIPLah) reshapes financial governance practices in public junior high schools in Indonesia. Although digital procurement policies are designed to improve efficiency, transparency, and accountability, limited research has explored how these systems operate within school-level governance contexts. This study aims to analyze the implementation process, identify institutional determinants influencing outcomes, and examine its implications for financial accountability. Using an interpretivist qualitative approach, the research adopted an instrumental case study design involving semi-structured interviews with school principals and treasurers, supported by document analysis. Data were analyzed using reflexive thematic analysis through open, axial, and selective coding stages. The results show that e-procurement functions not only as a technical tool but as a governance mechanism that restructures administrative workflows, redistributes organizational roles, and strengthens accountability through digital traceability. However, implementation also produces a digital dependency paradox, where efficiency gains coexist with increased administrative workload and technological vulnerability. Overall, the study demonstrates that digital procurement represents a socio-technical transformation that reshapes school financial governance practices.

Keywords: accountability, digital governance, e-procurement, school financial management, socio-technical transformation

ABSTRAK: *Penelitian ini mengkaji bagaimana implementasi* e-procurement *melalui Sistem Informasi Pengadaan di Sekolah (SIPLah) membentuk kembali praktik tata kelola keuangan pada sekolah menengah pertama negeri di Indonesia. Meskipun kebijakan pengadaan digital dirancang untuk meningkatkan efisiensi, transparansi, dan akuntabilitas, penelitian yang mengkaji bagaimana sistem tersebut beroperasi dalam konteks tata kelola di tingkat sekolah masih terbatas. Penelitian ini bertujuan untuk menganalisis proses implementasi, mengidentifikasi faktor-faktor kelembagaan yang memengaruhi hasil implementasi, serta mengkaji implikasinya terhadap akuntabilitas pengelolaan keuangan. Penelitian menggunakan pendekatan kualitatif berparadigma interpretivis dengan desain studi kasus instrumental. Data dikumpulkan melalui wawancara semi-terstruktur dengan kepala sekolah dan bendahara sekolah, serta didukung oleh analisis dokumen. Data dianalisis menggunakan analisis tematik refleksif melalui tahapan* open coding, axial coding,

dan selective coding*. Hasil penelitian menunjukkan bahwa* e-procurement *tidak hanya berfungsi sebagai alat teknis, tetapi juga sebagai mekanisme tata kelola yang merestrukturisasi alur kerja administratif, mendistribusikan kembali peran-peran organisasi, serta memperkuat akuntabilitas melalui ketertelusuran (*digital traceability*) berbasis digital. Namun demikian, implementasi sistem ini juga memunculkan paradoks ketergantungan digital, di mana peningkatan efisiensi berjalan beriringan dengan bertambahnya beban administratif dan meningkatnya kerentanan terhadap aspek teknologi. Secara keseluruhan, penelitian ini menunjukkan bahwa pengadaan digital merupakan suatu transformasi sosio-teknis yang membentuk kembali praktik tata kelola keuangan sekolah.*

Kata Kunci: *akuntabilitas, tata kelola digital,* e-procurement*, manajemen keuangan sekolah, transformasi sosio-teknis.*

INTRODUCTION

The rapid advancement of digital technology has transformed governance practices across public sectors, including education, where digitalization increasingly reshapes administrative and financial management systems (Rahmadany, 2024; Fatmawati et al., 2025). In this context, e-procurement has emerged as a strategic instrument to enhance efficiency, transparency, and accountability in public procurement (Thai, 2017; Chan & Owusu, 2022; Susanto et al., 2024).

Recent studies have examined the implementation of digital procurement systems in educational settings, particularly the School Information Procurement System (SIPLah) in Indonesia. Evidence shows that SIPLah improves transaction traceability, strengthens financial accountability, and supports non-cash financial management (Susanto et al., 2024). Moreover, digitalization of school financial systems is linked to broader digital governance transformations, where platform-based infrastructures reshape administrative coordination and decision-making (Macgilchrist et al., 2025; Muchran et al., 2025). However, existing studies primarily focus on system adoption and technical performance, with limited attention to how digital procurement reshapes governance practices and organizational dynamics at the school level.

Previous research also highlights that e-procurement enhances cost efficiency, process standardization, and governance performance (Gardenal, 2013; Shakya, 2015), while enabling auditability through real-time transaction records (Alves, 2024). Nevertheless, implementation outcomes are strongly influenced by organizational readiness, including infrastructure, human resource capacity, and institutional coordination (Basri et al., 2011; Naseebullah et al., 2012). Challenges such as limited digital literacy, unstable internet connectivity, and system integration issues remain significant barriers, particularly in developing contexts (Somasundaram, 2008; Mohungoo et al., 2020; Naeem, 2021).

Despite the growing literature, most studies focus on macro-level public institutions, with limited attention to schools as micro-level governance units where procurement intersects with administrative capacity and accountability.

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Corresponding author: Sahidin (myfmaintenance@gmail.com)

Schools operate within constrained resources and diverse digital capabilities, making the implementation of e-procurement highly context-dependent (Padhi & Mohapatra, 2010; Sheng, 2006). In Indonesia, although SIPLah aims to strengthen transparency and accountability, implementation challenges persist, including infrastructure limitations, coordination issues, and technical capacity gaps (Sari et al., 2024; Mawengkang, 2020; Susanto et al., 2024).

From a theoretical perspective, e-procurement implementation can be understood through the intersection of policy implementation and digital governance frameworks, which emphasize the role of organizational capacity, institutional context, and technological systems in shaping policy outcomes (Kasemsap, 2017; Sikombe, 2023). However, limited research integrates these perspectives to explain how digital procurement reshapes financial governance at the school level.

This study addresses this gap by examining the implementation of e-procurement in public junior high schools in Kendari City, Indonesia. It aims to analyze implementation practices, identify institutional determinants, and examine implications for financial accountability and administrative efficiency. The existing conditions remain insufficiently documented in the literature. Empirical evidence at the local level is still limited, particularly regarding how schools operationalize SIPLah within their specific institutional contexts.

Preliminary observations indicate that schools encounter various practical challenges, including unstable internet connectivity, limited availability of digital devices, constraints in human resource capacity, and difficulties in adapting to system-based procurement procedures. In addition, coordination issues between school administrators and external stakeholders, as well as frequent system disruptions, often affect the efficiency and continuity of procurement processes. These challenges highlight the need for a more context-specific investigation to understand how e-procurement is implemented and experienced at the school level in Kendari City.

This study contributes in three ways. First, it extends digital governance research by positioning schools as micro-level governance units. Second, it provides empirical insights into how infrastructure, human resource capacity, and organizational readiness shape implementation outcomes (Basri et al., 2011; Nchabeleng & Ncube, 2025). Third, it advances understanding of e-procurement as a governance mechanism that reconfigures accountability practices within educational institutions.

METHOD

Research Design

This study employed a qualitative approach using an instrumental case study design to examine the implementation of e-procurement in school financial management. The study focused on understanding how digital procurement operates within real institutional contexts in public junior high schools in Kendari City, Indonesia.

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Research Context and Case Selection

The study was conducted in five public junior high schools in Kendari City that had implemented the School Information Procurement System (SIPLah). Schools were selected purposively based on: (1) implementation of e-procurement, (2) willingness to participate, and (3) variation in digital infrastructure and administrative capacity. This selection enabled the capture of diverse implementation experiences.

Participants and Data Collection

The study involved ten participants, consisting of five school principals and five school treasurers. Participants were selected based on their direct involvement in school financial management and e-procurement implementation. Data were collected through semi-structured interviews and document analysis. Interviews were conducted on-site, lasted approximately 90 minutes, and were audio-recorded and transcribed verbatim. Document analysis included financial reports, procurement records, and regulatory guidelines to support and validate interview data. Data collection continued until thematic saturation was reached, indicated by the absence of new themes and consistent patterns across participants.

Data Analysis

Data were analyzed using reflexive thematic analysis. The analysis involved coding and categorization to identify patterns related to e-procurement implementation and its governance implications. Themes were developed iteratively through constant comparison across interview and document data.

Figure 1. Data Reduction Stage

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Corresponding author: Sahidin (myfmaintenance@gmail.com)

The results of the data reduction process revealed several key findings, including the implementation of e-procurement through E-procurement as a digitized procurement workflow, improved administrative order and efficiency in financial reporting, strengthened transparency and accountability through electronic transaction evidence, and implementation barriers consisting of technical constraints, limited human resource capacity, and increased administrative workload. In addition, the analysis highlighted the role of regulatory and policy reinforcement in supporting the adoption of digital procurement systems in schools. This stage produced more structured and focused data, facilitating the coding process and the development of research themes in subsequent analysis stages.

Data were analyzed using reflexive thematic analysis (Figure 2) following an iterative and systematic process. Analysis began with data familiarization through repeated reading of interview transcripts and supporting documents to gain an overall understanding of emerging patterns.

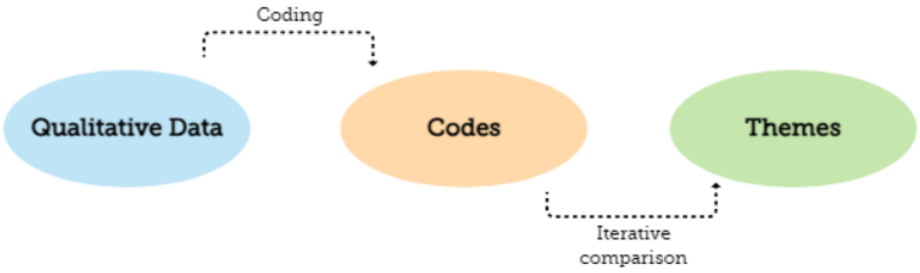

Figure 2. Thematic Analysis (Salomão, 2023).

Open coding (Figure 3), where meaningful units of data were identified and labeled to capture key phenomena related to e-procurement implementation.

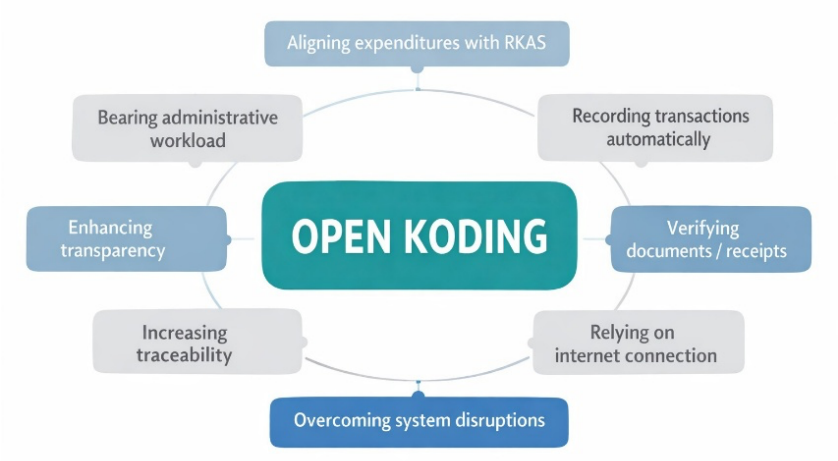

Figure 3. Open Coding

Axial coding (Table 1), which involved grouping related codes into broader analytical categories by identifying relationships such as cause–effect dynamics, conditions–consequences, and strategies–outcomes.

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Corresponding author: Sahidin (myfmaintenance@gmail.com)

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Table 1. Axial coding

Analytical Category	Codes Included	Analytical Relationships	Category Meaning
Digital Infrastructure Readiness	Technological infrastructure and system reliability constraints	Condition → Consequence: Unstable digital infrastructure causes delays in procurement and reporting processes. Cause → Effect: Server and network disruptions hinder e-procurement transactions.	Infrastructure readiness serves as a primary prerequisite for successful e-procurement implementation in schools.
Human Resource Capacity and Digital Literacy	Gaps in training, digital literacy, and skill adaptation	Condition → Consequence: Low HR capacity leads to system misuse and increased workload. Strategy → Outcome: Training and assistance improve operational capability in using digital systems.	Human resource competence acts as a mediator between digitalization policies and implementation practices.
Digitalization of Financial Transaction Processes	Digitally integrated and compliant financial management	Strategy → Outcome: Digital transactions produce automatic recording and administrative efficiency. Cause → Effect: Integration of digital systems improves financial management orderliness.	Digitalization transforms financial management from manual processes into system- and data-based practices.
Financial Supervision and Accountability	System-based verification and traceable audit processes	Strategy → Outcome: Digital verification enhances transparency and accountability. Condition → Consequence: Electronic evidence facilitates auditing and monitoring processes.	e-procurement functions as a control mechanism that strengthens financial accountability in school fund management.
Organizational Impact and Administrative Workload	Increased administrative workload and procedural complexity	Cause → Effect: Higher accountability standards increase administrative workload. Strategy → Outcome: Procedure standardization leads to more orderly yet more complex management processes.	Digitalization not only increases efficiency but also creates new work demands for financial administrators.

Selective coding (Table 2), where categories were integrated to construct overarching themes explaining the implementation process and its governance implications.

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Table 2. Selective coding

Effectiveness of E-procurement Implementation	Determinants of School Readiness	Structural and Technical Barriers	Implications for Financial Accountability
This theme describes how procurement digitalization through e-procurement improves transaction efficiency, enables automatic recording, and enhances administrative order in school financial management.	This theme emphasizes that implementation success is influenced by digital infrastructure readiness, human resource capacity, and organizational support in providing facilities and training.	This theme includes challenges such as unstable internet connectivity, system disruptions, limited devices, and human resource adaptation issues that affect the smooth implementation of digital systems.	This theme demonstrates that the use of e-procurement and non-cash transactions improves transaction traceability, facilitates auditing processes, and strengthens transparency and accountability in school fund management.

Throughout the analysis, coding decisions were continuously compared across data sources to ensure analytical consistency. Theme development followed an iterative logic, allowing empirical findings to interact with theoretical concepts from policy implementation and digital governance perspectives. This approach enabled the emergence of explanatory themes rather than merely descriptive categories.

Data display techniques such as thematic matrices and conceptual mapping were used to visualize relationships among themes and to support interpretive analysis. The final stage involved synthesizing themes into a conceptual understanding of how e-procurement reshapes financial accountability practices within school governance.

Trustworthiness and Research Rigor

Research rigor was ensured through data triangulation, member checking, and maintaining an audit trail to enhance the credibility of the findings. Ethical considerations included obtaining informed consent from all participants, ensuring confidentiality, and anonymizing all data. Participation was voluntary, and the authors declare no conflict of interest.

RESULT AND DISCUSSION

The analysis reveals that the implementation of e-procurement through the School Information Procurement System (e-procurement) represents not merely a technical shift in procurement procedures but a broader transformation of financial governance practices within schools. Through thematic analysis, four

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interrelated themes emerged: (1) digital restructuring of procurement workflows, (2) institutional readiness as a determinant of implementation outcomes, (3) digital dependency and emerging organizational burdens, and (4) reconfiguration of financial accountability through traceability mechanisms.

Digital Restructuring of Procurement Workflows

The findings indicate that e-procurement restructures procurement workflows by integrating planning, purchasing, and reporting into standardized digital processes. This transformation reduces manual errors, improves data traceability, and enhances administrative consistency. One participant explained: "All transactions are now non-cash and automatically recorded, so reporting becomes more organized and easier to manage."

Institutional Readiness as a Determinant of Implementation Outcomes

The effectiveness of e-procurement implementation was strongly influenced by variations in institutional readiness, particularly digital infrastructure availability and human resource capacity. Schools with stable internet access, adequate devices, and experienced operators reported smoother implementation processes compared to schools with limited technological readiness. As noted by one informant: "If the internet connection is unstable, the procurement process stops because the system cannot be accessed."

Beyond technical infrastructure, digital competence among school personnel emerged as a critical factor. Participants highlighted that operators and treasurers often required extended adaptation periods, especially during transitions between personnel. Participants reported that successful implementation depends on both technological availability and user capability.

The findings reveal that institutional readiness operates as a mediating condition between policy design and implementation practice. Digital systems alone do not guarantee efficiency; rather, successful implementation emerges when technological infrastructure, user capability, and organizational support interact cohesively.

Digital Dependency and Emerging Organizational Burdens

Although e-procurement improved procedural order, the findings also reveal an unintended consequence: increased organizational dependency on digital systems. Participants reported recurring challenges such as server disruptions, unstable internet networks, and system errors that directly affected procurement timelines. One participant stated: "*Sometimes the system crashes or the central server goes down, so transactions have to be postponed."*

In addition to technical disruptions, participants emphasized that digitalization introduced new administrative demands. The requirement for detailed documentation, verification procedures, and system synchronization increased workload for financial administrators. Rather than reducing work intensity, digitalization shifted labor from manual transactions toward administrative compliance and digital documentation.

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These findings suggest the presence of a digital dependency paradox: while digital systems enhance efficiency and control, they simultaneously create operational vulnerabilities and additional administrative responsibilities. This indicates that digital transformation is not inherently simplifying but instead reconfigures the nature of organizational work.

Reconfiguration of Financial Accountability through Digital Traceability

A central finding of this study is the emergence of digital traceability as a new mechanism of financial accountability. Participants consistently emphasized that electronic transaction records improved transparency and facilitated monitoring processes by school leaders and external auditors. As expressed by an informant: "*Every transaction has clear evidence in the system, so audits become easier because everything can be traced.*"

Digital records function as objective evidence linking planning, procurement, payment, and reporting activities. This integration strengthens accountability practices by reducing ambiguity in financial documentation and enabling verification processes based on data rather than solely on manual reports.

The findings demonstrate that accountability is no longer solely enforced through hierarchical supervision but increasingly embedded within technological systems. E-procurement acts as a governance mechanism that institutionalizes accountability through automated documentation and traceability features.

Interrelationship Between Themes

Across themes, the findings reveal that e-procurement implementation is shaped by dynamic interactions between technological systems and organizational conditions. Digital restructuring improves procedural efficiency, but its effectiveness depends on institutional readiness. At the same time, increased reliance on digital systems introduces new forms of organizational vulnerability and administrative workload. Ultimately, these processes collectively contribute to a reconfiguration of financial accountability practices within schools.

The results indicate that digital procurement implementation should be understood as a socio-technical transformation rather than a purely technological intervention. The interaction between infrastructure, human capacity, and governance mechanisms determines how digital policies are translated into everyday administrative practices.

Discussion

Digitalization as Governance Restructuring Rather Than Technical Adoption

Rather than reiterating the empirical shift from manual to digital procurement observed in the findings, this study interprets such transformation as a form of institutional restructuring driven by digital governance mechanisms. From a digital governance perspective, technological systems function not only as operational tools but as institutional infrastructures that embed rules, standardize practices, and limit discretionary actions (Kasemsap, 2017).

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This suggests that e-procurement does not merely improve efficiency but fundamentally alters the locus of control, shifting governance from actor-based discretion to system-based regulation. This interpretation extends prior studies that primarily conceptualize digital platforms as administrative support tools, by demonstrating their role as governance-structuring mechanisms at the micro-institutional level.

Institutional Readiness as a Dynamic Mediating Mechanism

Consistent with organizational e-readiness research, the findings confirm that infrastructure availability and digital competencies significantly shape implementation outcomes (Basri et al., 2011; Naseebullah et al., 2012). However, the present study moves beyond viewing readiness as a static prerequisite. Instead, institutional readiness emerges as a dynamic mediating mechanism shaped by continuous organizational adaptation, learning, and leadership support.

Schools with stronger technological capacity were able to integrate digital procurement into broader financial management practices, whereas institutions with limited infrastructure experienced interruptions and inefficiencies. This observation supports studies emphasizing the importance of digital literacy and institutional support in sustaining digital transformation processes (Al-Afeef & Alsmadi, 2025; Eltanskaya et al., 2024). From a policy implementation perspective, the findings suggest that readiness is not simply a technical condition but a socio-organizational process involving human agency and institutional learning.

The Digital Dependency Paradox: Efficiency Versus Organizational Burden

A critical insight emerging from this study is the existence of a digital dependency paradox. While e-procurement systems increase efficiency and standardization, they simultaneously generate new vulnerabilities and administrative burdens. Technical disruptions, such as unstable internet connections and server failures, directly affect procurement continuity, illustrating how dependence on digital infrastructure introduces operational risks.

The emergence of the digital dependency paradox highlights the non-linear nature of digital transformation, where efficiency gains are accompanied by new forms of organizational vulnerability. This finding challenges dominant assumptions in digital governance literature that associate digitalization with simplification and efficiency. Instead, it suggests that digital systems introduce new layers of complexity, particularly through increased reliance on technological infrastructures and procedural compliance requirements (Mohungoo et al., 2020; Naeem, 2021).

While prior studies have identified technical and infrastructural barriers in e-procurement implementation, this study extends the literature by demonstrating that such challenges are not merely operational issues but reflect a broader reconfiguration of organizational work and dependency structures. In this sense, digital transformation can be understood as a double-edged process, where control is enhanced but operational flexibility may be reduced.

Reconfiguring Accountability Through Digital Traceability

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One of the most significant contributions of this study lies in demonstrating how digital systems reshape accountability mechanisms. Electronic transaction records create system-embedded accountability, where transparency is generated through technological traceability rather than solely through hierarchical supervision.

The shift toward digital traceability reflects a transformation from hierarchical accountability to system-embedded accountability, where control mechanisms are internalized within digital infrastructures. Unlike traditional accountability models that rely on supervision and reporting, digital systems enable continuous, real-time verification, thereby redefining accountability as a technologically mediated process (Kasemsap, 2017; Mackey & Cuomo, 2020).

This extends existing digital governance frameworks by demonstrating how accountability is not only enhanced but reconstructed through system design and data architecture. In this sense, digital platforms function as institutional mechanisms that structure accountability practices through embedded rules, automated procedures, and traceable data systems (Alves, 2024; Novitaningrum, 2024).

Integrative Interpretation: Digital Policy Implementation as a Socio-Technical Process

Taken together, the findings suggest that e-procurement implementation in schools represents a socio-technical transformation shaped by interactions between technology, organizational capacity, and governance expectations. While digital restructuring enhances procedural discipline, its effectiveness depends on institutional readiness, and increased technological reliance introduces new forms of vulnerability and workload complexity.

This integrative interpretation advances policy implementation theory by demonstrating that outcomes emerge from continuous interactions between actors, institutions, and technological systems rather than from policy design alone (Padhi & Mohapatra, 2010; Sikombe, 2023). In this sense, digital governance in educational settings should be conceptualized as an adaptive and negotiated process rather than a purely technological intervention.

Theoretical and Practical Implications

Theoretically, this study contributes to digital governance and policy implementation literature by positioning schools as micro-level governance units where technological systems actively shape organizational behavior and accountability practices. The findings extend organizational e-readiness frameworks by conceptualizing readiness as a dynamic condition influenced by institutional learning and contextual adaptation (Basri et al., 2011; Nchabeleng & Ncube, 2025).

From a practical perspective, the findings translate into several actionable recommendations for policymakers and school-level practitioners. First, given that implementation outcomes are strongly influenced by institutional readiness, policymakers should prioritize targeted investments in digital infrastructure and

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connectivity, particularly in schools with limited technological capacity. This aligns with findings that unstable internet access and system disruptions significantly hinder procurement processes (Mohungoo et al., 2020; Naeem, 2021)

Second, the study highlights the need for continuous capacity-building programs for school principals and treasurers, focusing on digital literacy, system operation, and financial reporting competencies. As the findings indicate, limited human resource capacity contributes to increased administrative workload and operational inefficiencies (Basri et al., 2011; Naseebullah et al., 2012)

Third, to address the digital dependency paradox identified in this study, policymakers should develop technical support systems and contingency mechanisms, such as system backup procedures and responsive technical assistance, to minimize disruptions caused by server instability and system failures.

Fourth, at the school level, administrators should adopt adaptive organizational strategies, including task redistribution and workflow adjustment, to manage the increased administrative demands associated with digital procurement systems.

Finally, regulatory frameworks should be continuously refined to ensure that digital procurement policies remain responsive to implementation challenges while maintaining transparency and accountability standards (Mackey & Cuomo, 2020; Shakya, 2017)

Toward a Conceptual Understanding of Digital School Governance

In conclusion, the findings indicate that e-procurement implementation represents a shift toward digitally mediated governance in education (Figure 4), rather than simply modernizing procurement procedures, digital systems reshape organizational structures, redistribute administrative responsibilities, and redefine accountability practices. This conceptualization positions digital procurement as a transformative governance mechanism capable of redefining financial management practices within educational institutions.

This finding supports recent digital governance scholarship emphasizing that technological systems increasingly function as institutional infrastructures shaping organizational practices (Macgilchrist et al., 2025; Pangrazio, 2025). In educational contexts, platform-based systems have been shown to reorganize administrative coordination and decision-making processes through data-driven mechanisms. However, prior studies primarily conceptualize digital platforms as data infrastructures rather than as governance mechanisms embedded in everyday administrative practices.

This study advances this perspective by demonstrating that, in the context of school financial management, e-procurement operates not only as a digital infrastructure but as a governance restructuring mechanism that redistributes authority, standardizes workflows, and embeds procedural control within system-based operations. Unlike previous studies that focus on platformization at a macro or systemic level, this study provides micro-level evidence of how governance is reconfigured through daily administrative practices in schools.

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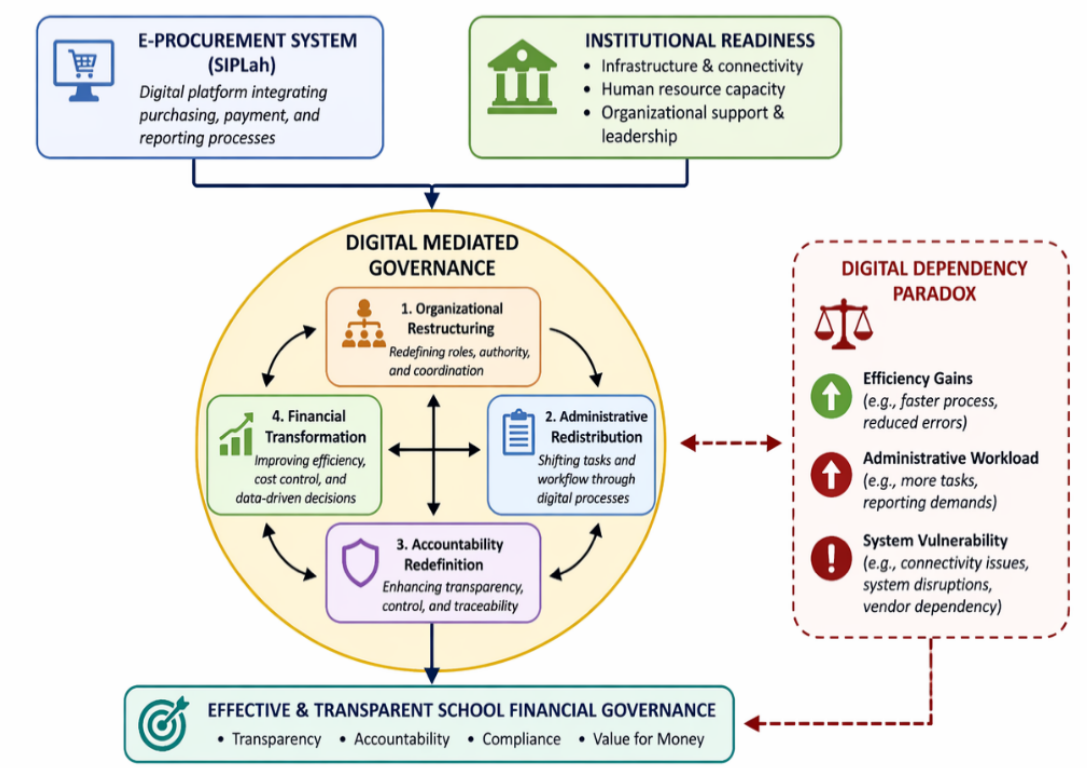

Figure 4. Digital School Governance Model: A Socio-Technical (Framework of E-Procurement Implementation_

The proposed model conceptualizes e-procurement as a socio-technical governance mechanism consisting of three interconnected components. The first component, digital drivers, includes the e-procurement system (SIPLah) and institutional readiness, which function as enabling conditions for implementation. The second component, governance transformation processes, encompasses organizational restructuring, administrative redistribution, accountability redefinition, and financial transformation, reflecting how digital systems reshape institutional practices. The third component refers to governance outcomes, manifested in effective and transparent school financial management.

The model further highlights a digital dependency paradox, indicating that digital transformation is inherently non-linear, where efficiency gains are accompanied by increased organizational complexity and technological reliance.

Unlike existing models that primarily conceptualize e-procurement as a technical or efficiency-oriented system, this model advances a conceptual perspective by positioning digital procurement as a governance restructuring mechanism at the micro-institutional level. This model provides a conceptual basis for future research on digital governance in education, particularly in understanding how digital systems function as institutional mechanisms rather than merely administrative tools.

CONCLUSION

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This study demonstrates that the implementation of e-procurement through SIPLah in school financial management represents a transformative shift from conventional administrative practices toward digitally mediated governance. Rather than functioning solely as a technological tool for procurement efficiency, the system reshapes organizational workflows, redistributes administrative responsibilities, and embeds accountability mechanisms within digital infrastructures. The findings reveal that digital procurement introduces standardized processes that strengthen financial traceability and procedural discipline, thereby contributing to more transparent and accountable school financial governance.

A key theoretical contribution of this study lies in reframing e-procurement implementation as a socio-technical governance transformation. By examining schools as micro-level governance units, the study extends existing digital governance and policy implementation literature, which has largely focused on macro-level public institutions. The findings highlight that policy outcomes emerge through dynamic interactions between technological systems, organizational readiness, and human agency. In this regard, institutional readiness is conceptualized not merely as a technical prerequisite but as an evolving organizational condition shaped by learning processes, leadership support, and contextual adaptation.

Importantly, the study identifies a digital dependency paradox in which technological systems simultaneously enhance efficiency and generate new organizational vulnerabilities. While digitalization strengthens transparency and auditability, it also increases reliance on technological infrastructure and introduces additional administrative demands. This insight advances understanding of digital policy implementation by emphasizing that digital transformation is non-linear and often accompanied by unintended organizational consequences.

From a practical perspective, the findings underscore the importance of moving beyond technology-centered policy approaches. Sustainable implementation of digital procurement requires continuous investment in infrastructure stability, long-term capacity-building for school personnel, and adaptive technical support mechanisms. Policymakers should recognize that digital reforms may initially increase administrative workload and therefore must be accompanied by organizational strategies that support gradual institutional adaptation.

This study is limited by its focus on a specific regional context and a qualitative case-study design, which may restrict the generalizability of findings across broader educational systems. Future research could expand this work through comparative studies across regions or educational levels, as well as mixed-method approaches that examine the long-term impacts of digital procurement on financial performance and institutional governance outcomes.

In conclussion, this study argues that digital procurement should be understood as a governance innovation rather than a purely administrative reform. By revealing how digital systems restructure accountability practices and

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organizational behavior at the school level, the research contributes to a deeper understanding of digital governance in education and offers a conceptual foundation for future studies on the intersection between technology, policy implementation, and institutional transformation.

In practical terms, this study suggests that effective implementation of e-procurement in schools requires an integrated approach that combines technological investment, human resource development, and institutional adaptation. Policymakers should move beyond system deployment toward sustained implementation support, while school leaders must develop adaptive administrative strategies to manage digital workloads and ensure compliance. These findings highlight that successful digital governance is not solely determined by technology, but by the alignment between systems, organizational capacity, and contextual conditions.

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Author Contributions

Sahidin contributed to conceptualization, data collection, data analysis, and writing the original draft. Titi Fatmawati contributed to supervision, methodology validation, and writing through review and editing. Nasir contributed to data interpretation, validation, methodological support, and writing through review and editing. All authors have read and approved the final version of the manuscript.

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Corresponding author: Sahidin (myfmaintenance@gmail.com)

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Corresponding author: Sahidin (myfmaintenance@gmail.com)