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# From Manual to Digital: A Qualitative Case Study on Standardizing E-Payment Governance in State-Owned Agribusiness Enterprises PT Perkebunan Nusantara IV

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## Abstrak

Penelitian ini mengembangkan model standardisasi tata kelola sistem pembayaran elektronik di PT Perkebunan Nusantara IV (PTPN IV) untuk mengatasi ketidakefisienan proses keuangan manual, keterbatasan transparansi, dan ketidakkonsistenan sistem yang dapat menimbulkan risiko operasional, keamanan siber, serta kepatuhan terhadap regulasi. Penelitian ini dilatarbelakangi oleh kebutuhan perusahaan untuk meningkatkan efisiensi, akuntabilitas, dan pengendalian risiko seiring dengan pesatnya perkembangan teknologi pembayaran digital. Dengan menggunakan metode kualitatif melalui pendekatan studi kasus, data dikumpulkan melalui wawancara terstruktur dengan pihak manajemen dan pegawai terkait, serta analisis terhadap dokumen internal dan prosedur pembayaran elektronik yang berlaku. Hasil penelitian menunjukkan bahwa meskipun PTPN IV telah menerapkan beberapa mekanisme pembayaran elektronik, belum terdapat kerangka tata kelola yang terintegrasi dan terstandar sehingga menghambat efektivitas dan koordinasi sistem. Faktor-faktor penting yang perlu diperhatikan dalam pengembangan model meliputi kepatuhan terhadap peraturan keuangan, keamanan aplikasi, manajemen risiko pihak ketiga, serta peningkatan kompetensi sumber daya manusia. Penelitian ini merekomendasikan model standardisasi tata kelola yang mencakup pedoman kebijakan dan Standar Operasional Prosedur (SOP) untuk transaksi elektronik yang diharapkan dapat meningkatkan efisiensi, memperkuat akuntabilitas, serta meminimalkan risiko dalam ekosistem pembayaran digital PTPN IV, sehingga mendukung ketahanan operasional dan transparansi keuangan perusahaan.

*Kata kunci:* Electronic Payment; Standardization Model; Financial Efficiency; PTPN IV

## Abstract

*This study develops a governance standardization model for electronic payment systems at PT Perkebunan Nusantara IV (PTPN IV) to address inefficiencies in manual financial processes, lack of transparency, and inconsistencies in existing systems that may lead to operational, cybersecurity, and compliance risks. The research was motivated by the company's growing need to enhance efficiency, accountability, and risk control in line with the rapid advancement of digital payment technologies. Using a qualitative case study approach, data were collected through structured interviews with management and relevant personnel, supported by a review of internal documents and current electronic payment procedures. The findings indicate that, although PTPN IV has implemented several electronic payment mechanisms, the absence of a standardized and integrated governance framework limits system performance and coordination. Critical factors identified for improvement include adherence to financial regulations,*

*application security, third-party risk management, and enhancement of human resource competencies. The study proposes a governance standardization model encompassing comprehensive policy guidelines and Standard Operating Procedures (SOPs) for electronic transactions, which are expected to improve efficiency, strengthen accountability, and minimize risks within PTPN IV's digital payment ecosystem, ultimately contributing to the company's operational resilience and financial transparency.*

*Keywords: Electronic Payment; Standardization Model; Financial Efficiency; PTPN IV*

## 1. Introduction

The rapid advancement of financial technology (fintech) has significantly influenced corporate financial management, transforming traditional payment systems into integrated digital frameworks that promote transparency and efficiency. According to Bank Indonesia (2023), the total value of electronic payment transactions in Indonesia increased by 22.3% in 2022, demonstrating a strong shift toward digital financial transformation. Similarly, BPS (2024) reports that more than 68% of medium to large enterprises have adopted some form of digital payment system to streamline financial operations and reduce transaction costs. Despite this national progress, many state-owned plantation companies—including PT Perkebunan Nusantara IV (PTPN IV)—continue to rely on semi-manual payment processes, resulting in inefficiencies, delays, and limited transparency in transaction documentation (Data Primer PTPN IV, 2025). These conditions align with findings by Suryani and Nugroho (2022), who note that fragmented financial governance structures often lead to inaccurate financial reporting and reduced operational accountability.

Within PTPN IV's operational framework, payment requests for procurement, vendor settlements, employee salaries, and other expenditures are initiated by business units and channeled through regional offices to the head office for fund disbursement. While this structure ensures procedural authorization, it also introduces variation in documentation formats and approval mechanisms among units, hindering effective harmonization of payment data. Davis and Johnson (2020) argue that decentralized operational systems often struggle to maintain centralized oversight, creating inefficiencies in data consolidation—a situation that mirrors the challenges faced by PTPN IV. Additionally, the absence of a centralized electronic monitoring system restricts the company's ability to track financial transactions accurately, increasing the risk of duplication, delayed approvals, and unrecorded transactions (Rahman et al., 2021).

Putri (2021) further highlights that conventional payment systems pose inherent risks of fraud, data breaches, and unauthorized access due to inadequate verification controls. In the case of PTPN IV, such risks are compounded by fragmented internal systems and the limited automation of financial validation processes. To address these gaps, this research introduces a novel governance standardization model specifically designed for electronic payment systems within the plantation industry. Unlike previous studies that focus predominantly on the banking or retail sectors (e.g., Setiawan & Hartono, 2020; Wibowo, 2023), this study provides a fresh contribution by developing a framework applicable to large-scale, state-owned agroindustry enterprises with decentralized operational structures. The proposed model is expected to enhance efficiency, strengthen accountability, and minimize financial and cybersecurity risks across PTPN IV's digital payment ecosystem. The rapid expansion of digital financial systems has necessitated the establishment of governance frameworks that ensure security, accountability, and regulatory alignment. However, the diversity of technological infrastructures, institutional policies, and user behaviors has made digital payment governance highly fragmented across organizations (OECD, 2021). Therefore, reviewing key components of standardized digital payment governance is essential to identify the theoretical pillars that can form the foundation of an integrated conceptual framework. Such a framework is not only critical for operational uniformity but also serves as an analytical tool to evaluate organizational readiness, system compliance, and governance maturity (Zhang & Xie, 2022). This literature review, therefore, seeks to synthesize major scholarly perspectives to build a coherent conceptual model applicable to PT Perkebunan Nusantara IV (PTPN IV), a large, multi-unit state-owned enterprise where standardization plays a crucial role in digital transformation.

The concept of standardized digital payment governance originates from the broader theory of standardization, defined as the process of formulating and applying uniform specifications to achieve consistency, interoperability, and quality assurance (ISO/IEC, 2004). According to Handayani and Soeparan (2022), standardization acts as a mechanism to enhance interoperability and trust among system components, while also improving efficiency across operational processes. In line with this, Maysari, Pristiyono, and Nasution (2023) emphasize that policy standardization contributes to faster, more accurate, and transparent financial transactions, particularly when supported by coherent human resource policies. Complementing these views, Pratama and Lestari (2022) categorize standardized governance into four essential domains—security and privacy, transparency and accountability, documentation and auditability, and compliance—each forming a foundation for robust digital governance. Wahyudi and Saputro (2021) further strengthen this argument by identifying digital traceability as the backbone of institutional accountability, ensuring every transaction is verifiable and tamper-resistant. Similarly, Susanto and Nugroho (2020) highlight that consistent auditing practices are vital not only for compliance but also for iterative improvement in financial management systems. This is echoed by Wardani and Anwar (2023), who demonstrate that continuous feedback from digital audit loops supports adaptive learning and ongoing performance enhancement. Together, these perspectives align with the OECD (2021) framework on digital governance maturity, which stresses that standardization underpins both system efficiency and ethical accountability in the digital era. Consequently, this study adopts a conceptual model that integrates policy standardization, technological reliability, procedural accountability, and human competence as the core dimensions of digital payment governance—an approach particularly relevant to large, multi-layered enterprises like PTPN IV (Zhang & Xie, 2022).

Within qualitative research traditions, methodological selection depends on the depth and contextual complexity of the research problem. As Yin (2018) asserts, when the objective is to understand dynamic real-world organizational processes, a case study approach provides unparalleled contextual insight. Accordingly, this study applies a qualitative case study methodology to explore and design a standardized governance model for electronic payments at PT Perkebunan Nusantara IV (PTPN IV). The enterprise's hierarchical, multi-unit structure spanning plantations, regional offices, and headquarters presents a complex coordination system that resists reduction to mere quantitative variables. Creswell and Poth (2018) describe qualitative case studies as ideal for analyzing organizational phenomena where meaning and behavior are context-dependent. Merriam and Tisdell (2016) and Miles, Huberman, and Saldaña (2014) support this by noting that the case study's strength lies in its ability to integrate multiple data sources—interviews, observations, and document analysis—to yield a holistic understanding of organizational processes. Patton (2015) and Denzin and Lincoln (2018) add that methodological triangulation and interpretive reflexivity enhance credibility, especially in studies involving governance and digital transformation, which combine technical and behavioral dimensions.

Despite its advantages, the case study approach carries limitations. Yin (2018) and Merriam and Tisdell (2016) note that generalizability can be restricted, as case-specific findings may not fully represent wider populations. Researcher bias also poses a risk in interpretive inquiry (Miles et al., 2014). However, transparent data documentation, iterative coding, and methodological triangulation—as recommended by Creswell and Poth (2018) and Patton (2015)—can mitigate these weaknesses. In alignment with Wardani and Anwar (2023), reflexivity further ensures that interpretations remain grounded in empirical evidence rather than subjective assumptions. Ultimately, while case studies prioritize depth over breadth, their capacity to reveal systemic interactions makes them particularly effective for understanding digital governance dynamics in complex institutions such as PTPN IV. Future research may expand upon this framework using multiple case designs or mixed methods, as suggested by Denzin and Lincoln (2018), to enhance both analytical rigor and generalizability across state-owned enterprises.

## **2. Methods**

The research employed a descriptive case study methodology focusing on PT Perkebunan Nusantara IV (PTPN IV) as a single case for in-depth analysis. This approach was chosen because the case study method enables a comprehensive exploration of real-life organizational phenomena within their natural context, allowing researchers

to capture the complexity of governance processes and decision-making structures (Yin, 2018). The descriptive nature of the study aims to systematically and accurately portray the current state of electronic payment governance in PTPN IV, identifying its existing challenges, inefficiencies, and opportunities for improvement rather than testing hypotheses or establishing causal relationships. The case study design was selected for its strength in providing contextual depth, facilitating an understanding of both technical and managerial aspects of payment governance within a specific institutional setting. However, the method also carries certain limitations, such as reduced generalizability and the potential for researcher bias due to the interpretive nature of qualitative inquiry (Stake, 1995; Merriam & Tisdell, 2016). Despite these constraints, this approach is considered appropriate for developing a conceptual framework and proposing a standardized governance model that reflects the unique operational dynamics of PTPN IV. Future researchers are encouraged to build upon this work by conducting comparative or multi-case studies to enhance external validity and provide broader insights into electronic payment governance in similar organizations.

**3. Methods**

This study developed a Standardized Governance Framework for Electronic Payments, specifically designed for PTPN IV. The framework functions as both a strategic blueprint and an operational guide, facilitating the company’s transformation from manual payment procedures to a secure, efficient, and fully integrated digital system implemented across all business units. Moreover, the model has been formally incorporated into the User Manual for E-Invoice and E-Payment, serving as an authoritative reference for the standardization and execution of payment processes within PTPN IV.

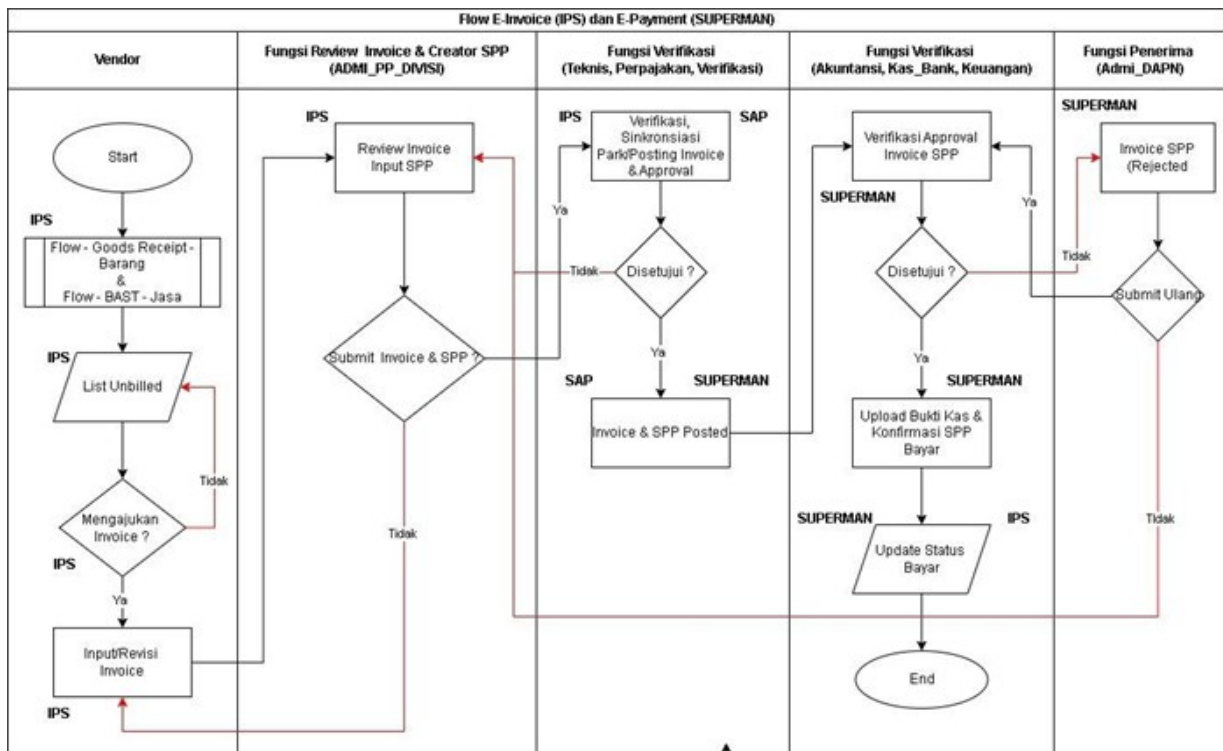


Figure 1. PTPN IV Payment Integration Process  
Source data : Data Primer PTPN IV

The Standardization Model comprises seven integrated and complementary components, as illustrated in the PTPN IV Payment Integration Process (refer to Figure 6.2). The model reflects the structured governance of digital financial

transactions through the synchronization between the E-Invoice (IPS) and E-Payment (SUPERMAN) systems. First, the Vendor Submission Component initiates the process through goods or service confirmation (BAST), followed by invoice preparation and input, ensuring that all transactions are based on verified procurement data. Second, the Invoice Review and Creation Component (IPS) involves systematic validation and entry of invoices and Payment Submission Proposals (SPP) to guarantee data accuracy before submission. Third, the Verification Component (technical, taxation, and general verification) ensures compliance with both internal controls and external regulations, emphasizing auditability and accountability. Fourth, the Approval Component (SAP System Integration) functions as a gatekeeper, determining whether submitted documents meet governance and compliance requirements. Fifth, the Financial Verification Component (Accounting, Treasury, and Banking) validates the financial integrity of transactions, ensuring that payment approvals align with corporate budgeting and authorization standards. Sixth, the Payment Confirmation Component (SUPERMAN) handles fund disbursement, uploading payment proof, and confirming transaction completion. Finally, the Status Update and Feedback Component provides real-time visibility into transaction status through IPS, closing the loop between vendor, finance, and operational units. Collectively, these components represent a standardized, transparent, and traceable framework that enhances payment governance efficiency and data reliability across PTPN IV's digital ecosystem.

## 5. Conclusion

This study achieved its objective of analyzing and designing a standardized governance model for electronic payments at PT Perkebunan Nusantara IV (PTPN IV) by identifying key components that integrate policy formulation, verification processes, risk management, and payment accountability within a single operational framework. The resulting model provides a comprehensive structure that aligns strategic governance with day-to-day transactional activities, ensuring coherence between policy and practice. Findings from the case study reveal that standardization in digital payment governance enhances operational efficiency, strengthens financial transparency, mitigates cybersecurity threats, and ensures compliance with both internal and external regulations. Therefore, the proposed framework serves not only as a practical guideline for PTPN IV's financial digitalization but also as a reference model for other large organizations seeking to implement standardized and accountable electronic payment systems.

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