Model for Regional Supplier Payment Standardization in African Procurement Networks

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Abstract- ***The fragmentation of supplier payment systems across African procurement networks presents significant challenges to efficiency, transparency, and inclusivity in regional trade. Traditional approaches, often reliant on manual processes, diverse regulatory frameworks, and non-interoperable payment infrastructures, contribute to delays, high costs, and limited access for small and medium-sized enterprises (SMEs). These inefficiencies directly undermine the goals of initiatives such as the African Continental Free Trade Area (AfCFTA), which emphasize integration, competitiveness, and intra-African trade growth. To address these challenges, this study proposes a conceptual model for regional supplier payment standardization, designed to harmonize transaction protocols, enhance transparency, and strengthen trust across procurement ecosystems. The model integrates theoretical perspectives from systems theory, institutional economics, and network intermediation to conceptualize supplier payments as interconnected processes requiring both technological and regulatory coherence. Its core components include standardized payment protocols based on international digital formats (e.g., ISO 20022), interoperable digital platforms and APIs, regional settlement infrastructures, and harmonized compliance frameworks aligned with anti-money laundering (AML) and know-your-customer (KYC) requirements. By embedding these components within the operational structures of regional trade blocs such as ECOWAS, SADC, and AfCFTA, the model enables consistent, secure, and inclusive supplier payments across borders. Evaluation dimensions highlight potential benefits including reduced transaction costs, accelerated procurement cycles, improved visibility into supplier performance, and expanded access for SMEs via mobile payment solutions. Nonetheless, bottlenecks such as regulatory divergence, infrastructure gaps, and cybersecurity risks remain critical barriers to adoption. Pathways for overcoming these challenges include public-private partnerships, regulatory sandboxes, and capacity-building initiatives. The proposed model contributes to both academic discourse and policy debates on African trade facilitation. It underscores how harmonized supplier payment standards can accelerate procurement efficiency, foster trust, and strengthen regional integration, ultimately advancing Africa's economic competitiveness in the global marketplace.***

Keywords: African Procurement Networks, Cross-Border Payments, ISO 20022, Digital Payment Platforms, Mobile Money Integration, SME Inclusion, Procurement Transparency, Regulatory Harmonization, AML/KYC Compliance, Settlement Infrastructure, Regional Trade Blocs, Afcfta Integration

I. INTRODUCTION

Procurement systems play a critical role in shaping the efficiency and resilience of regional and global supply chains. In Africa, where intra-regional trade has been historically constrained, procurement networks form the backbone of economic interaction across borders (Nwaimo *et al*., 2019; Evans-Uzosike, I.O. and Okatta, 2019). Yet, one of the most persistent challenges undermining these networks is the fragmentation of supplier payment systems (Menson *et al*., 2019). Diverse regulatory regimes, inconsistent banking infrastructures, reliance on manual documentation, and limited interoperability between digital payment platforms have created a patchwork of processes that hinder smooth and transparent supplier transactions (Essien *et al*., 2019; Ayanbode *et al*., 2019). These

inefficiencies are particularly acute in cross-border procurement, where suppliers and buyers often face high transaction costs, extended settlement times, and risks of error or fraud. The absence of harmonized payment standards not only increases operational burdens but also erodes trust, discouraging small and medium-sized enterprises (SMEs) from participating in regional supply chains (Essien *et al*., 2019; Etim *et al*., 2019).

The importance of procurement networks in regional trade and economic integration cannot be overstated. Initiatives such as the African Continental Free Trade Area (AfCFTA) aim to accelerate intra-African trade, reduce dependence on external markets, and build competitive value chains across industries such as agriculture, manufacturing, and services (Menson *et al*., 2018; Scholten *et al*., 2018). For these ambitions to be realized, payment systems embedded within procurement processes must be efficient, transparent, and inclusive. Supplier payments are not simply financial transactions but strategic enablers of regional integration. They influence supplier trust, buyer reliability, and overall trade performance. When payments are delayed or inconsistent, procurement networks lose momentum, and businesses face increased liquidity pressures that hinder competitiveness and growth (Otokiti, 2012; Lawal *et al*., 2014).

The rationale for payment standardization in African procurement networks rests on three critical pillars; efficiency, cost reduction, and trust-building. Standardized systems can streamline procurement cycles by reducing manual reconciliations and eliminating redundant intermediary steps. Costs associated with cross-border remittances, foreign exchange spreads, and administrative overhead can be significantly reduced when payments are harmonized across regions (Amos *et al*., 2014; Otokiti and Akorede, 2018). Moreover, transparent and predictable payment processes enhance trust between buyers and suppliers, creating conditions for long-term collaboration and broader SME participation in regional value chains. Trust is particularly critical in Africa's procurement landscape, where informal transactions and limited access to formal financial systems often dominate.

Against this backdrop, the proposed model for regional supplier payment standardization seeks to establish harmonized payment frameworks that enable transparency, inclusivity, and scalability across Africa (Ajonbadi *et al*., 2015; Otokiti, 2017). The model envisions standardized protocols for transaction messaging, the adoption of interoperable digital platforms, and the establishment of regional settlement infrastructures that align with international best practices such as ISO 20022. It also emphasizes regulatory harmonization, particularly in areas such as anti-money laundering (AML), know-your-customer (KYC), and tax compliance, to ensure secure and legitimate payment flows. By embedding these elements within regional trade blocs like ECOWAS, SADC, and AfCFTA, the model aims to reduce fragmentation and foster alignment across diverse markets.

Ultimately, the objective of the model is to create a payment ecosystem that empowers businesses of all sizes, particularly SMEs, to participate in procurement networks with reduced barriers. Through transparency, scalability, and inclusivity, the model aspires to strengthen regional supply chains, enhance economic competitiveness, and drive Africa closer to the vision of seamless intra-continental trade.

II. METHODOLOGY

The PRISMA methodology for developing a model for regional supplier payment standardization in African procurement networks begins with a systematic review and synthesis of existing scholarly, institutional, and policy literature. Initial identification involves structured searches across databases such as Scopus, Web of Science, JSTOR, and regional repositories including African Journals Online (AJOL), alongside reports from multilateral organizations such as the African Development Bank, World Bank, and United Nations Economic Commission for Africa. Keywords and Boolean operators are applied to ensure comprehensiveness, combining terms such as "African procurement networks," "supplier payments," "standardization," "regional integration," "digital payments," and "financial interoperability." The screening stage applies inclusion criteria emphasizing studies published in English or French over the last fifteen

years that focus on procurement practices, digital infrastructure, payment standardization, and cross-border trade in African contexts. Exclusion criteria filter out works that deal exclusively with non-African markets or purely domestic payment systems without regional application.

Eligibility assessment involves detailed review of selected studies to extract data on the challenges of fragmented supplier payment systems, the role of regional economic communities (e.g., ECOWAS, SADC, EAC), the technological underpinnings of interoperable platforms, and regulatory considerations for payment harmonization. At this stage, attention is given to case studies of mobile money ecosystems, regional payment systems such as the Pan-African Payment and Settlement System (PAPSS), and pilot initiatives in procurement digitization. Data extraction and synthesis follow a thematic coding approach, where findings are categorized under infrastructure, governance, compliance, cost efficiency, and inclusivity dimensions.

The final synthesis integrates these themes to conceptualize a model that prioritizes interoperability, adoption of global standards (ISO 20022, GS1), alignment with African Continental Free Trade Area (AfCFTA) objectives, and the balance between digital innovation and regulatory harmonization. The PRISMA flow ensures methodological transparency by documenting the number of records identified, screened, excluded, and retained for analysis. The resulting evidence base underpins a framework designed to reduce payment fragmentation, strengthen supplier trust, and enhance cross-border procurement efficiency in Africa. The PRISMA-driven methodology thus ensures rigor, replicability, and relevance in shaping a model that addresses the dual imperatives of economic integration and digital transformation in African procurement networks.

2.1 Theoretical Foundations

Understanding the dynamics of supplier payment systems within African procurement networks requires a multifaceted theoretical approach that integrates systems theory, institutional economics, network intermediation theory, and governance perspectives (Akinbola and Otokiti, 2012; Lawal *et al*., 2014). Each of these lenses provides unique insights into the structural, economic, and regulatory factors that shape payment processes, highlighting both the sources of inefficiency in current systems and the pathways toward regional standardization.

Systems theory offers a foundational perspective by conceptualizing supplier payment systems as complex, interconnected networks of financial, technological, and trade actors. In this framework, payments are not isolated transactions but elements of a broader system encompassing buyers, suppliers, banks, fintech platforms, clearinghouses, and regulatory bodies. Systems theory emphasizes the interdependencies among these components: delays or inefficiencies in one node, such as a bank or payment platform, can propagate through the entire network, causing cascading effects on procurement cycles, supplier trust, and overall supply chain performance. This perspective is particularly relevant in Africa, where heterogeneous banking infrastructures, variable internet penetration, and divergent regional regulations create fragmented payment networks. By viewing supplier payments as part of an integrated system, policymakers and practitioners can identify systemic bottlenecks, optimize network interactions, and design harmonized protocols that enhance resilience and efficiency across procurement networks (Ajonbadi *et al*., 2014; Ajayi, 2018).

Complementing this systemic view, institutional economics provides a lens to understand how standards and formal rules influence economic interactions. Transaction costs—such as negotiating terms, reconciling payments, and mitigating risk—are particularly high in fragmented payment environments. Institutional economics argues that the establishment of formal standards, including standardized payment protocols and compliance requirements, reduces these costs by clarifying expectations, enabling interoperability, and minimizing uncertainty. Standards facilitate trust among suppliers and buyers, as stakeholders can rely on predictable procedures, secure settlements, and consistent documentation. In African procurement networks, where SMEs and informal enterprises often operate in environments characterized by limited enforceability of contracts, institutionalized standards can significantly reduce the risks associated with

cross-border transactions, enabling broader participation and promoting market efficiency.

Network intermediation theory further elucidates the roles of various actors in the supplier payment ecosystem. Traditional intermediaries, such as correspondent banks, provide liquidity, settlement services, and risk mitigation but often introduce inefficiencies through multiple hand-offs, delays, and fees. Fintech platforms and digital payment solutions offer alternative pathways for transaction processing, improving speed and transparency while reducing reliance on centralized intermediaries (Dare *et al*., 2018; Ajayi *et al*., 2018). Within regional trade blocs, such as ECOWAS, SADC, and AfCFTA, the interplay between banks, fintechs, and governing institutions becomes critical in establishing harmonized payment frameworks. Network intermediation theory highlights the potential for strategic partnerships and integration across these actors to facilitate seamless payments, demonstrating that effective standardization requires coordination not only at the technological level but also across institutional networks that govern financial flows.

Finally, governance perspectives emphasize the necessity of compliance, oversight, and harmonization in achieving secure and reliable supplier payment systems. Fragmentation in regulatory environments—varying AML/KYC rules, differing tax obligations, and inconsistent dispute resolution mechanisms—creates uncertainty that can delay payments and elevate risk. Effective governance frameworks ensure that standardized payment protocols are enforceable, transparent, and aligned across jurisdictions, reducing operational friction and enhancing stakeholder confidence. Harmonization efforts within regional trade blocs provide a mechanism for aligning national regulations with continental standards, enabling interoperability and minimizing barriers to cross-border procurement. Moreover, robust governance structures support accountability, risk management, and fraud prevention, which are essential for sustaining trust in both public and private sector procurement networks (Etim *et al*., 2018; Ayanbode *et al*., 2018).

Taken together, these theoretical foundations provide a comprehensive lens for analyzing and designing standardized supplier payment systems in Africa. Systems theory highlights the interconnections and potential cascading effects of inefficiencies, institutional economics underscores the role of standards in reducing transaction costs and building trust, network intermediation theory clarifies the roles and interactions of intermediaries and digital platforms, and governance perspectives ensure regulatory coherence and oversight. By integrating these frameworks, the proposed model for regional supplier payment standardization is anchored in both economic theory and practical considerations, offering a robust foundation for harmonizing procurement networks across diverse African markets (Essien *et al*., 2018; Babatunde *et al*., 2018).

Ultimately, the synthesis of these theories informs a model that balances efficiency, transparency, and security with inclusivity and scalability, enabling procurement networks to operate more effectively while fostering regional economic integration and sustainable trade growth.

2.2 Evaluation Dimensions

The assessment of a standardized supplier payment model within African procurement networks requires a multidimensional framework to evaluate its operational performance, economic efficiency, and socio-technical impact (Chilvers *et al*., 2017; Geels and Johnson, 2018). Six key evaluation dimensions—efficiency, cost, transparency, reliability, security and compliance, and accessibility—provide comprehensive criteria for measuring the effectiveness and scalability of standardized payment systems across diverse procurement contexts.

Efficiency is a primary dimension of evaluation, reflecting the model's ability to streamline procurement processes and reduce transactional bottlenecks. Standardized payment protocols and interoperable digital platforms minimize the need for manual reconciliation, which traditionally consumes significant administrative resources and prolongs payment cycles. Automated transaction processing, integrated with enterprise resource planning (ERP) systems, enables near-real-time payment verification and settlement, reducing delays associated with multi-tier banking intermediaries. Improved efficiency directly enhances procurement timelines, allowing

buyers and suppliers to execute contracts more predictably, maintain inventory flow, and optimize cash management (Davis, 2016; Rejeb *et al*., 2018). In cross-border scenarios, where traditional processes may involve multiple correspondent banks, efficiency gains are particularly critical in ensuring timely delivery of goods and services across regional value chains.

Cost represents another critical dimension, capturing the economic benefits of standardized payment systems. Fragmented payment processes often impose high transaction fees, foreign exchange spreads, and administrative overhead on both buyers and suppliers. By implementing harmonized protocols and leveraging digital platforms, transaction costs can be significantly reduced through decreased intermediary involvement, minimized manual processing, and optimized cross-border settlement. Lower costs improve liquidity management for suppliers, particularly small and medium-sized enterprises (SMEs), and enhance the competitiveness of regional procurement networks. Additionally, standardized reporting and automated reconciliation reduce the indirect costs associated with error correction, dispute resolution, and delayed payments, contributing to overall operational savings.

Transparency is a cornerstone of trust in supplier payment systems. Standardized payment frameworks provide consistent formats for reporting transactions, enabling uniform visibility into payment flows across buyers, suppliers, and financial institutions. Digital audit trails allow stakeholders to track transaction status in real-time, verify payment execution, and monitor adherence to contractual terms. Transparent processes also facilitate accountability and regulatory oversight, reducing opportunities for fraud, corruption, and mismanagement. In public procurement and multi-country supply chains, transparency enhances confidence among stakeholders, supports compliance with regional trade regulations, and fosters reliable partnerships between buyers and suppliers (Naziri *et al*., 2017; Veenstra, 2018).

Reliability refers to the consistency and predictability of payment execution across countries and institutions. Standardized settlement mechanisms, integrated dispute resolution frameworks, and automated exception handling contribute to operational reliability. Reliable payment systems ensure that suppliers receive funds on schedule, regardless of geographic or institutional complexity, minimizing disruptions to production, delivery, and service fulfillment. Inconsistent or unpredictable payments undermine supplier trust, disrupt procurement cycles, and limit participation in regional value chains, making reliability a critical evaluation criterion for the model's success.

Security and Compliance encompass the safeguarding of financial and transactional data, as well as adherence to regulatory obligations. Standardized systems integrate fraud prevention mechanisms, digital identity verification, and AML/KYC alignment, reducing exposure to illicit activities and cyber threats. Resilience against hacking, phishing, or data tampering is essential in a cross-border context, where multiple intermediaries and jurisdictions increase vulnerability. Secure and compliant payment networks not only protect financial assets but also reinforce stakeholder confidence, facilitating adoption among both public and private sector actors (Carrapico, H. and Farrand, 2017; Chiu, 2017).

Accessibility measures the inclusivity and reach of standardized payment systems. Mobile-enabled platforms, digital wallets, and interoperable APIs allow SMEs, informal suppliers, and operators in remote areas to participate fully in regional procurement networks. Accessibility ensures that small-scale actors, who often face barriers due to limited banking infrastructure or high transaction costs, can engage in cross-border procurement and benefit from efficient payment mechanisms (Hailemeskel *et al*., 2016; Tavengerwei, 2018). Inclusive access supports broader economic development, enhances supply chain resilience, and promotes equitable participation in regional trade initiatives such as AfCFTA.

In combination, these evaluation dimensions provide a comprehensive framework for assessing the performance, impact, and scalability of standardized supplier payment systems. Efficiency and cost metrics quantify operational and economic benefits, transparency and reliability measure trust and

predictability, security and compliance ensure regulatory alignment, and accessibility evaluates inclusivity and participation. Together, these dimensions enable stakeholders to identify strengths, weaknesses, and areas for improvement, guiding the design, implementation, and continuous optimization of standardized payment models. By systematically evaluating these criteria, African procurement networks can advance toward efficient, secure, and inclusive cross-border payment ecosystems that support regional trade integration and sustainable economic growth.

2.3 Model Components

The proposed model for regional supplier payment standardization in African procurement networks is built on five interrelated components designed to streamline transactions, enhance transparency, and facilitate regional trade integration as shown in figure 1. By addressing both technological and regulatory dimensions, these components create a comprehensive framework capable of overcoming existing inefficiencies and fragmentation in supplier payment processes.

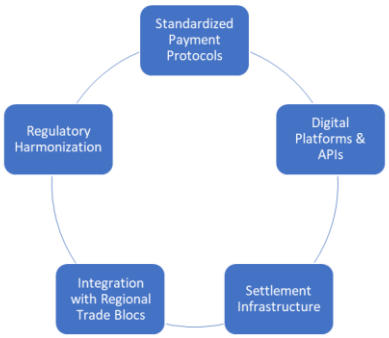

Figure 1: Model Components

Standardized Payment Protocols form the backbone of the model. The adoption of common digital formats, such as ISO 20022 messaging standards, provides uniformity in transaction reporting and reconciliation. Standardization ensures that payment instructions, remittance details, and settlement confirmations are interpreted consistently across financial institutions, procurement agencies, and suppliers. This reduces errors arising from inconsistent data formats and minimizes the need for manual intervention, thereby accelerating payment cycles. Moreover, standardized protocols serve as a foundation for integrating digital platforms, enabling interoperability among diverse banking and fintech systems across African countries (Dapp, 2017; Arner *ET AL*., 2018). By establishing a shared language for supplier payments, stakeholders can engage with greater predictability and reliability, supporting both cross-border transactions and intra-country procurement processes.

Digital Platforms and APIs complement standardized protocols by providing unified technological interfaces for transaction initiation, tracking, and settlement. Centralized or cloud-based platforms can aggregate supplier data, automate payment workflows, and facilitate real-time monitoring of procurement transactions. Application Programming Interfaces (APIs) enable seamless integration between corporate enterprise resource planning (ERP) systems, banks, and payment networks, allowing for automated data exchange and validation. Such integration reduces administrative burdens and reconciliation delays while providing procurement managers and suppliers with visibility into transaction status. Digital platforms also support mobile access, which is particularly important in regions where banking infrastructure is limited, thereby broadening participation among SMEs and informal sector suppliers.

Regulatory Harmonization is critical to ensure that standardized payment systems operate within compliant and legally coherent frameworks. Aligning anti-money laundering (AML), know-your-customer (KYC), tax compliance, and trade regulations across jurisdictions reduces the risk of delays, penalties, or disputes. Regulatory harmonization enables cross-border payments to flow smoothly without encountering divergent requirements in each country, while also fostering trust among stakeholders. Regional oversight mechanisms can be established within trade blocs to monitor compliance and facilitate dispute resolution, thereby reinforcing the legitimacy and reliability of the payment ecosystem.

Settlement Infrastructure represents the operational layer that ensures the secure and timely transfer of funds. Regional clearinghouses can serve as centralized settlement nodes, standardizing processes for finalizing payments across countries. Alternatively, blockchain-enabled settlement layers can provide decentralized, immutable ledgers that

offer real-time reconciliation and auditability. Both approaches aim to reduce dependency on multiple intermediaries, decrease settlement times, and enhance transparency. By implementing robust settlement infrastructure, procurement networks can minimize errors, reduce counterparty risks, and support high transaction volumes necessary for large-scale regional trade (Tompkins and Olivares, 2016; Nicoletti, 2018).

Integration with Regional Trade Blocs ensures that the model aligns with broader economic and policy objectives. Embedding standardized payment protocols within the operational frameworks of organizations such as the African Continental Free Trade Area (AfCFTA), the Southern African Development Community (SADC), and the Economic Community of West African States (ECOWAS) promotes interoperability across national borders. This alignment facilitates intra-African trade, supports regional value chains, and strengthens the economic integration agenda. By embedding standardization into trade bloc frameworks, stakeholders gain not only technological efficiencies but also policy coherence, fostering sustainable adoption and scalability across multiple markets.

Collectively, these components form a comprehensive and interdependent architecture for supplier payment standardization. Standardized protocols provide consistency in transaction messaging, digital platforms and APIs enable automation and real-time visibility, regulatory harmonization ensures legal and compliance alignment, settlement infrastructure guarantees secure fund transfers, and integration with regional trade blocs embeds the model within broader economic systems. The synergy among these components allows African procurement networks to overcome current fragmentation, reduce transaction costs, and enhance trust among buyers and suppliers, laying the foundation for a more efficient, inclusive, and resilient regional payment ecosystem.

2.4 Application Scenarios

The adoption of standardized supplier payment systems in African procurement networks has significant implications across diverse application contexts, ranging from public procurement to private sector supply chains and trade finance. By establishing harmonized payment protocols, interoperable platforms, and secure settlement infrastructures, the model addresses operational inefficiencies, enhances transparency, and promotes inclusive participation across multiple sectors (Chiu, 2017; Grody, 2018). Examining practical application scenarios illuminates the model's potential impact and the mechanisms through which standardization can transform procurement processes.

Public Procurement represents a critical application domain where standardized supplier payments can enhance transparency, accountability, and efficiency. Governments across Africa routinely engage contractors and suppliers for infrastructure projects, service delivery, and public works, often spanning multiple jurisdictions. Traditional payment systems in this context are prone to delays, opaque intermediary chains, and limited visibility into transaction status, creating opportunities for fraud and corruption. By implementing standardized payment protocols and interoperable digital platforms, procurement agencies can process payments to contractors in a consistent, auditable, and timely manner. Automated reconciliation, real-time tracking, and integration with regulatory compliance checks such as AML and KYC enhance accountability, reduce processing errors, and build trust among suppliers. This level of transparency not only improves operational efficiency but also reinforces public confidence in government procurement systems, promoting equitable and reliable access to public contracts.

Manufacturing Supply Chains constitute another key application scenario, particularly within regional value chains where raw materials and components are sourced across borders. Fragmented payment systems can impede the timely delivery of inputs, disrupt production schedules, and increase working capital requirements. Standardized supplier payment frameworks streamline cross-border transfers by harmonizing transaction formats, enabling real-time tracking, and integrating settlement processes across participating banks and fintech platforms. As a result, manufacturers can ensure predictable cash flows for suppliers, reduce delays in procurement cycles, and optimize inventory management. These improvements enhance competitiveness by facilitating just-in-time production, minimizing stockouts, and enabling regional manufacturers to respond quickly to market

demands. Moreover, harmonized payment practices support transparency and contract compliance, reducing disputes and fostering collaborative supplier relationships.

SME Participation is significantly enhanced through mobile-enabled access to standardized payment networks. SMEs often face barriers to entry in cross-border procurement due to high transaction costs, complex banking requirements, and limited access to formal financial services. By leveraging mobile money platforms, digital wallets, and interoperable APIs, SMEs can receive payments directly, securely, and efficiently without dependence on multiple intermediaries. This accessibility reduces financial friction, expands participation in regional procurement markets, and strengthens economic inclusion. SMEs can also benefit from real-time transaction visibility and automated reconciliation, allowing them to manage cash flows effectively and invest in growth opportunities. Expanding SME participation through standardized digital payments contributes to regional economic diversification and promotes equitable access to trade opportunities.

Trade Finance Integration represents a complementary application scenario that links supplier payments to digital letters of credit, guarantees, and other financing instruments. Traditionally, trade finance relies on paper-based documentation, manual verification, and fragmented settlement processes, which delay payment and increase operational risk. By integrating standardized payment protocols with digital trade finance platforms, suppliers can receive funds promptly once contractual conditions are met, while banks and financial institutions can verify transactions efficiently through automated systems. Blockchain-enabled settlement layers or digital ledgers can further enhance security, traceability, and dispute resolution capabilities, ensuring compliance with contractual and regulatory obligations (Kaal and Calcaterra, 2017; Nikolakis *et al*., 2018). This integration facilitates risk mitigation, improves working capital management, and supports seamless cross-border trade operations.

In synthesis, these application scenarios illustrate the transformative potential of standardized supplier payment systems in African procurement networks. Public procurement benefits from enhanced transparency and reduced corruption risk; manufacturing supply chains gain efficiency, reliability, and predictability; SMEs achieve greater market access and inclusion; and trade finance processes are streamlined with improved security and compliance. Together, these scenarios demonstrate that standardization not only optimizes operational efficiency but also strengthens trust, scalability, and economic integration, laying the groundwork for more resilient and inclusive regional procurement networks.

2.5 Bottlenecks and Challenges

Despite the potential benefits of a standardized supplier payment model in African procurement networks, its implementation faces a series of critical bottlenecks and challenges (Njagi and Shalle, 2016; Chataway *et al*., 2016). These barriers span regulatory, infrastructural, organizational, and technological domains, reflecting the complex realities of diverse African markets as shown in figure 2. Understanding these challenges is essential for designing pragmatic solutions that enable scalable, secure, and inclusive payment standardization.

Figure 2: Bottlenecks and Challenges

Regulatory divergence among African countries represents one of the most significant obstacles. Each country maintains distinct financial regulations, compliance requirements, and tax regimes that govern supplier payments. Anti-money laundering (AML) and know-your-customer (KYC) standards, for example, vary widely, resulting in inconsistent onboarding procedures, verification timelines, and documentation requirements. Such divergence complicates cross-border payments, increases compliance costs, and creates uncertainty for businesses and procurement agencies. Harmonizing regulations across jurisdictions is therefore critical, yet

achieving alignment requires coordination among multiple central banks, financial authorities, and regional trade blocs—an endeavor that is both politically and administratively challenging. The absence of a unified regulatory framework slows adoption, introduces legal risks, and can undermine trust in standardized payment systems.

Infrastructure gaps further impede implementation. While mobile payment adoption in Africa has grown rapidly, disparities in internet penetration, digital literacy, and mobile interoperability persist across regions. Rural and underserved areas, in particular, may lack reliable connectivity or access to formal banking systems, limiting the reach of standardized digital payment solutions. Even in urban centers, inconsistencies between mobile payment platforms and legacy banking infrastructures can create integration challenges, leading to transaction failures, delays, or reconciliation errors. Without adequate infrastructure, the intended efficiency, accessibility, and transparency benefits of standardization cannot be fully realized, leaving SMEs and informal suppliers at a disadvantage (Ngarachu *et al*., 2017; Scott *et al*., 2017).

Resistance to change among banks and procurement agencies presents a human and organizational dimension of bottleneck. Traditional financial institutions may perceive standardized digital payment models as a threat to existing revenue streams derived from intermediated services, while procurement agencies accustomed to manual processes may be hesitant to adopt new workflows. Organizational inertia, lack of training, and concerns over operational disruption can slow adoption, even when the technological and regulatory frameworks are in place. Engaging stakeholders early, demonstrating clear benefits, and providing capacity-building programs are necessary to overcome resistance, yet these measures require time and investment, potentially delaying implementation at scale (Vallejo and Wehn, 2016; Ika and Donnelly, 2017).

Cybersecurity risks and the lack of standardized digital identity systems represent critical technological challenges. As payment systems become increasingly digital, they are exposed to threats such as hacking, phishing, and fraud. In cross-border contexts, vulnerabilities can be amplified by inconsistent security protocols and fragmented authentication mechanisms. The absence of standardized digital identity systems further complicates verification processes, making it difficult to ensure that suppliers, buyers, and financial intermediaries are securely and reliably authenticated. Cybersecurity incidents not only incur financial losses but also erode trust in the payment system, undermining participation and compliance (Asghari *et al*., 2016; Coburn *et al*., 2018). Implementing robust security protocols, multi-factor authentication, and interoperable digital identity frameworks is therefore essential to safeguard the integrity of standardized payment networks.

These challenges collectively highlight the multifaceted nature of bottlenecks in standardizing supplier payments across African procurement networks. Regulatory divergence, infrastructural gaps, organizational resistance, and cybersecurity vulnerabilities interact dynamically, creating complex barriers to adoption (Christou, 2016; Finnemore and Hollis, 2016). Addressing these challenges requires a holistic approach that combines policy alignment, investment in digital infrastructure, stakeholder engagement, and advanced security solutions. Additionally, leveraging regional trade blocs such as AfCFTA, SADC, and ECOWAS as coordinating bodies can facilitate harmonization, promote interoperability, and provide a platform for capacity-building initiatives. By systematically tackling these bottlenecks, African procurement networks can unlock the efficiency, transparency, and inclusivity benefits of standardized supplier payment systems, ultimately supporting regional economic integration and sustainable trade growth.

2.5 Pathways for Improvement

The successful implementation of a standardized supplier payment model in African procurement networks requires deliberate strategies to overcome regulatory, infrastructural, organizational, and technological challenges as shown in figure 3. Four primary pathways—regional public-private partnerships, regulatory sandboxes, capacity building, and leveraging fintech innovations—offer actionable mechanisms to facilitate adoption, foster trust, and

enhance the overall effectiveness of payment standardization across diverse African markets.

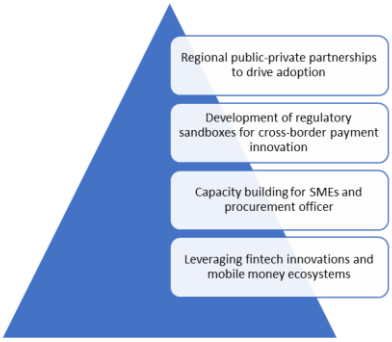

Figure 3: Pathways for Improvement

Regional public-private partnerships (PPPs) represent a critical pathway for driving adoption and scaling standardized payment systems. By aligning the interests of governments, central banks, financial institutions, procurement agencies, and technology providers, PPPs can coordinate investments, ensure compliance, and support the deployment of interoperable payment platforms. Such collaborations allow public sector entities to provide regulatory guidance, oversight, and incentives, while private sector actors contribute technological expertise, operational efficiency, and innovative payment solutions (Wilkins *et al.*, 2016; Mikhaylov *et al.*, 2018). For instance, a PPP can co-develop a regional digital payment infrastructure that connects procurement networks across multiple countries, pooling resources and harmonizing standards to reduce duplication and fragmentation. Additionally, partnerships with industry associations and trade blocs, such as the African Continental Free Trade Area (AfCFTA), enable policy alignment, cross-border cooperation, and standardized compliance mechanisms, fostering confidence among suppliers and buyers.

Regulatory sandboxes offer a complementary pathway by providing controlled environments for testing cross-border payment innovations. These frameworks allow fintechs, banks, and procurement agencies to experiment with new digital platforms, mobile money integrations, or blockchain-based solutions under the supervision of regulators. Sandboxes mitigate the risk of non-compliance while promoting innovation, enabling stakeholders to identify technical, operational, and legal challenges before full-scale deployment. By simulating real-world transaction scenarios, regulatory sandboxes also facilitate the development of best practices, inform policy adjustments, and support the gradual harmonization of AML/KYC, tax, and trade compliance standards across jurisdictions. Such iterative learning processes enhance the resilience and scalability of standardized payment systems while maintaining regulatory integrity.

Capacity building for SMEs and procurement officers is equally vital to ensure the practical uptake and sustainability of standardized payment models. SMEs, particularly in rural or underserved regions, often lack the digital literacy, financial knowledge, or technological infrastructure to effectively engage with standardized payment systems. Training programs, workshops, and targeted technical assistance can equip SMEs with the skills needed to operate within harmonized payment frameworks, access digital platforms, and leverage mobile payment solutions. Similarly, procurement officers require training in standardized protocols, system integration, and compliance procedures to manage transactions efficiently and securely. Capacity-building initiatives not only reduce operational errors and transaction delays but also foster confidence and trust among stakeholders, which is critical for sustained adoption and participation.

Leveraging fintech innovations and mobile money ecosystems provides a final pathway to enhance accessibility, efficiency, and transparency. Africa has experienced rapid growth in mobile money adoption, particularly in regions where traditional banking infrastructure is limited. By integrating standardized payment protocols with mobile wallets, fintech applications, and digital banking platforms, suppliers can receive payments quickly, securely, and directly, reducing reliance on intermediaries. Fintech solutions also support real-time transaction tracking, automated reconciliation, and seamless integration with enterprise resource planning (ERP) systems, enhancing transparency and operational efficiency. Moreover, emerging technologies such as blockchain and distributed ledger systems can be employed to create immutable, auditable payment records, further reinforcing trust and compliance. By combining technological innovation with standardized protocols,

African procurement networks can create scalable, interoperable, and inclusive payment ecosystems that accommodate SMEs, large corporations, and regional trade initiatives alike (Fasnacht, 2018; Asch *et al*., 2018).

Collectively, these pathways provide a strategic roadmap for overcoming the multifaceted challenges associated with supplier payment standardization. Regional public-private partnerships ensure coordination, investment, and policy alignment; regulatory sandboxes foster innovation while mitigating legal risks; capacity-building programs equip stakeholders to participate effectively; and fintech integration leverages existing digital ecosystems to enhance accessibility and efficiency. When implemented synergistically, these strategies can transform African procurement networks, reducing fragmentation, improving supplier trust, and accelerating regional trade integration. Ultimately, these pathways not only facilitate operational efficiency but also contribute to broader economic development by enabling inclusive, transparent, and resilient cross-border procurement systems.

2.6 Implications

The implementation of a standardized supplier payment model in African procurement networks carries significant implications for businesses, governments, and regional trade integration (Grobbelaar and Meyer, 2017; You *et al*., 2018). By harmonizing transaction protocols, deploying interoperable digital platforms, and ensuring regulatory compliance, the model addresses systemic inefficiencies, promotes transparency, and enhances the inclusivity and resilience of procurement ecosystems. These outcomes contribute not only to operational and financial benefits but also to broader economic development and regional cohesion.

For businesses, standardized supplier payment systems offer multiple advantages that improve operational efficiency, financial predictability, and strategic competitiveness. Reduced transaction costs and minimized foreign exchange spreads directly lower procurement expenditures, enabling companies to allocate resources more effectively across production, logistics, and investment activities. By accelerating payment cycles and automating reconciliation, businesses can improve cash flow management, reduce working capital constraints, and enhance the reliability of supply chains. Importantly, the predictability and transparency inherent in standardized payment frameworks foster greater trust between buyers and suppliers. Suppliers are more likely to commit to contracts when payments are executed consistently and traceably, which in turn strengthens relationships, improves negotiation dynamics, and ensures timely delivery of goods and services. Furthermore, businesses operating within harmonized payment networks can gain a competitive advantage in regional markets by demonstrating compliance, efficiency, and technological sophistication, positioning themselves favorably for cross-border procurement opportunities and partnerships.

For governments, the adoption of standardized supplier payment systems enhances procurement transparency, reduces opportunities for corruption, and improves fiscal efficiency. Public procurement constitutes a significant portion of national expenditures in many African countries, and traditional payment systems are often opaque, fragmented, and vulnerable to misuse. Standardization provides consistent reporting formats, digital audit trails, and real-time tracking, enabling regulatory authorities and oversight bodies to monitor transactions effectively. This transparency deters fraudulent practices, ensures that public funds reach legitimate suppliers, and supports accountability in public spending. In addition, streamlined procurement payments reduce administrative overhead for government agencies, allowing resources to be reallocated toward strategic priorities. Harmonized payment protocols also facilitate alignment with regional trade regulations, supporting compliance with initiatives such as AfCFTA and reducing the administrative burden of reconciling transactions across multiple jurisdictions. Overall, governments benefit from more efficient procurement processes, strengthened oversight, and enhanced public trust, reinforcing the integrity and credibility of public sector operations (Venter, 2016; Heald, 2018).

For regional trade, the model supports economic integration and enhances intra-African trade flows. Fragmented payment systems have historically

constrained cross-border commerce by introducing delays, increasing costs, and limiting access for small and medium-sized enterprises (SMEs). Standardized payment mechanisms, integrated within regional trade blocs such as AfCFTA, ECOWAS, and SADC, reduce these barriers by providing interoperable platforms, harmonized transaction protocols, and consistent compliance frameworks. This integration facilitates smoother financial flows across borders, enables efficient settlement of invoices, and supports regional value chains in sectors such as manufacturing, agriculture, and services. By improving the predictability, reliability, and transparency of supplier payments, the model enhances trust among businesses, financial institutions, and regulatory authorities, fostering a conducive environment for trade expansion. Additionally, the inclusion of SMEs through mobile-enabled payments and accessible digital platforms broadens participation in regional markets, promoting equitable economic growth and enhancing the competitiveness of African trade networks in the global economy.

In synthesis, the implications of implementing a standardized supplier payment model extend across multiple layers of the procurement ecosystem. Businesses gain reduced costs, improved supplier trust, and competitive advantages; governments achieve greater transparency, reduced corruption, and fiscal efficiency; and regional trade benefits from enhanced integration, improved liquidity, and expanded participation of diverse actors. Collectively, these outcomes contribute to the development of a resilient, inclusive, and efficient African procurement landscape, fostering sustainable economic growth and facilitating the objectives of regional trade initiatives. By addressing systemic bottlenecks, harmonizing regulatory frameworks, and leveraging digital innovations, standardized payment systems have the potential to transform procurement networks into transparent, accountable, and integrated platforms for regional economic development.

CONCLUSION

The fragmentation of supplier payment systems has long been a critical impediment to efficient and inclusive procurement networks across Africa. Diverse banking infrastructures, inconsistent regulatory frameworks, and reliance on manual processes have contributed to delays, high transaction costs, and limited access for small and medium-sized enterprises (SMEs). These inefficiencies undermine the performance of regional value chains, constrain intra-African trade, and erode trust among suppliers and buyers. The need for payment standardization is therefore urgent, not only to enhance operational efficiency but also to strengthen the broader economic integration objectives promoted by regional initiatives such as the African Continental Free Trade Area (AfCFTA).

The proposed model emphasizes harmonization, digital innovation, and inclusivity as central pillars for transforming African procurement networks. Standardized payment protocols, interoperable digital platforms, and unified settlement infrastructures provide the technological foundation for consistent, transparent, and reliable transactions. Integration with regional trade blocs ensures regulatory alignment, while mobile-enabled platforms and fintech solutions extend access to SMEs and informal suppliers, promoting equitable participation. By combining these elements, the model addresses both the operational and socio-economic dimensions of procurement, enhancing efficiency, reducing costs, and fostering trust across all stakeholders.

Looking forward, the vision is for a unified regional procurement payment ecosystem that seamlessly connects buyers, suppliers, financial institutions, and regulatory authorities across African markets. Such an ecosystem would facilitate real-time, secure, and auditable transactions, supporting the growth of regional value chains and the expansion of cross-border trade. By promoting transparency, accountability, and accessibility, standardized supplier payment systems can catalyze sustainable economic growth, improve competitiveness, and strengthen the resilience of African procurement networks. In essence, harmonized and digitally enabled payment infrastructures represent a strategic pathway toward inclusive, efficient, and integrated procurement systems, laying the foundation for a more prosperous and interconnected African economy.

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