



POLICY INITIATIVES, TRADE FINANCE, AND SMES SUSTAINABILITY FOR RESILIENT DIGITAL FINANCIAL ECOSYSTEMS IN AFRICA

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ABSTRACT

This paper examines the nexus between policy initiatives, trade finance mechanisms, and small and medium enterprise (SMEs) sustainability as key enablers of resilient digital financial ecosystems. Drawing insights from both developed and emerging economies, it explores how integrated financial and institutional policies can enhance SMEs access to trade finance and digital infrastructures while strengthening financial inclusion and systemic resilience. Anchored on the institutional theory which highlights the influence of regulatory and normative frameworks on financial behavior and compliance, the paper argues that policy coherence and firm capability development level are essential for achieving resilient digital financial ecosystem. Through a conceptual synthesis of multidisciplinary literature in finance, development economics, and policy studies, the paper develops a model linking inclusive policy reforms, sustainable SMEs growth, and financial system stability. It contends that effective policy frameworks encompassing regulatory harmonization, fintech integration, and credit guarantee mechanisms can mitigate systemic risks, expand access to finance, and foster innovation and sustainability of SMEs. The findings of the study underscore that resilient financial systems in the digital era depend not only on technological adoption but also on coordinated institutional reforms that bridge trade facilitation, financial inclusion, and SMEs sustainability. Ultimately, the paper concludes that aligning policy innovation with digital transformation is vital for promoting inclusive economic growth, SMEs resilience, and long-term financial system stability.

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1. Introduction

Small and Medium Enterprises (SMEs) constitute the foundation of productive economic activity and inclusive development across both advanced and emerging economies. Globally, they represent more than 95% of all business establishments and employ over 60% of the labour force, positioning them as critical drivers of innovation, structural transformation, and industrial deepening. Within Africa, SMEs account for over 80% of enterprises, functioning as engines of local value creation, entrepreneurial dynamism, and socio-economic resilience (Organisation for Economic Community & Development OCED, 2022). Despite their strategic importance, SMEs continue to face severe financing constraints most notably in accessing trade finance. Persistent challenges such as high credit-risk perception, inadequate collateral, weak contract-enforcement mechanisms, and burdensome regulatory and compliance requirements limit their integration into national, regional, and global value chains (Kalu-Mba, 2024). In Nigeria, evidence from the SMEDAN (2023) survey report underscores the significance of the SMEs sector to the economic growth, which contributes more than 45% to national GDP. Yet, these same structural bottlenecks restrict their growth potential, weaken export competitiveness, and undermine their overall contribution to sustainable development.

Trade finance, as a critical instrument of international commerce, facilitates over 80% of global trade flows by providing liquidity, mitigating cross-border risks, and enhancing transactional trust (Jayaweera, Bhaumik, & Liyanage, 2024 ; World Trade Organisation, 2023). Instruments such as letters of credit, export guarantees, factoring, and supply-chain finance remain indispensable for

SMEs, particularly in managing working capital and sustaining export activities (OECD, 2021). However, in Africa, SMEs face disproportionately high rejection rates for trade finance applications nearly 50% compared to less than 10% for large corporations, due to inadequate documentation, insufficient credit histories, and regulatory fragmentation (WTO, 2022). The global trade finance gap reached an estimated \$2.5 trillion in 2022, driven by trade wars, supply chain disruptions, and geopolitical uncertainty. This widening deficit has made international banks increasingly risk-averse, with particularly severe implication for emerging economies. According to World Trade Organisation, WTO (2023), SMEs in Africa face a staggering \$81 billion trade finance shortfall, exacerbated by fragmented regulatory frameworks and the ongoing decline of correspondent banking relationships. The erosion of correspondent banking relationships (CBRs), which constrains banks' ability to offer trade-related credit in major currencies, has further worsened SMEs' financial exclusion. Consequently, the continent's trade finance gap, continues to undermine SMEs competitiveness and integration into regional value chains (WTO, 2023).

Across Africa, persistent financial exclusion limits SMEs growth, economic participation, and overall development, with nearly 45% of adults in Sub-Saharan Africa unbanked and SMEs facing an annual \$330 billion financing gap (International Finance Corporation, 2023). Fintech innovations including mobile money platforms like M-Pesa, Flutterwave, Paystack, digital lending services using alternative data, crowdfunding platforms, digital savings, microinsurance, and blockchain-enabled cross-border payments have emerged as transformative mechanisms to bridge these

gaps and enhance SMEs sustainability. These innovations expand access to trade finance, reduce transaction costs, and provide working capital for previously underserved SMEs. However, the effectiveness of fintech in fostering SMEs resilience and inclusive growth is contingent on coherent policy initiatives, regulatory harmonization, and supportive institutional frameworks that enable interoperability, mitigate risk, and promote responsible lending practices (African Continental Free Trade Area 2023; World Bank, 2023).

Policy initiatives have emerged as pivotal in shaping an enabling financial and institutional environment that promotes inclusive access to trade finance. Policy and regulatory frameworks remain critical, as they must balance innovation, trade gaps, and financial stability (AfCFTA, 2023). Effective policy interventions such as the African Continental Free Trade Area credit guarantee schemes, and digital financial inclusion programs aim to harmonize regulations, improve collateral frameworks, and strengthen payment infrastructure. Moreover, the rapid digitalization of trade finance presents new opportunities for efficiency, transparency, and risk management. Technologies such as fintech platforms, blockchain, and mobile money are transforming trade finance operations by digitizing documentation, automating processes, and using alternative data for credit assessments (Chang, Luo, & Chen, 2019).

Yet, digitalization's benefits are not automatic, it depends on coherent policy frameworks that encourage interoperability, enhance digital literacy, and align technological innovations with SMEs operational realities (International Trade Centre, 2025; United Nations Development Programme, 2024). In essence, while SMEs

remain the backbone of Africa's economies, their capacity to thrive depends on how effectively policy frameworks, digital transformation initiatives and digital financial infrastructures are leveraged to unlock the full potential of trade finance as a development catalyst (ITC, 2025). Digital transformation has become a critical driver of financial inclusion and SMEs development across emerging regions, reshaping how firms access finance and integrate into global value chains. The rapid diffusion of internet-based technologies and artificial intelligence has revolutionized financial operations, enabling data-driven lending, efficiency, and customized financial solutions (Rampau, 2025). But, persistent digital and policy gaps continue to hinder SMEs in Africa and other developing regions, largely due to weak institutional frameworks, low digital readiness, and fragmented financial systems (World Bank, 2023; United Nations, 2023). Policies that strengthen digital infrastructure, enhance cybersecurity, and promote regulatory harmonization are therefore crucial for sustainable SMEs financing. While digitalization reduces transaction costs and expands market access, it also introduces risks such as information asymmetry, financial manipulation, and cyber threats that require proactive regulation and institutional oversight (Suprun et al., 2021; Feyen et al., 2021). Coordinated policy initiatives and strong digital infrastructure are central to transforming trade finance in sub-Saharan Africa. Mobile technology and fintech innovations continue to expand financial access and support SMEs participation in regional markets (Alfiana, et al. (2025). Financial institutions are increasingly integrating digital tools to enhance efficiency and broaden SMEs support (Feyen et al., 2021). These policy and digital shifts are strengthening the region's financial ecosystem and promoting

SMEs sustainability (Afreximbank, 2023). Well-developed financial systems and inclusive policy initiatives are essential to support SMEs sustainability, enabling access to affordable credit, collateral alternatives, and regulatory support. This paper therefore seek to investigate the interrelationship between policy initiatives, trade finance, and SMEs sustainability within digital financial ecosystems in Africa. It posits that trade finance acts as a catalytic link between financial policy and SMEs sustainability, serving as the transmission mechanism through which institutional and digital reforms translate into business resilience. The study situates its discussion within the context of Africa's persistent trade finance gap and regulatory fragmentation, emphasizing the need for policy coherence and innovation-driven financial inclusion. By integrating policy and operational reforms with digital financial infrastructure, African economies can foster a more inclusive trade environment that enhances SMEs sustainability, promotes cross-border trade, and strengthens long-term competitiveness.

2. Literature Review

Policy Initiatives and SMEs Sustainability in a Resilient Digital Financial Ecosystem

Policy and regulatory environments play a pivot role in shaping SMEs integration into both traditional and digital trade finance ecosystems. Evidence from West Africa countries illustrates how shallow domestic capital markets, weak credit information systems, and high collateral ratios limit SMEs participation in bank-intermediated trade finance (IFC, 2023). These findings reinforce broader arguments that institutional weaknesses, ranging from information asymmetries to inconsistent enforcement of commercial laws continue to marginalize SMEs from formal cross-border

financial services (AfDB, 2020). While the study of Andrew et al. (2024) emphasize firm-level inefficiencies, convergence with digital trade researches underscore that, structural and regulatory reforms are equally critical for addressing systemic barriers affecting SMEs sustainability.

Recent technological innovations particularly blockchain and artificial intelligence (AI) offer promising avenues for strengthening SMEs resilience within digital financial ecosystems, but their effectiveness is contingent on supportive policy frameworks adoption. Blockchain enhances transparency by generating immutable, time-stamped trade records, reducing fraud, and facilitating automated settlements through platforms like Pan-African Payment and Settlement System (PAPSS) (Umar, et al. 2024; Essien, Nwokocha, Erigha, & Akindemowo, 2019). Yet widespread adoption remains hampered by high connectivity costs, insufficient digital infrastructure, limited legal recognition of smart contracts, and regulatory uncertainty. The European Investment Bank (EIB, 2024) stresses the need for regulatory sandboxes, harmonized regional legislation, and capacity-building programs to ensure safe, inclusive, and scalable deployment of emerging technologies.

Strengthening Africa's digital financial ecosystem requires policy initiatives that deliberately address the structural constraints limiting digital financial development while supporting SMEs sustainability. Policy actions such as expanding broadband infrastructure, improving regional payment interoperability, enhancing financial literacy, and harmonizing cross-border digital regulations form the backbone of a robust digital financial environment (Afreximbank, 2020). These initiatives not only modernize the financial landscape but

also reduce operational bottlenecks that hinder SMEs from accessing digital payment systems, trade finance, and online market opportunities. Further studies on digital trade shows that targeted investments in technology adoption and human capital development are essential for ensuring that SMEs can fully benefit from these ecosystem improvements. When integrated into comprehensive policy frameworks, these interventions reinforce the digital financial ecosystem while enabling SMEs to build competitiveness, reduce vulnerability to financial exclusion, and achieve long-term sustainability in an increasingly digital global economy (Ayeeni, & Abba, 2024).

Trade Finance, SME Sustainability, and Digital Resilience in Africa

The role of SMEs in Africa's economic transformation is widely acknowledged, yet persistent barriers in accessing trade finance continue to constrain their competitiveness and long-term sustainability. Studies reveal that limited collateral, unreliable credit information systems, informality, and high perceived risk create structural financing gaps that prevent SMEs from obtaining affordable trade finance (Babajide et al., 2015; Álvarez et al., 2019). These financial constraints interact with environmental vulnerabilities such as climate shocks, resource depletion, and pollution which exacerbate operational risks and threaten business continuity for small firms. As a result, African SMEs face a dual sustainability challenge rooted in both financial exclusion and environmental exposure. Sustainable finance is a critical mechanism for addressing these challenges, with instruments such as green funding, climate finance, microfinance, and digital sustainability-linked loans supporting SMEs in adopting eco-efficient technologies and enhancing environmental compliance (Du & Cai, 2020; Oprisan et al., 2023).

Empirical findings from East Africa show that access to sustainability-oriented finance enhances innovation, market resilience, and adaptive capacity, enabling SMEs to absorb economic and ecological shocks more effectively (Vianelli, 2021). However, adoption remains uneven, driven largely by limited awareness, short-term profit motives, and inadequate institutional incentives (Chenari, 2023). These patterns indicate a persistent misalignment between SMEs financing needs and the availability of sustainability-linked financial instruments. Digital trade has emerged as a transformative force in global commerce, offering substantial economic benefits. It is widely acknowledged for reducing transaction costs and enabling the remote delivery of goods and services. Scholars highlight its role in fostering entrepreneurship, innovation, and new forms of job creation. Evidence from UNECA further suggests that digital platforms allow millions of SMEs to participate in international markets by integrating into e-commerce marketplaces that simplify logistics and supply chains (Hagos, 2022)

A notable gap in the literature concerns the underexplored role of venture capital (VC) in supporting sustainable SMEs growth, particularly within Africa's evolving digital financial ecosystem. According to Aassouli & Ahmed, 2023; Macchiavello & Siri (2022), green bonds and climate finance dominate scholarly attention while only fewer studies examine how VC especially when applied to digital and tech-driven SMEs can support resilience and long-term sustainability. VC provides not only risk capital but also managerial expertise and governance oversight, enabling SMEs to integrate sustainability with innovation and growth (Sahu & Panda, 2024). Evidence from sub-Saharan Africa suggests that VC

participation remains limited due to weak institutional capacity and underdeveloped financial markets (Muhairi & Nobanee, 2019; Vianelli, 2021), reinforcing the need for deeper inquiry into digital-era financing models. Recent developments in Africa's digital financial ecosystem present new opportunities for bridging long-standing trade finance gaps. Mobile money platforms, blockchain-based supply-chain finance, and AI-driven credit scoring offer solutions to structural constraints by enhancing transparency, reducing transaction costs, and mitigating information asymmetry (UNCTAD, 2025). These tools help SMEs build verifiable financial records and access alternative credit pathways, thereby increasing their inclusion in formal trade finance systems. However, scholars caution that despite the transformative potential of digital finance, its impact depends heavily on robust institutional frameworks, reliable infrastructure, and harmonized regulatory environments (Putrevu, & Mertzanis, 2023)

According to Taiwo, Temitope, and Edwin, (2016), persistent macro-financial challenges continue to exacerbate SMEs exclusion from trade finance markets. Stringent credit requirements, liquidity shortages, and fragmented financial systems, weak regulatory harmonization, and limited foreign exchange access further constrain banks' capacity to support cross-border transactions. Although Afreximbank provides over \$20 billion annually in trade finance, but these efforts has not eliminate structural gaps in trade financing in sub-sahara Africa (Afreximbank, 2023). Regional mechanisms such as PAPSS and the AfDB's Trade Finance Initiative show promise but suffer from inconsistent adoption and infrastructural bottlenecks. Additionally, high compliance costs, weak contract enforcement, and unreliable payment systems continue to marginalize

SMEs (Allen, Carletti & Cull, 2022). Collectively, there is a growing convergence between sustainable finance, trade finance reforms, and digital innovation as mutually reinforcing pathways for enhancing SMEs resilience. Therefore, an integrated analytical perspective that acknowledges the interplay between financial inclusion, trade finance and digital capability is necessary. Strengthening Africa's digital financial ecosystem through sustainable finance instruments, venture capital, and digital trade finance solutions offers a holistic route to supporting SMEs resilience and enabling meaningful participation in regional and global value chains.

Digital Transformation and Innovation in Trade Finance for SMEs Resilience

Digital transformation is increasingly reshaping Africa's trade finance landscape, offering new tools for reducing information asymmetry, enhancing transparency, and expanding SMEs access to credit. SMEs across the continent face some of the highest trade finance rejection rates globally exceeding 40% compared with less than 10% in advanced economies due largely to weak credit information systems, limited collateral, and the erosion of correspondent banking relationships (AfDB, 2023). These structural deficiencies reduce banks' ability to assess SMEs creditworthiness and extend affordable financing. Digital currencies offer an alternative for bridging this persistent financing gap. Mobile money ecosystems such as M-Pesa demonstrate how digital transaction histories create verifiable financial footprints that lenders can use to assess creditworthiness among previously excluded SMEs (Jack & Suri, 2016). In addition, blockchain-enabled digital currencies enhance documentation integrity, mitigate double financing, and reduce fraud capabilities (Deloitte, 2021). Initiatives such as AfCFTA Digital Payment and Settlement

System (DPSS), and UNECA's regional digital frameworks underscore the potential of regional digital currencies for seamless intra-African payments without reliance on external correspondent networks (ADFI 2022; UNECA, 2020). However, the deployment of these mechanisms remains constrained by high transaction costs, limited SMEs documentation readiness, and institutional capacity gaps within financial institutions (AfDB, 2020). Weak regulatory coordination and underutilized regional guarantees further limit the ability of African banks to integrate digital currency solutions effectively.

Furthermore, mobile money platforms, fintech-enabled supply chain financing, e-invoicing systems, digital factoring, and interoperable payment solutions such as PAPSS have improved SMEs access to working capital and cross-border liquidity (Feyen et al., 2021). These technologies reduce transaction costs, accelerate settlement cycles, and enable SMEs to build alternative digital credit profiles based on cashflow data rather than fixed collateral, addressing long-standing financial inclusion barriers (WTO, 2023). Despite these advances, the adoption of digital trade finance tools is uneven. There are limitations in digital literacy, inconsistent regulatory frameworks, cybersecurity risks, and fragmented digital infrastructure continue to restrict the full potential of digital innovation (Suprun et al., 2021). Africa's trade finance landscape still reflects deep structural constraints: intra-African trade has remained historically low, and SMEs despite constituting over 80% of enterprises experience more than 50% rejection rates for trade finance due to high compliance costs and insufficient documentation (Demirgüç-Kunt et al., 2018; Africa Trade Report 2022; WTO, 2021). These financing gaps, estimated at over US\$81 billion annually, force many SMEs

into cash-in-advance arrangements or risky open account systems, undermining resilience and long-term competitiveness (African Development Bank Group, 2022). Long-term impact depends on coordinated regulatory harmonization, capacity-building programs, and investments in digital infrastructure (WTO 2023). Studies by Afreximbank (2020) highlight that without investments in broadband access, affordable connectivity, digital literacy, and predictable regulatory frameworks, SMEs cannot fully leverage digital trade opportunities.

SMEs Sustainability and Resilience in the Digital Economy

The sustainability and resilience of SMEs in Africa's digital financial ecosystem is hinge on their ability to leverage digital finance, integrate into modern supply chains, and participate competitively in emerging regional and global value chains. Although SMEs account for more than 80% of enterprises and remain central to production and employment, their sustainability is undermined by persistent structural constraints across Africa's financial and digital ecosystems (SMEDAN, 2023). Weak credit information systems, underdeveloped collateral registries, fragmented regulatory frameworks, and limited digital literacy as core barriers preventing SMEs from fully benefiting from digital trade finance and e-commerce platforms (Carvajal & Didier, 2024). These barriers not only limit access to finance but also impede SMEs' ability to digitize operations, integrate into supply chains, and withstand external shocks, thereby weakening long-term resilience. Operational deficiencies compound these structural limitations. Many SMEs operate informally without verifiable financial statements, reliable transaction histories, or standardized governance structures factors that heighten their perceived risk and restrict

participation in formal financial systems (AfDB, 2024; Muchena, 2019). This exclusion has direct consequences for resilience, as firms lacking access to credit struggle to invest in digital tools, inventory, logistics, and innovations that enhance competitiveness under the AfCFTA. Oji (2025) argues that unless Africa strengthens its digital financial architecture through reforms in documentation, credit scoring, and interoperability, SMEs will remain unable to scale sustainably within an increasingly digital trading environment.

Although trade finance is essential for liquidity management, risk mitigation, and cross-border transactions, SMEs in Africa experience rejection rates surpassing 50%, compared to less than 10% for multinational firms (Afreximbank, 2020). ICC (2023) attribute this disparity partly to systemic biases and partly to methodological limitations of global datasets, including fragmented reporting through ICC Trade Registers. These weak datasets obscure the true scale of SMEs exclusion and hinder the design of tailored digital solutions. Contrary to trends in emerging markets where firms increasingly rely on open-account digital instruments, African SMEs face high transaction costs, infrastructural deficits, and regulatory inconsistencies that constrain adoption (Carvajal & Didier, 2024). Therefore, there is need for integrated policy and financial reforms rather than isolated digital solutions. Strengthening collateral registries, harmonizing regulatory frameworks, expanding credit information bureaus, and deploying alternative credit-risk models such as AI-powered analytics, mobile-transaction histories, blockchain-backed records, and psychometric scoring are widely recommended to enhance SME sustainability (Oji, 2025; Afreximbank, 2020).

Information Asymmetric Theory

The theory was developed by Stiglitz and Weiss (1981). It provides a robust analytical lens for understanding the persistent financing constraints confronting SMEs in sub-Saharan Africa. The theory posits that borrowers generally possess more accurate knowledge of their financial health, repayment intentions, and operational risks than lenders, creating an informational imbalance that often leads to credit rationing. In the African context, this asymmetry is particularly pronounced among SMEs, which frequently operate informally, lack verifiable financial statements, maintain minimal credit histories, and often cannot provide sufficient collateral (Afreximbank, 2020; Hussaini, Gubio & Maidarasu, 2025). As a result, financial institutions perceive SMEs lending as high-risk, leading to conservative lending practices that disproportionately favour large, established firms while excluding smaller enterprises from trade finance opportunities. This dynamic directly constrains SMEs growth, operational resilience, and their capacity to participate in regional and global trade networks. Digital financial innovations, including AI-driven credit scoring, blockchain-enabled transaction verification, and mobile-based financial records, can reduce information gaps between lenders and SMEs (Muchena, 2019; Raji et al., 2024). Fintech platforms allow SMEs to generate verifiable transaction histories and alternative credit data, providing lenders with credible insights into repayment capacity, operational stability, and trade performance. These digital mechanisms operationalize the theory by transforming previously opaque SMEs activities into measurable and trustable financial signals, reducing perceived risk and encouraging inclusion in trade finance.

The theory also informs policy design and institutional interventions that promote SMEs sustainability. Public-private credit

guarantee schemes, trade credit insurance, and centralized credit registries are policy instruments that mitigate lender risk and incentivize SMEs lending, consistent with the asymmetric information framework (Afreximbank, 2020; IFC, 2023). By embedding these mechanisms within a digital financial ecosystem, where data-driven decision-making, real-time reporting, and interoperable platforms are standard governments and development partners can enhance the quality, continuity, and inclusiveness of SMEs financial relationships. This directly supports SMEs resilience, enabling small enterprises to adopt sustainable practices, and manage operational risks. This theory also provides a conceptual rationale for why SMEs are systematically excluded from trade finance and how digital and information transparency can address this exclusion. The theory underscores that bridging Africa's trade finance gap estimated between US\$81 billion and US\$331 billion requires more information transparency from SMEs to the lenders of capital. Integrated information transparency with policy initiatives and combined technological innovation can put SMEs in sub- Sahara Africa on the right track of prosperity, sustainable growth, financial inclusion, and regional economic integration.

2. Empirical Review

Sustainability and resilience among African SMEs in a digital financial ecosystem require more than access to credit, they need digital capacity, risk-management tools, and supply-chain integration. Empirical evidence shows that SMEs possessing digital transaction histories and real-time cash-flow data are more likely to build reliable credit profiles and survive shocks (AfDB, 2024; Muchena, 2019). However, adoption of such digital tools is constrained by limited digital literacy, weak infrastructure, and insufficient

policy support for capacity building (WTO , 2025; Carvajal & Didier, 2024). Meanwhile, fintech and venture-capital flows in Africa remain heavily biased toward payment systems, leaving trade-finance innovations such as trade-credit insurance, blended finance, and contingency credit lines underdeveloped (Patra, Tudu, & Pareek, 2025). Without policy reforms that encourage diverse digital financing instruments, SMEs risk being confined to short-term liquidity solutions rather than achieving long-term resilience in global value chains. The complex interplay between policy initiatives, trade finance, and SMEs sustainability in shaping Africa's digital financial ecosystem reveal stark disparities in trade finance access, product diversity, and institutional capacity and policies. In countries with more mature financial ecosystems like Vietnam and Mexico, trade finance remains concentrated among large firms, leaving SMEs underserved (IFC, 2025). Across all regions, systemic barriers such as high compliance costs, weak risk mitigation tools, and preference for low-risk clients persist, underscoring that financial maturity alone does not ensure inclusivity (IFC, 2023). These findings indicate that while financial and digital infrastructure are necessary, they are insufficient without policy interventions that explicitly target SMEs inclusion.

The impact of trade finance on SMEs performance is well-documented, emphasizing its role as a strategic enabler of regional and global integration. African Development Bank (AfDB) linked studies show that in 30 African countries from 2013–2018, manufacturing firms with greater access to finance were significantly more likely to export at higher intensities, particularly in countries with deeper financial institutions (Andrew et al. 2024). Similarly, Mazorodze (2024) finds that access to bank finance, combined with direct

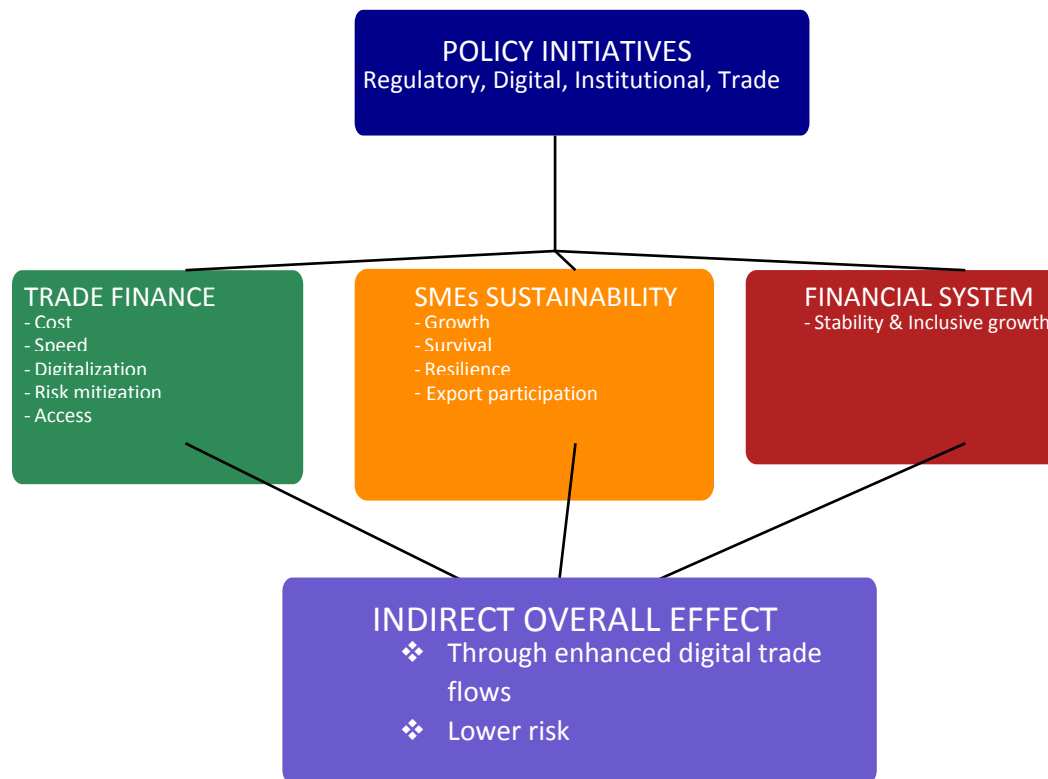
or hybrid export trade channels, leads to higher exports for SMEs, whereas reliance on indirect channels reduces trade participation. Evidence also suggests that intra-Africa trade efficiency improves when exporters have better financial access, reinforcing that trade finance gaps constrain regional integration. Despite these insights, SMEs remain marginalized globally, with trade finance instruments such as supply chain finance, factoring, and digital trade platforms underutilized due to structural inefficiencies, inadequate digital adoption, and high transaction costs (Afreximbank, 2025).

There is critical need for targeted policy reforms and capacity-building measures to expand SMEs access to finance, reduce exclusion, and enhance resilience. Country-level policy initiatives further illustrate the potential and limits of regulatory frameworks in promoting SMEs sustainability. Ghana, for instance, has advanced digital trade regulation through ratification of the WTO Trade Facilitation Agreement (TFA) and adoption of GATS commitments in telecommunications, financial, and maritime services, yet gaps remain in IT goods, distribution, and postal services (World Bank 2023). The country's Data Protection Act (2012) and Cybersecurity Act (2020) establish foundational safeguards, but unclear cross-border data transfer rules and policies create uncertainty for SMEs engaging in international digital trade (WTO, 2023). Technical assistance and advisory programs from the World Bank and WTO aim to strengthen capacity, e-commerce laws, consumer protection, e-invoicing, and platform liability frameworks, highlighting the importance of policy support in enabling SMEs to leverage digital trade opportunities (WTO, 2023). Therefore, SMEs growth in Africa's digital economy requires the integration of robust policy initiatives,

improved trade finance access, and capacity-building interventions to foster resilience, competitiveness, and participation in regional and global value chains.

In countries with clear digital-finance strategies such as digital ID systems, payment interoperability, and data-protection regimes SMEs adopt e-payments and digital credit more readily. By contrast, in jurisdictions with fragmented regulation or weak enforcement, fintech penetration lags, and digital policy initiatives fail to translate into substantial financial-sector deepening (Edo, 2025; Carvajal & Didier, 2024). Empirical trade-finance evidence underscore that SMEs continue to suffer from limited access, despite growing digital infrastructure. According to Afreximbank (2025), many SMEs are rejected for trade finance because they lack verifiable credit histories, offer limited collateral, or submit incomplete financial documentation. When digital platforms such as e-invoicing, blockchain-enabled supply-chain finance, and electronic you're your customer (KYC) are deployed under favorable institutional conditions, they demonstrably lower information asymmetry, reduce documentation delays, and cut transaction costs, thereby improving SMEs access (Afreximbank, 2025).

Conceptual Model



3. Methodology

This study adopts a structured systematic literature review (SLR) approach to conceptually examine the relationship between policy initiatives, trade-finance digitalisation, and SMEs sustainability within sub-sahara Africa's emerging digital financial ecosystem. The review synthesizes evidence from peer-reviewed journals, practitioner reports, and institutional publications sourced from databases such as Springer Link, Science Direct, MDPI, Scopus, and Emerald Insight among others. Guided by explicit inclusion and exclusion criteria, the review focused on studies published between 2011 and 2025 that addressed policy initiative, trade finance and

SMEs sustainability in Africa. Extracted evidence was thematically analyzed to identify patterns across technological enablers, regulatory developments, institutional readiness, and ecosystem outcomes on SMEs sustainability. Although this conceptual methodology provides a comprehensive and structured synthesis of theoretical and empirical insights, its reliance on secondary sources limits causal inference, however, it offers a rigorous foundation for future empirical studies and policy analysis in technologically and financial environments in Africa.

4. Results and Discussion

The study reveals that policy initiatives are foundational to the success of digital trade finance and SMEs sustainability in sub-Saharan Africa. Drawing from the

Information Asymmetry Theory, well-structured regulatory frameworks including fintech licensing regimes, SMEs credit guarantee schemes, data protection laws, and regulatory sandboxes play a critical role in reducing information gaps, building trust, and enabling SMEs to access finance. However, institutional fragmentation across national jurisdictions and uneven implementation of multilateral initiatives, such as the World Bank Digital Trade for Africa program and AfCFTA's proposed fintech passporting framework, these limit scalability and regional integration. Without harmonised policies, interoperable digital systems, and regulatory alignment, the potential of digital finance to bridge Africa's trade finance gap remains under-realised, underscoring the urgent need for coordinated national and regional action. The findings further indicate that digital trade finance instruments such as e-invoicing, electronic bills of lading, factoring, and supply chain finance platforms can significantly strengthen SMEs liquidity, working capital management, and participation in regional and global value chains. AI-driven credit scoring and alternative data sources enable access to previously excluded SMEs, fostering financial inclusion and resilience. However, adoption is constrained by infrastructural deficiencies, low digital literacy among SMEs, and the concentration of venture capital investment in payments rather than trade finance innovations.

The presence of ecosystem enablers, including reliable internet networks, digital identity systems, open APIs, and interoperable payment systems, directly correlates with higher fintech adoption, demonstrating the interdependence of technological capability and organizational readiness. The literature and empirical evidence collectively suggest that sustainable SMEs growth requires more than

liquidity; it depends on integrated digital, institutional, and policy interventions that support governance, risk management, and ecosystem development. Finally, the study establishes that strengthening local digital finance innovation can enhance financial inclusion, SMEs resilience, and broader sustainable development. Yet progress is hindered by gaps in financing beyond payments, uneven regulatory coordination, limited infrastructure, and the lack of digital solutions. Addressing these challenges through targeted policy initiatives, capacity building, and stakeholder collaboration can expand SMEs access to digital trade finance, improve operational efficiency, and foster domestic-level innovation. The study posited that attaining an inclusive, resilient, and sustainable economic growth for SMEs digital financial environment in sub-Saharan Africa, is contingent upon coherent policy frameworks, robust institutional support, and comprehensive ecosystem development.

5. Conclusion

Trade finance in sub-Saharan Africa remains under-digitised, creating persistent barriers to inclusive growth, particularly for SMEs. The study highlights that policy initiatives, digital infrastructure, and financial innovation are interdependent factors for enhancing SMEs sustainability and resilience. Empirical and theoretical evidence shows that well-designed regulatory frameworks including fintech licensing regimes, SMEs credit guarantee schemes, data protection laws, and interoperable digital identity systems can reduce information asymmetry, build trust, and enable SMEs to access digital finance and participate in regional and global value chains (Umar, Baita, Amadou, & Abduh, (2024). However, fragmented implementation, infrastructural gaps, and limited capacity at national and regional levels constrain the potential impact of

digital trade finance, emphasizing the need for harmonized regulatory approaches and cross-border scalability under initiatives such as AfCFTA and the WTO Digital Trade protocols (WTO, 2024). To advance SMEs participation, policies must prioritize regulatory harmonisation, fintech passporting, and the establishment of SMEs-focused trade finance instruments, including blended finance, credit guarantees, and contingency credit lines. Investments in digital infrastructure, internet connectivity, and national ID systems are critical for enabling interoperable payment systems, e-invoicing, electronic KYC, and other digital trade finance platforms (Afreximbank, 2025). Complementary measures, such as expanding credit bureaus and alternative data frameworks, strengthen SMEs credit profiles, while capacity building in digital literacy, cybersecurity, and e-commerce enhances SMEs readiness to leverage these tools effectively (Patra, Tudu, & Pareek, 2025). Public-private partnerships, concessional financing, and fiscal incentives, such as tax reductions on ICT equipment, can help lower adoption costs and foster digital inclusion (Faiz, Viet & Masli, (2024)

Investing in firm-level competitiveness, particularly through recruitment, training, and digital skills development, is essential to support the adoption of digital trade and finance solutions. SMEs can leverage these capabilities to improve operational efficiency, cash flow management, and market participation, even in challenging business ecosystems. Policies should thus incentivize workforce digital capacity building, while creating regulatory and infrastructural environments conducive to scaling digital adoption sustainably (Mansouri, & Momtaz, 2022). A comprehensive digital regulatory framework is also central to SMEs sustainability. Legal recognition of electronic contracts, e-

signatures, and authentication, alongside safeguards for personal data, online consumers, and cybersecurity, enhances trust in digital trade. At the same time, regulations should balance trade facilitation with safeguards, avoiding overly restrictive measures such as mandatory domestic cloud use or cumbersome cross-border data transfer rules, which can inflate costs and reduce market efficiency (World Bank, 2023). Aligning national regulations with regional frameworks, such as AfCFTA Digital Trade Protocol and WTO e-commerce agreements, ensures consistency, predictability, and trust in digital finance for SMEs.

Emerging technologies, including AI and blockchain, offer transformative potential for trade finance by automating credit scoring, enhancing verification, improving settlement speed, and increasing cross-border transparency. Initiatives such as PAPSS, M-PESA, and Flutterwave illustrate practical applications of these technologies in Africa, contingent on coherent policy, robust infrastructure, and capacity building. In conclusion, sustainable SMEs growth in sub-Saharan Africa's digital economy requires an integrated approach combining policy reform, infrastructure development, digital literacy, and financial innovation. By strategically embedding fintech solutions within trade finance ecosystems, enhancing cross-border payment infrastructure, and supporting SME capacity development, African countries can transform digital finance into a robust engine for inclusive growth, regional economic integration, and resilience in the face of structural financial challenges. To ensure long-term sustainability, African governments must integrate digital finance policies with SMEs support programs, capacity-building initiatives, and inclusive trade finance reforms. Ultimately, aligning digital transformation with coherent policy

initiatives is essential to foster resilient, competitive, and sustainable SME ecosystems in sub-Sahara Africa's evolving financial landscape.

Implications of the Study

The findings of this study carry important policy, theoretical, and practical implications for advancing SMEs sustainability through digital trade finance in sub-Sahara Africa. From a policy perspective, there is a clear need to prioritise regional interoperability, cross-border payment integration, and trade finance guarantee schemes. Fintech innovation should be aligned with broader trade facilitation objectives rather than narrowly focusing on payment systems, ensuring that SMEs can access digital trade finance efficiently and inclusively. Policymakers should also emphasize data governance, cybersecurity, and the development of inclusive digital innovation ecosystems to translate digital transformation into equitable and resilient SMEs growth across the continent. Theoretically, the study reinforces the value of integrating information asymmetric frameworks to explain digital finance adoption. It also highlights the need for cross-country empirical validation to assess how these frameworks operate under different African contexts in 2025 and beyond.

Practically, financial institutions including banks, fintechs, and development finance institutions (DFIs) are encouraged to co-create SMEs-oriented digital trade finance products that leverage alternative data and AI-driven credit scoring. Integrating trusted digital identity systems can simplify KYC and AML compliance, reduce transaction costs, and lower barriers to access. Moreover, SMEs require capacity-building support to develop digital literacy, risk management skills, and familiarity with

innovative financial instruments to fully benefit from these interventions. Policy initiatives with broad applicability such as cross-border data flows, electronic invoicing, online consumer protection, and measures facilitating cross-border transactions are essential for enabling SMEs participation in digital trade and are ranked as having the highest impact. Only a few countries, such as Nigeria and Senegal, have made moderate progress in regulating cross-border data flows. The study underscores that strengthening the digital trade financial ecosystem requires coordinated policy actions, regulatory harmonisation, and capacity-building initiatives. By addressing both technical and institutional barriers, African countries can foster a resilient and inclusive digital trade environment that supports SME sustainability, regional integration, and broader economic development.

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