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Evaluating the Effectiveness of Digital Trade Payment Systems in Facilitating Export Growth in Emerging Economies

By Author(s):

Ibrahim Abdullahi Yaro
The Institute of International Trade and Development, Faculty of Social Sciences,
University of Port Harcourt, Rivers State Nigeria

Abstract

This paper highlights the role of digital trade payment systems in improving the export growth of emerging economies. Drawing on a comprehensive review of technological innovations, including mobile wallets, blockchain-based platforms and regional real-time settlement systems, the paper explores how these digital platforms reduce transaction costs, improve settlement speed and foster financial inclusion. Empirical evidence from countries such as Nigeria, India and Brazil shows that the widespread adoption of digital payment platforms is correlated with increased export businesses, particularly among micro and small enterprises. The analysis highlights key theoretical frameworks, transaction cost economics, network effects and institutional interoperability that explain the mechanisms linking digital payments to export expansion. Additionally, the study identifies persistent challenges, including cyber security risks, regulatory framework, infrastructure gaps and high compliance costs, which hinder the full realization of potential benefits. Policy implications emphasize the importance of harmonized regulations, interoperability standards, digital identity systems and public-private partnerships to unlock the full trade-facilitating potential of digital payment systems. Overall, the findings confirm that strategic investments and policy actions are crucial for leveraging digital trade payment systems to achieve sustained, export growth in emerging markets.

Keywords

Digital, Emerging, Export growth, Facilitating, Payment systems, Trade.

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1. INTRODUCTION

Global trade has increasingly relied on efficient and secure digital payment systems, especially in emerging economies, where improved infrastructure can substantially enhance export performance. The product of digital technological innovations has completely transformed the prospects of the payment system, drifting towards the e-world (Khan, et al 2017). Specifically, modern technology has changed the traditional cash-based transactions into a well-organized and effective payment system synonymous with digital payment, electronic payment, online payment, a cashless payment system that is devoid of 'cash and carry' syndrome (Marafa, 2022).

Between 2014 and 2021, the share of adults using digital payments in emerging and developing economies rose from 35 percent to 57 percent a shift linked to a 0.10 percentage point increase in annual per-capita GDP growth over two years and a 0.06 percentage point decline in informal employment (Aguilar, Frost, Guerra, Kamin, & Tombini, 2024). These developments highlight the pivotal role of digital trade payment systems in mitigating frictions, promoting financial inclusion and ultimately driving export growth in emerging economies.

In addition to its user-friendly design, transparency, convenience, speed and security digital payment systems have a significant number of economic benefits which include: promoting financial inclusion, discouraging robbery and cash related crimes, increasing the effectiveness of the financial markets and system at large, boosting consumer sureness and eases trade, bringing operational competence, enhanced income and lesser business operating cost (Chandel, & Chandel, 2025). The expansion of digital trade payments is closely tied to a significant increase in export profitability. An efficient payment system facilitates the exchange of goods and services, as well as the transfer of resources.

This study therefore examines the effectiveness of digital trade payment systems in facilitating export growth in emerging economies. Specifically, the objective of this study is to investigate the impact of various digital trade payment platforms on export growth in emerging economies. Following this introduction, Section Two is the literature review which provides a review of the conceptual clarification and theoretical perspective, Section Three is the methodology. Section Four outlines the adoption and impact of the digital trade payment system, the challenges confronting the digital trade payment system and way forward and Section Five concludes the paper.

2.0 LITERATURE REVIEW

2.1 Conceptual Clarifications

Digital Trade Payment Systems

Digital Trade Payment Systems involve electronic platforms and infrastructures, such as mobile wallets, real-time gross settlement systems, QR-code payments, e-wallets, and even blockchain-based settlements, used to facilitate domestic and cross-border trade payments in digital form. These systems encompass mobile payments, contactless NFC, internet

payments, e-cash and cryptocurrencies, often integrated with modern fintech services (Ganzha, 2025). In emerging economies in particular, such systems offer lower-cost, faster and more transparent payment alternatives to traditional banking channels. These innovations demonstrate the potential of digital trade payment systems to facilitate international trade, mitigate currency risk and increase participation in export markets.

Export Growth

Export Growth refers to the increase in the volume, value and complexity of goods and services sold abroad by an economy over time. Export growth is both an effect and cause of emerging economy integration into global value chains, industrialisation, and innovation. Those countries that focus on export-led growth by leveraging intellectual capital, product sophistication, and supply chain diversification are able to achieve stable economic growth (Mufti, & Ali, 2024). Brazilian regional evidence shows that export complexity, though uneven across regions, is central to economic prosperity. However, industrial complexity better accounts for growth (Cardoso et al., 2023). Export growth enables economies to accumulate foreign exchange, invest in productive capabilities and escape middle-income traps by cultivating higher-value exports and innovation-intensive industries.

Emerging Economies

Emerging Economies are countries characterized by lower income levels, fast economic growth and a transition toward market-based systems. According to Hoskisson et al. (2000), emerging economies are "low-income rapid-growth countries using economic liberalization as their primary engine of growth". This definition is widely adopted in international business and entrepreneurship literature. Examples include China, India, Brazil, Russia, Mexico, Indonesia and Nigeria. These are countries with rapid industrial transformation, structural change and evolving regulatory frameworks. These economies are in line with possibilities for sustainable growth with institutional frailties, such as weakly developed legal infrastructures and weak enforcement of property rights (Naudé, et al 2016). Their diversification and entry into world trade, along with their growing contribution to world growth, point to their enhanced visibility in the multipolar economic order.

2.2 Theoretical Perspectives on Digital Trade Payment Systems and Export Development

Electronic trade payment systems is reshaping the economic logic that governs export transactions; several complementary theoretical lenses help explain the hows and the whys these systems influence export growth in emerging economies. Transaction Cost Economics (TCE) theory predicts that reductions in the costs of negotiating, monitoring and enforcing transactions will shift activity toward market exchange, thereby expanding trade volume (Nagle et al., 2020).

Network theory and two-sided market frameworks emphasize indirect network effects where the value of a payment's platform grows with both merchant and buyer adoption, creating positive feedback loops that accelerate market depth and cross-border linkages (Parker & Van

Alstyne, 2005). Platforms that secure critical mass lower search and matching costs for foreign buyers seeking suppliers and facilitate platform-mediated export channels (marketplaces, digital storefronts) that routinize payments and logistics.

Institutional and regulatory theories underscore that the effectiveness of payment innovations depends on governance, legal frameworks and interoperability. The World Bank/WTO/IMF joint analyses show that the gains from digital trade are conditional on secure cross-border data flows, electronic payment rules and interoperable AML/KYC regimes (Sanusi, 2024). The Pan-African Payment and Settlement System (PAPSS) is a good example of how institutions can shape outcomes. According to modelling, PAPSS could reduce cross-border payment costs by 40 to 50% and boost intra-African trade by 10 to 30% if regulations are aligned (Sangwa et al., 2025). This shows that the ability of institutions to adapt is key to turning lower transaction costs into real export growth.

Diffusion-of-innovation theory (Rogers) and behavioural adoption models illuminate heterogeneous uptake across firms and regions. Factors such as relative advantage, compatibility, complexity, trialability, and observability influence a firm's adoption of digital payments (Kedia, et al 2024). Empirical district-level studies from India reveal adoption clusters associated with merchant density, smartphone penetration and trust in platforms; regions with higher adoption exhibit faster entry of micro-exporters into online marketplaces. Hence, diffusion dynamics explain why payment system upgrades produce uneven export outcomes across geographies and sectors. For example, global initiatives to lower correspondent banking costs and to foster regional rails (e.g., PAPSS) create measurable trade facilitation multipliers when paired with trade logistics improvements (Sangwa et al., 2025; IMF et al., 2023).

In synthesis, three theories suggest causal channels linking digital payment systems to export growth in emerging economies: (1) transaction-cost reductions that expand market participation (TCE), (2) network effects that scale platform-based export channels (two-sided market theory) and (3) institutional mediation where regulatory harmonisation and interoperability determine realized gains (institutional theory). Diffusion and behavioural theories explain adoption heterogeneity, while trade-facilitation perspectives show how settlement speed and liquidity bolster exporters' capacity to scale.

2.3 Adoption and Utilization of Digital Payment Platforms in Emerging Economies

The adoption and utilization of digital payment platforms in emerging economies have accelerated sharply over the last decade, driven by smartphone penetration, regulatory innovation and substantial private-sector investment. Brazil's instant-payment system Pix likewise achieved mass adoption: by February 2025 roughly 165 million users had registered and Brazil recorded single-day highs exceeding 250 million Pix transactions on peak days, demonstrating how cheap, instant rails can supplant card and cash usage (Gomes, & Silva, 2024). These country cases demonstrate that well-designed, public-orchestrated rails and open-access models can deliver speedy diffusion, with population coverage rates exceeding 60–75% within a few years of launch.

In Africa, mobile-money platforms and fintech rails have driven growth in inclusion and payments. Botta, estimated Africa's domestic electronic-payments revenue at roughly US$15 billion in 2020, from approximately 47 billion transactions totalling just over US$800 billion in value and forecasted domestic e-payments revenue to approach US$40 billion by 2025 as volumes and monetization improve (Botta, et al 2022). The World Bank's Global Findex updates further confirm a marked rise in account ownership and digital payment use: global account ownership is expected to reach approximately 79% of adults by 2025, with substantial gains in developing economies driven by mobile money and fintech (World Bank, 2025). Cross-border and regional rail systems are emerging but face increased complexity. These forecasts underscore that while domestic rails scale quickly, realizing trade-related gains requires institutional alignment and correspondent-bank substitution.

Utilization levels vary by firm size, industry, and region. Most micro and small exporters use digital payments wherein platforms are connected directly to e-commerce marketplaces and settle instantly reducing the working capital pressures. In India, it is found that micro-sellers who start to receive digital receipts have a probability to increase their online business by a double-digit (percentage) within one year (Ravinder, 2024). By contrast, exporters in sectors that require complex trade finance, such as those involving large manufactured goods and commodities, continue to rely on traditional instruments. However, real-time rails and API-based reconciliation are beginning to shorten payment cycles and reduce reliance on costly correspondent banking.

Barriers continue to exist. Interoperability gaps, AML/KYC frictions and foreign-exchange corridors limit cross-border use; agent network vulnerability and last-mile reachability limit rural uptake; and monetization models continue to pressure profitability, especially where regulators have capped fees (Ferguson, et al 2019). Nevertheless, evidence suggests that where there was open access facilitated by regulators and public and private investment in rails and digital ID, adoption soared and utilization translated into measurable economic benefits, including faster settlement, lower transaction costs and expanded market access for SMEs (Narendra, 2020). The evidence, therefore, suggests that adoption, combined with purposeful institutional design, is jointly necessary to convert payment-platform scale into sustained export growth.

3.0 DIGITAL TRADE PAYMENT SYSTEMS AND EXPORT GROWTH

Electronic payment systems for trade lower the cost of transactions, speed up settlement and increase trust between buyers and sellers, processes that directly affect the competitiveness of exporters and their capacity for growth (Islam, 2024). Empirical research proves that even a relatively modest increase in the usage of digital payments has concrete macroeconomic and microeconomic implications. The BIS cross-country analysis finds that additional one percentage point use of digital payments is associated with an increase in GDP per capita growth of 0.10 percentage points in subsequent years, along with declines in informality freeing up resources to engage in exports in the formal sector (BIS, 2024). Those macro effects matter for exporters because faster GDP growth, formalisation and improved financial intermediation expand demand and access to working capital for trade.

At the firm level, real-time rails and integrated payment APIs shorten cash-conversion cycles, reducing reliance on expensive trade finance. For micro and small exporters, instant settlement via platforms like India's UPI has lowered receipts-to-liquidity lags and enabled reinvestment into production and digital market access; NPCI reports that UPI handled roughly 16–19 billion monthly transactions in 2024–2025, with monthly values in the trillions of rupees, indicating the scale at which merchant receipts can be monetised for trade (Ming, 2025). Studies of merchant behaviour show that micro-sellers receiving digital payments expanded their online sales by double-digit percentages within a year, which, in aggregate, supports export-oriented micro-export growth.

Regional rails also indicate signs of trade effects. The Pan-African Payment and Settlement System (PAPSS) attempts to reduce intra-African cross-border payment charges by about 40–50 percent, with Afreximbank modelling estimating potential intra-African trade growth of 10–30 percent if PAPSS grows and regulatory harmonisation occurs (Afreximbank, 2024; Sangwa et al., 2025). Removing Cutting FX and correspondent-bank frictions is especially significant for small and medium exporters for whom a 10 percent cut in payment costs can be a big deal to price competitiveness in neighboring markets.

Mass national experiences are both direct and indirect. Brazil's Pix, launched in 2020, had population penetration rates of over two-thirds in a few years and processed daily records of over 250 million transactions, displacing costly card and cash flows and thus lowering the cost of payment for merchants (Duarte, et al 2022). Lower merchant fees and instant settlement improve exporters' margins on low-value, high-frequency cross-border e-commerce shipments, enabling new exporters to enter regional and global value chains.

Nevertheless, the translation from payments diffusion to export growth is conditional. Institutional readiness regulatory frameworks for AML/KYC, cross-border data flows, currency corridors and interoperable technical standards mediates outcomes (IMF et al., 2023). The IMF/World Bank literature emphasises that cross-border interoperability and correspondent-bank substitution necessitate deliberate policy alignment; without it, domestic rails yield domestic gains but limited export expansion (IMF/World Bank, 2023). Empirical work using cross-country regressions confirms that the export response to digital payments is larger where institutional quality and digital ID coverage are higher.

Finally, heterogeneity across sectors influences the magnitude of the impact. Services and digitally deliverable exports, as well as small manufactured goods sold through e-marketplaces, benefit most from fast, low-cost payments because transaction sizes and logistics align with the rails' strengths. Commodity exporters and capital-goods manufacturers continue to rely on trade finance and letters of credit, so payment-rail gains are secondary unless complemented by improved access to trade finance (FSB, 2022). Overall, evidence suggests that digital payment systems are powerful facilitators of export growth in emerging economies; however, the magnitude of the benefit depends on institutional interoperability, sectoral characteristics and complementary improvements in trade, finance and logistics (IMF et al., 2023).

3.1 Challenges Hindering the Effectiveness of Digital Trade Payment Systems

Trade electronic payment systems provide faster settlement, lower cost and increased market access; however, a number of quantifiable hurdles stand in the way of their full utilization to drive export growth in emerging economies. First and foremost, cyber attacks and fraud threats are the highest disinhibitor. Large-scale cases, ranging from sophisticated robberies that siphon millions to more successful social-engineering and QR/UPI-style fraud, erode trust and force the regulator to tighten regulations, sometimes shutting off services (Mouallem, 2024). There has been extensive fraud loss in Brazil in recent times. As Pix has grown transactions exponentially, attempts and attacks at fraud have more than kept pace, requiring additional monitoring and short-term operational responses (Sallaberry et al 2020). These incidents raise PSPs' compliance costs and results in small exporters being discouraged from relying on digital receipts alone for cross-border settlement.

Second, regulatory fragmentation and AML/KYC compliance create high frictions for cross-border payments. Divergent AML/CFT standards, differing e-ID regimes and a lack of harmonised cross-border data-sharing protocols force banks and PSPs to rely on slow, costly correspondent banking corridors (IMF & World Bank, 2023). Regional initiatives such as PAPSS aim to reduce intra-regional FX and correspondent bank frictions, yet uptake remains patchy because licensing, tax treatment and foreign-exchange regulations differ across states; multi-country analysis shows that unresolved regulatory barriers may limit PAPSS’s potential to cut cross-border costs by the projected 40–50% (Sangwa et al., 2025; Afreximbank, 2024). In practice, exporters face corridor-specific fees and settlement delays that undermine the competitiveness gains from cheaper domestic rail services.

Third, interoperability and legacy system fragmentation limit network effects and scalability. Even where domestic fast-payment systems (FPS) have high penetration such as UPI in India and Pix in Brazil cross-border rails and API interoperability are still in their infancy, meaning exporters still need multiple payment channels, foreign exchange conversions and reconciliation workflows (BIS, 2023; NPCI, 2025). The absence of open technical standards and shared messaging protocols raises integration costs for small fintechs and limits platform-mediated export channels.

Fourth, infrastructure and connectivity constraints reduce rural and SME uptake. Agent-network shortfalls, intermittent broadband and limited smartphone penetration in some regions result in uneven adoption: the GSMA finds high mobile-money adoption in East and West Africa, but pockets of low coverage persist, constraining micro-exporter participation in digital marketplaces (Adongo, 2025). Where last-mile networks are weak, exporters cannot reliably receive or reconcile instant payments, blunting the liquidity and working-capital benefits of real-time rails.

Fifth, FX liquidity and correspondent banking retrenchment on focused corridors remain a constraint. De-risking and correspondent-bank withdrawal since 2014 created high-cost FX corridors. Even though regional rails like PAPSS and tokenisation pilots, will replace correspondent services, evidence suggests substitution is partial without deep FX pools and

market-making capacity (Afreximbank, 2024). Small exporters therefore still endure spread and timing costs that erode price competitiveness.

Sixth, governance, privacy and data localisation rules complicate cross-border data flows and compliance. Differing data-localisation laws, privacy regimes and regulations for cross-border API access increase legal risk for PSPs and raise operational costs—particularly for cloud-based reconciliation and fraud-monitoring services that depend on cross-jurisdictional telemetry (IMF, 2024).

Finally, cost-recovery and monetization concerns chill private investment in rails that otherwise would function as export conduits. Where fee caps or public-utility treatment limit PSP revenues (e.g., some public-coordinated rails), there are limited incentives for private firms to invest in fraud prevention, agent expansion, or cross-border integrations absent targeted subsidies or market-making help (Luo, 2002).

In sum, while digital payment systems materially reduce several frictions to trade, their translation into export growth is conditional on addressing cybersecurity and fraud, regulatory alignment (AML/KYC and e-ID), technical interoperability, last-mile infrastructure, FX liquidity, data-governance harmonisation and sustainable monetisation models. Policy action and multilateral coordination paired with private-sector investment in security and standards are essential to convert payment-rail scale into durable export expansion.

3.2 Policy Implications and Strategic Interventions for Export Enhancement

Strong policies and well-planned strategies can turn digital trade payment systems into real export growth for developing countries. This section highlights priority policy domains such as regulation, interoperability, financial inclusion, infrastructure, management of foreign exchange, and public-private partnerships, and presents empirical evidence of their status and likely influence.

Harmonization of regulations is the first pillar for safe cross-border digital payments. IMF/World Bank cite that harmonization of e-KYC guidelines, AML/CFT regulation rule harmonization, and cross-border electronic invoicing regulation can reduce trade settlement time by 30% (IMF & World Bank, 2023). On the continent of Africa, harmonized frameworks connected by the African Continental Free Trade Area (AfCFTA) secretariat would simplify implementation of PAPSS, its intra-African trade rise of 10–30% real-time estimated where rules are harmonized (Afreximbank, 2024; Sangwa et al., 2025). Brazil's 2024 yearly regulatory adjustment raised Pix QR code requirements, lowered onboarding of merchants by 15%, and significantly increased digital payment utilization. Their policymakers would then be in a position to extend these actions to expand digital payment-enabled exports.

Second, interoperability standards and open-access rules are critical. Mayer, (2024) highlighted that closed-loop systems limit export-related network effects. In India, NPCI’s introduction of UPI-Open API guidelines in 2024 allowed third-party fintechs to integrate

UPI disbursements, resulting in a 25% increase in merchant payment channels, including export-oriented logistics partners (Ramesh, 2025). Policymakers should enforce minimum interoperability standards and API access mandates to broaden platform reach.

Third, digital ID systems enable safe and convenient payments. Kenya's Huduma Namba digital ID and Tanzania's eID system opened up over 12 million users' access to digital wallets in 2023, which resulted in a 20% increase in mobile-money-enabled SMEs exporting horticultural produce (Raithatha, & Storchi, 2025). Effective digital ID policies enable exporters to onboard quickly, reduce fraud risk, and access cross-border fintech services, thereby accelerating export readiness.

Fourth, investment in infrastructure especially in last-mile connectivity enables increased adoption. GSMA (2024) found that rural areas with mobile coverage and a minimum of 10% higher agent density had 30–40% higher use of digital payments for business-to-business transactions. Ethiopia's National Digital Payment Strategy 2022–2025 by telco-fintech partnership to increase rural area coverage by 22% enabling rural exporters to make digital payments and access e-marketplaces (Abatihun, A2025).

Fifth, regional rails and FX liquidity lines reduce export-linked currency frictions. Afreximbank's intra-African trade facility to utilize US$2 billion FX lines in 2024 enabled SMEs to utilise foreign currency to fund exportable inputs and pay at lower using PAPSS (Afreximbank, 2024). At the same time, Thailand's Bank of Thailand experimented with an FX-swap-financed cross-border railway in 2023, in cooperation with Malaysia's central bank, which lowered FX conversion costs by 15% and settlement time by half for small exporters (Vipusmith, 2023). These developments confirm how central bank-assisted liquidity enables exporter competitiveness.

Sixth, export channel inducement can be established by subsidies to public-private partnerships (PPPs) and market facilitation. The governments can also look at subsidizing fees on a temporary basis or offering rebates volume-based in order to enable SMEs to make a transition towards digital payments and hence lower the barriers to entry. Seventh, fraud and cyber ability should be increased. The Central Bank of Nigeria (CBN) in 2023 reported that mobile payment scams like Pix grew by 45% in the Nigerian NIBSS system. CBN, in a reaction to this, implemented a central platform for fraud surveillance that reduced successful scams by 25% within six months (CBN, 2024). Secure payment rails give exporter confidence and system integrity.

Lastly, digital skills and capacity building programs are critical in building exporter readiness. India's NPCI, in association with the Ministry of Commerce, conducted training for 5,000 micro-exporter units in 2024 on UPI integration and digital reconciliation systems and registering a 12% improvement in export documentation accuracy, accelerated payment reconciliation and 10% boost in export orders (ICRIER, 2025).

Summary Table of Policy Interventions

Intervention	Example & Impact
Regulatory harmonization	AfCFTA/PAPSS → 10–30% intra-African trade gain (Afreximbank, 2024)
Interoperability standards	UPI Open API → +25% merchant channels (NPCI, 2025)
Digital IDs	Kenya eID → +20% mobile-money SME exports (GSMA, 2024)
Infrastructure investment	Ethiopia agents +22% → rural exporters digitized (Derbe, et al 2025
FX liquidity facilities	Bank of Thailand pilot → FX cost −15%, time halved (Kraiwanit, et al)
Fee subsidies	Pix export rebates → small-firm exports +8% (Banco Central do Brasil, 2024)
Cybersecurity	Nigeria CBN platform → fraud −25% (CBN, 2024)
Capacity-building	NPCI workshops → export documentation +12%, orders +10% (ICRIER, 2025)

4. METHODOLOGY

This study used data visualization method of research which comprises content analysis and discussion of numerous literatures on digital trade payment systems and export growth in Nigeria. Therefore, the methodology adopted for this study entailed conducting a systematic literature review that thoroughly examined scholarly works focusing on the subject matter. The primary aim of this review is to understand the effectiveness of digital trade payment systems and export growth, and as well examine the challenges hindering the effectiveness of digital trade payment systems.

5. RESULTS AND DISCUSSION OF FINDINGS

This study shows strong evidence that digital trade payment systems help boost export growth in emerging economies. The main findings from the literature, data, and case studies are discussed below.

a. **Digital Payment Systems Reduce Transaction Costs and Accelerate Settlement:** Empirical studies show that digital trade payment platforms such as mobile wallets, blockchain settlements, and regional real-time gross settlement systems lower the costs of cross-border transactions. For example, the Pan-African Payment and Settlement System (PAPSS) is expected to cut intra-African payment costs by about 40 to 50 percent, which could increase trade within Africa by 10 to 30 percent (Afreximbank, 2024; Sangwa et al., 2025). In Brazil, the Pix system now handles over 250 million transactions each day, replacing traditional card and cash payments and helping exporters earn more on frequent, low-value shipments.

Faster settlements and lower transaction costs help exporters keep more cash on hand. This makes it easier for them to reinvest, grow their export activities, and join more regional and global markets. This result matches Transaction Cost Economics (TCE), which suggests that reducing transaction barriers leads to market growth and diversification.

b. **Digital Payment Adoption Facilitates Greater Market Participation and Export Diversification:** Theories about how innovations spread and how networks grow help explain why adoption rates and export impacts differ. Countries with many smartphone users, strong interoperability standards, and digital ID systems, like India's UPI and Brazil's Pix, have seen quick adoption. This has led to more merchants accepting digital payments and greater export capacity (Baj, et al 2023). For instance, India's UPI processed almost 20 billion transactions each month in 2025, and small exporters saw double-digit growth in online sales within a year of using digital receipts. Still, adoption is not equal across all sectors and regions. Rural areas with weaker infrastructure lag behind. These gaps limit the full benefits of export growth, showing why investment in infrastructure and capacity building is important.

c. **Institutional Interoperability and Regulatory Frameworks Are Critical Enablers:** Digital payment systems only help export growth when strong institutions are in place. Harmonized regulations, including AML/KYC compliance, cross-border data sharing and open API standards, are needed to reduce barriers and make cross-border transactions smoother (IMF & World Bank, 2023). The success of PAPSS and Brazil's digital payment reforms shows that when institutions work together, costs go down and regional trade grows (Afreximbank, 2024). On the other hand, when regulations are fragmented and old systems do not work well together, it becomes harder to scale up and connect across borders. This limits export growth. These points show that having the right institutions is just as important as having the right technology.

d. **Challenges and Barriers Limit Full Utilization of Digital Payment Systems:** Digital payment systems have many benefits, but several ongoing challenges still prevent them from reaching their full potential in supporting export growth.

i. **Cybersecurity and Fraud Risks:** As systems like Pix grow quickly, fraud attempts have increased. This threatens trust and leads to higher security costs. As a result, exporters may feel less confident using digital platforms.

ii. **Regulatory Fragmentation:** Different AML/KYC rules and data-localization laws make cross-border operations more difficult. This often means exporters must use expensive correspondent banking, which raises transaction costs.

iii. **Interoperability and Infrastructure Gaps:** Without open standards and with older systems in place, it is hard to connect different platforms smoothly. Poor last-mile connectivity and limited rural infrastructure also make it harder for small and micro exporters to use these systems.

iv. **FX Liquidity and Market Depth:** Regional systems such as PAPSS struggle to access large foreign exchange pools. This makes it hard for them to replace traditional correspondent banking and limits trade growth.

v. **Cost-Recovery and Monetization:** Rules that limit fees and a lack of incentives for private investment slow down the growth of payment systems that can handle large export volumes.

e. Policy Interventions and Strategies: The findings strongly indicate that targeted policy actions can mitigate these challenges and amplify the positive impacts of digital trade payment systems:

i. **Regulatory Harmonization:** Harmonizing cross-border standards (e.g., in the AfCFTA) can reduce the cost of doing business and time of settlements, facilitating intra-regional trade (Afreximbank, 2024).

ii. Enhancing Interoperability and Open Standards: Requiring minimum interoperability standards and open API rules can increase platform reach and simplify cross-border commerce channels.

iii. **Increasing Security and Antifraud Standards:** Implementation of robust cybersecurity frameworks, including fraud watch platforms, builds trust and safeguards exporters' valuables (CBN, 2024).

iv. **Enabling Public-Private Partnerships and Incentives**: Subsidies, fee reductions, and capacity development programs can help lower costs and support SMEs to make use digital payment services for export activities.

6. CONCLUSION AND RECOMMENDATIONS

Evaluation of online trade payment systems recognizes their revolutionary capacity in facilitating export growth in the developing economies. By reducing the cost of transactions, enhanced transparency and speedier cross-border settlements, the platforms cut inefficiencies of the traditional payment systems. The growth in mobile money, digital wallets and blockchain settlement systems is a testament to worldwide movement towards trade finance digitalization. As an illustration, the World Bank (2022) reported that adoption of digital payments in the emerging markets grew over 50% between 2017 and 2021, which had a direct role to play in the development of small-scale and medium-scale exporters that previously faced financing limitations.

Evidence from countries such as Nigeria, India and Kenya shows that digital trade payment systems significantly enhance participation in global markets by integrating informal businesses into formal export channels. According to Chu, (2018), mobile-based digital payments have expanded financial inclusion for over 1.2 billion people globally, many of whom are in developing economies. This expansion translates into higher export competitiveness, particularly for sectors such as agriculture, textiles and services, where transaction reliability is critical. However, challenges such as cybersecurity attacks, incoherence of regulations, infrastructural gaps and expensiveness of transactions still challenge the maximum utilization of these systems. A lack of harmonized global regulatory

regimes is particularly a limitation to easy uptake. Strategic interventions such as regulation harmonisation, investment in fintech infrastructure and capacity building can ensure sustainable gains.

In short, digital payment systems for trade are a central force in export-led development in developing economies. While their effectiveness is already visible in increasing the amount of exports and international competitiveness, further policy intervention and innovation will determine the extent to which these economies use digital finance for long-run export growth.

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