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# Digital Payment System and Supply Chain Finance: An Analysis of Adoption and Impact

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## Abstract

The paper analyzed the critical position of digital payment systems in the transformative environment of the supply chain finance (SCF) as a solution to the problematic issues of inefficiency and high costs of transactions in conventional payment systems. The objective was to examine the adoption tendencies and a complex influence of these technologies on the efficiency of SCF and financial inclusion. The study was structured using the concepts of the Transaction Cost Economics (TCE), and its secondary quantitative data analysis involved a Vector Autoregression (VAR) model and a Granger Causality test. They discovered that the digital payment systems have been highly implemented in the financing of supply chains, and is highly applicable in Europe and Asia, with Africa as an emerging market, especially Kenya and Nigeria. The results also found almost perfect correlation between digital logistics market and the global supply chain management market. The analysis reveals however no statistically significant prediction relationship showing a complex, symbiotic relation instead of a direct, causal relationship. The paper calculated that digital payments were an essential initiator to a more deft and inclusive SCF framework, but its potential would rely on solutions to enduring systemic and conduct obstacles. Stakeholders were advised to strengthen security in transactions in order to reduce the increase in cyber security threats.

## Keywords:

Digital Payment System, Supply Chain Finance, Blockchain, Digital Logistics Market, Supply Chain Market, Paystack.

## 1.0 INTRODUCTION

The growing sophistication in business and worldwide trade during the twenty-first century is an indication of the pressures of technological advancement, consumer demands and the globalization pressures, which are expansive. The supply chains in the modern competitive market place are no longer just the local networks but a global, interconnected network that spans through various borders and encompasses a wide range of stakeholders. The current business world requires expediency, openness, and endurance which requires companies to implement

systems that enable them to be efficient and sustainable in what they do (Alkharafi & Alsabah, 2025). This has made the process of financing in supply chains more difficult because, in most cases, the dynamic nature of transactions that take place in the global trade cannot be handled by traditional mechanisms. Suppliers (especially small and medium enterprises (SMEs)) often experience liquidity pressure as they wait to be paid by larger purchasers, which introduces a financing void that may undermine the stability of the entire supply chain. Here, the trading environment is becoming more complex and requires new financial and technological tools to satisfy the requirements (Guan et al., 2025).

It is against this backdrop that the introduction of digital payment systems has come into focus to solve the bottlenecks that tend to disrupt the performance of the supply chains. The conventional payment systems that are characterized by long delays, high transactional costs as well as inefficiencies regarding settlements across borders have subjected both suppliers and buyers to huge burdens. Another option is provided by digital payment solutions, which is faster, traceable, and less expensive when it comes to financial transactions (Sule et al., 2024). They are applicable to supply chain finance (SCF), which makes them beneficial in facilitating prompt payments of suppliers and at the same time allowing buyers to enjoy favourable credit conditions without posing a risk of liquidating their suppliers. Essentially, the digital payment systems enhance the working capital status of the suppliers and enhance the stability of the supply chain of the buyers. They serve as an interlude between the lateness of payments inherent to large-scale procurement and the immediate cash flows required by smaller enterprises that keep supply chains open (Trawnih et al., 2025).

In addition, the implementation of digital payment system around the world promises their revolutionary role in supply chain financing. In a developed economy, payment gateways like PayPal, Stripe, and Alipay have been embraced as a part of the financial settlement in business dealings, and in an emerging economy, payment gateways like M-Pesa in Kenya, Paystack and Flutterwave in Nigeria, and Paga have seen widespread application in transferring funds within a supply chain (KPMG, 2017). The Nigeria Inter-Bank Settlement System (NIBBS), in Nigeria, announced that electronic payment transactions hit 600 trillion in 2023, compared to 387 trillion in 2022, as more people were adding to the list of those who believe digital systems can be applied to trade facilitation (NIBBS, n.d). Equally, as Global System for Mobile Communications Association (GSMA) notes that mobile money transactions in Sub-Saharan Africa have hit beyond 6 billion in 2022, of which 70 percent of the international figure is in the region, an aspect that illustrates the central role of digital finance in the supply chains of the developing world (GSMA, 2024). Not only have these systems accelerated the payment cycles, but have also boosted the access to finance by SMEs, increased transparency in trade flows and also decreased risks of delayed or defaulting payments. In this way, their effect is being experienced in international trade, especially in areas where the lack of financial inclusion and liquidity constraints have traditionally impeded economic inclusion.

Nonetheless, digital payment system adoption is not that easy. Worldwide obstacles to universal adoption includes platform interoperability, regulatory malalignment, cybersecurity concerns and digital divide (Khando et al., 2023). These issues are also compounded by lack of infrastructure, unstable regulatory frameworks, and rampant cases of fraudulence in online transactions in

Nigeria. As an example, Nigerian banks lost ₦17.6 billion and ₦52.3 billion to electronic fraud in 2023 and 2024, respectively, which can be seen as evidence of the problem of electronic payment security in the country (Fintech Magazine Africa, 2025). These obstacles beg the question of digital payment systems sustainability and inclusiveness as far as supply chain finance is concerned and yet they are gaining momentum in the world.

Considering such changes, this paper aims to examine the use and influences of digital payment systems in supply chain finance. Of interest is to determine the level to which these systems have been adopted in supply chains globally and in Nigeria and the effects of their implementation on suppliers, buyers and general performance of the supply chain. The issues and constraints that come along with their implementation are also taken into consideration especially where the infrastructural and regulatory weaknesses still exist.

## 2.0 LITERATURE REVIEW

### 2.1 Conceptual Review

#### 2.1.1 Digital Payment Systems

Digital payment systems are technological systems and platforms that enable the flow of money electronically between the parties without involving actual handling of cash. They encompass numerous systems including internet banking, debit and credit card systems, mobile wallets, point-of-sale systems, and blockchain-based systems (Calderon, 2025). These systems, in a sense, depict the digitalisation of financial services since formerly, a payment used to require physical presence, manual processing, and paper-based documents but now, the payment process is completed smoothly by secure and automated electronic systems (Ali Alqararah, 2025). They have become an irreplaceable aspect of the contemporary economies, which has become the basis on which commerce, trade, and supply chain integration continue to rely on.

Such systems play the most important role of guaranteeing speed, security, and reliability on financial transactions. They enable businesses and individuals to settle in real-time or in much shorter periods than the conventional means of banking (Khando et al., 2023). In addition to speeding up payment, they make transactions more transparent by generating verifiable transaction records, as well as helping to reduce costs by limiting reliance on intermediaries. As an example, M-Pesa in Kenya has transformed the concept of financial inclusion by empowering millions of people and small traders who were not served by the banking system to engage in digital transactions (Van Hove and Dubus, 2019). Likewise, the Alipay and WeChat Pay in China have revolutionized the payments in the retail and supply chain where billions of transactions are completed in a day (Zhang-Zhang et al., 2020). Fintech systems like Flutterwave, Paystack, and Paga in Nigeria can give companies tools to have a seamless collections and disbursement system that even a small supplier can join formal financial systems (KPMG, 2017).

Digital payment systems sliced through local and intercontinental trade, retail and wholesale market, government, and business-to-business transaction. Nevertheless, in supply chains, they have been most useful in cash flow optimization and better management of working capital (Wang, 2025).

### 2.1.2 Supply Chain Finance

It is necessary to discuss the meaning of the concept of supply chain before trying to explain the phenomenon of supply chain finance. A supply chain is the interrelating system of individuals, companies, resources, operations and technologies that are related to the production of a product or service and its delivery to the ultimate customer. It encompasses all the production and distribution processes starting with the sourcing of raw materials, manufacturing and logistics, and finally delivery of the completed products to the end consumers (Slam et al., 2023). The supply chain is more of an integrated system rather than a linear process and is based on the coordination, collaboration, and sharing of information between a number of stakeholders. Supply chains are more complex in modern business, stretching across borders and connecting various actors in intricate networks, which require efficiency, transparency and resilience as the main qualities to ensure competence in the global business environment (Akinbamini et al., 2025).

Based on this, supply chain finance (SCF) may be categorized as a collection of the financial services that aim to streamline cash flow in the supply chains by mitigating the cash flow disconnect between a buyer and a supplier. Basically, SCF provides suppliers with an opportunity to get early payment according to the creditworthiness of the buyer, which allows suppliers to obtain working capital without costly borrowing facilities (Zhou and Masi, 2025). Some of the practices it seeks to cover include reverse factoring, dynamic discounting, invoice financing, and purchase order financing, all of which are intended to provide liquidity in the supply chain. The notion is especially applicable to the case when small and medium suppliers have to offer buyers with large size the terms of payments which can be long and which are often associated with the risk of insufficient cash flows (Choi et al., 2023). Using SCF, the buyers can settle the invoices at a later agreed date as the financial institutions or fintech providers step in to fund suppliers immediately. So, SCF is like financial intermediary that allows balancing the interests of both sides, providing continuity, stability, and confidence in supply chain relations.

### 2.1.3 Nexus between Digital Payment Systems and Supply Chain Finance

The intersection of digital payment systems (SCF) and supply chain finance can be considered one of the most important innovations in modern trading and commerce. The two concepts are separate and confirming one another. Although SCF is a solution to taking care of the problem of liquidity and working capital in the supply chains, digital payment systems represent the framework, which accelerates, protects, and streamlines financing flows and makes them transparent. Their nexus is due to the necessity to bridge the gap existing between suppliers which need a quick inflow of cash and buyers which are usually subjected to long payment terms. Conventional financial solutions had issues of delays, high transaction costs, and access, and the adoption of digital payment solutions in the SCF transformed the processes of interaction between suppliers and buyers in the contemporary supply chains (Trawnih et al., 2025).

The digital payment systems are practically used as the facilitating mechanism in which SCF solutions are implemented. The effectiveness of invoice discounting, dynamic discounting, and reverse factoring is facilitated by the smooth movement of payments across borders and between institutions (Marak and Pillai, 2019). Fintech companies and other financial organizations are now using digital interfaces to make payments to suppliers ahead of time and buyers are keeping

their credit terms long without disrupting the supply chain. As an illustration, SAP AribaPay and Tradeshift Pay platforms are digital infrastructure that automates the process of SCF, which allows transactions to be seen and settled in real-time (Oluwaseun et al., 2025). In emerging markets, services such as M-Pesa, Flutterwave, and Paystack have also extended the integration to SMEs to make sure that businesses that are generally locked out of formal credit structures can now access liquidity once their invoices are confirmed (Baale, 2025).

## 2.2 Theoretical Review: Transaction Costs Economics (TCE)

Transaction cost Economics (TCE) dates back to the legendary contribution of Coase (1937), who suggested that firms develop as an alternative to markets when the cost of transaction coordination in an organization is less than the cost of relying on external market exchanges. This concept was further improved and extended by Williamson (1979; 1981), who offered a systematic approach to the analysis of the cost of transacting. Williamson highlighted that economic activities do not come free instead, they encompass the costs of searching, contracting, monitoring and adjusting to the changing situations. These are the costs due to the fact that economic participants are frequently lead by the conditions of limited rationality and opportunism and that transactions are in most cases uncertain, frequent and specific to assets (Wigand, 2003; Omali, 2024).

TCE presupposes that organizations are after governance structures, be it markets, hierarchies, or hybrids which are associated with a minimal cost of transaction under the assumption of efficiency. It describes that the companies and governments always balance the trade-offs between the transactions undertaken by the inside and depending on the outside partners. The framework by Williamson outlines the four main types of transaction costs: search costs, which are the expenses related to finding suppliers or buyers; contracting costs, which are the expenses that are incurred during negotiations and contract writing; monitoring costs, which are the expenses involved in making sure that the agreement is adhered to, and the adaptation costs, which are the expenses when the agreement has to be renegotiated or altered due to a change in circumstances (Macher & Richman, 2008; Suematsu, 2014). Essentially, companies are inclined to a system that enables them to cut on such expenses.

However, TCE does possess some critical weaknesses. There are critics who argue that the theory overlooks the growing popularity of the hybrid forms like networks and alliances by drawing a dichotomy between market and hierarchy (Macher & Richman, 2008). It has also been criticized because it overlooks the importance of power relationships and politics in organizing business dealings, which in most instances are decisive (Faster Capital, 2024). Moreover, the assumption of TCE that the work of economic actors is carried out most of the time on the principle of cost reduction eliminates the social embeddedness of transactions. Practically, economic behavior is frequently determined by cultural norms, trust, and informal networks instead of being a result of formal contracts (Sent & Kroese, 2022; Teece, 2017).

The theory can be applied in the study because it describes how organizations implement mechanisms that reduce the cost of conducting transactions especially in complicated networks like supply chains. This rationale is reflected in Supply Chain Finance (SCF) and digital payment systems, which are developed in such a way that they minimize search, contracting, monitoring,

and adaptation expenses that normally slow down the efficiency of trade. In reality, SCF improves the liquidity and confidence among trading partners, reduces the risk of making late or defaulted payments, and digital payment systems simplify financial flows by ensuring secure, transparent, and faster transactions, eliminating inefficiencies in the coordination. In the Nigerian context where high transaction costs are in existence since the institutions are weak, infrastructural gaps, and bureaucratic bottlenecks, TCE will directly shed more light as to why firms and governments are resorting to the innovations as cost effective governance structures. In this way, the theory leads the study by connecting the adoption of SCF and digital payment systems to their effect on the reduction of transactional frictions and the creation of a more efficient trade facilitation.

## 2.3 Empirical Review

In a variety of contexts, new empirical studies find a common point in the conclusion that digitization, in the form of e-payments, e-commerce, and digitally enabled SCF, positively affects supply-chain performance and SME financing activities, and demonstrates ongoing adoption frictions.

Kilay et al. (2024) researched the implications of e-payment and e-commerce on the performance of MSME supply chain. Using survey data from 164 Indonesian MSMEs and multiple linear regression, they found that both e-payment and e-commerce usage exert positive and statistically significant effects on MSME supply-chain performance. Their mixed-methods design (descriptive, regressions, expert interviews) strengthens construct validity and surfaces ten low-scoring indicators that function as practical adoption bottlenecks, positioning “open innovation” solutions as an implementation pathway.

Aikor et al. (2025) examined the cashless policy’s real-sector implications for SME-anchored supply chains, combining OLS, ARDL cointegration, and bounds testing on 2019–2023 indicators. They find long-run gains from digital payments (NEFT, POS) for supply-chain efficiency and GDP contribution, tempered in the short run by infrastructural deficits, low digital literacy, and regulatory gaps, an empirically grounded confirmation that policy-led digitization yields dynamic (short-run vs. long-run) effects.

Yu et al. (2024) use a firm-level case of Zhejiang MYbank (2018–2022) to quantify how digitally delivered SCF expands SME financing availability and scale while raising the bank’s comprehensive economic value. Their analysis highlights design features: decentralized SCF, full-link coverage that operationalize inclusion without sacrificing performance.

Extending to a broader capital-market sample, Guan et al. (2025) estimate models on 757 listed “SRNI” SMEs (2013–2023) and found that SCF significantly improves financing efficiency, with fintech development amplifying these gains; evidence consistent with a complementarities mechanism in which digital infrastructure upgrades strengthen SCF’s effect on firm-level financial frictions.

Through purposive, unstructured interviews with bank officials and corporate clients, Gvozdanovic and Solomon (2016) report that e-banking had not yet been initiated, yet

stakeholders widely expected modern digital banking to alleviate banking-sector constraints, financial-supply-chain frictions, and e-business hurdles. Although non-causal, the study usefully documents readiness perceptions and institutional constraints that condition subsequent adoption.

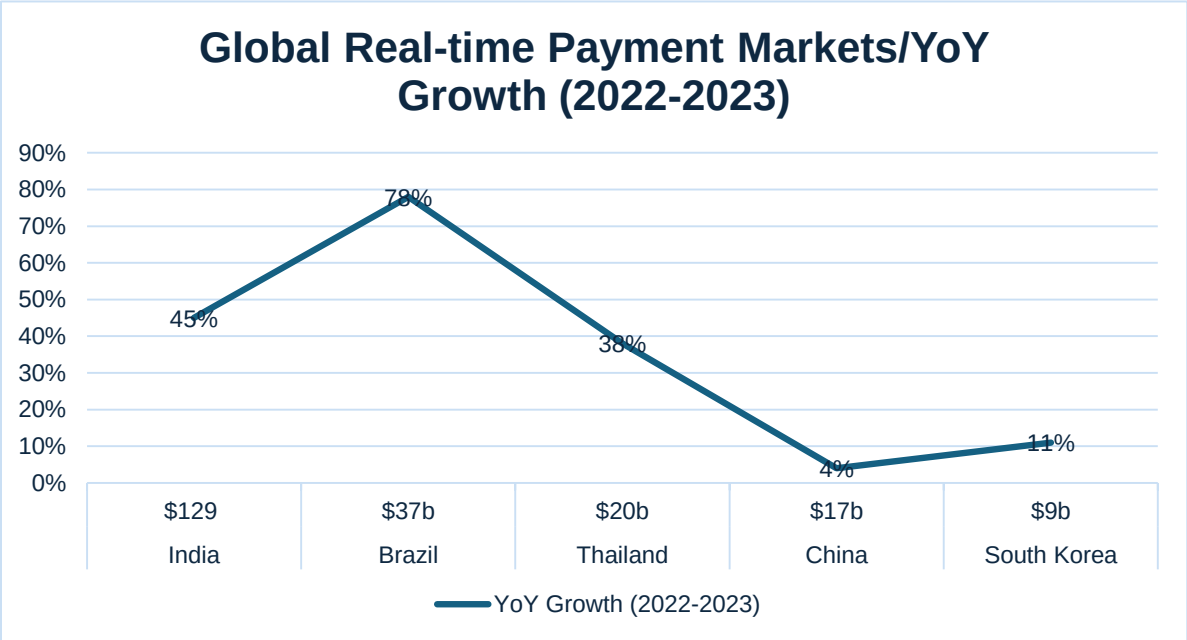
The reviewed studies consistently show that digital payments and supply chain finance improve SME financing and supply-chain performance, though short-term gains are limited by infrastructural and regulatory challenges. Although various tools such as regressions, time-series models, case study, and interviews can enhance the evidence base, they are associated with such problems as endogeneity, measurement lapses, and context-specificity. This paper thus adds value by directly examining the impacts of digital payment adoption in achieving SCF outcomes in the long run providing policy-relevant insights that are integrated and applicable to the emerging markets.

### 2.3.1 Adoption of Digital Payment System in Supply Chain Finance: Empirical Evidences

The implementation of digital payment systems in the supply chain finance has taken place in the form of different steps. Since the 1960s, new techniques started to replace paper-based with electronic to be able to conduct faster and safer transactions as Electronic Data Interchange (EDI) and the introduction of SWIFT in 1973 underwent innovations (Scott and Zachariadis, 2012). This change was speeded up by globalization and e-commerce in the 1990s and 2000s, with new systems like Alipay in China and mobile money platforms like M-Pesa in Kenya reinventing payment security and making finance accessible to small traders and suppliers (Guan & Tick, 2025). The adoption of sending and receiving financing built into procurement platforms like SAP Ariba and Tradeshift, along with the introduction of real-time infrastructures like the SEPA Instant Credit Transfer in Europe and ISO 20022, has created improved speeds and the quality of data, and made payment processes faster in the past decade (Constantino et al., 2024).

These trends are reflected in Nigeria though with distinct policy-oriented momentum. The development of NIBSS Instant Payments (NIP) in 2011 allowed real-time transactions between banks, reducing the time it took to settle business transactions (Saka, 2025). This was succeeded by Cash-less Policy introduced by the Central Bank in the year 2012 that promoted payment electronically in terms of payroll, tax, and settlement of suppliers (Ovat, 2012). More recent innovations have seen the introduction of NQR in 2021, which uses QR-codes as a payment system, including informal merchants and SMEs to the digital finance sector, and the introduction of the eNaira in 2021, where Nigeria became one of the first African states to issue a central bank digital currency (Nwoji, 2025). In order to put these changes in the context of overall global processes, it is necessary to note the existing rates of adoption in major markets. Figure 1 below presents the top five economies that have the largest volume of real-time digital payment transactions, which only extends the current trends on the use of digital payment systems in the world.

**Figure 1: Top Five Global Real-time Digital Payment Markets**

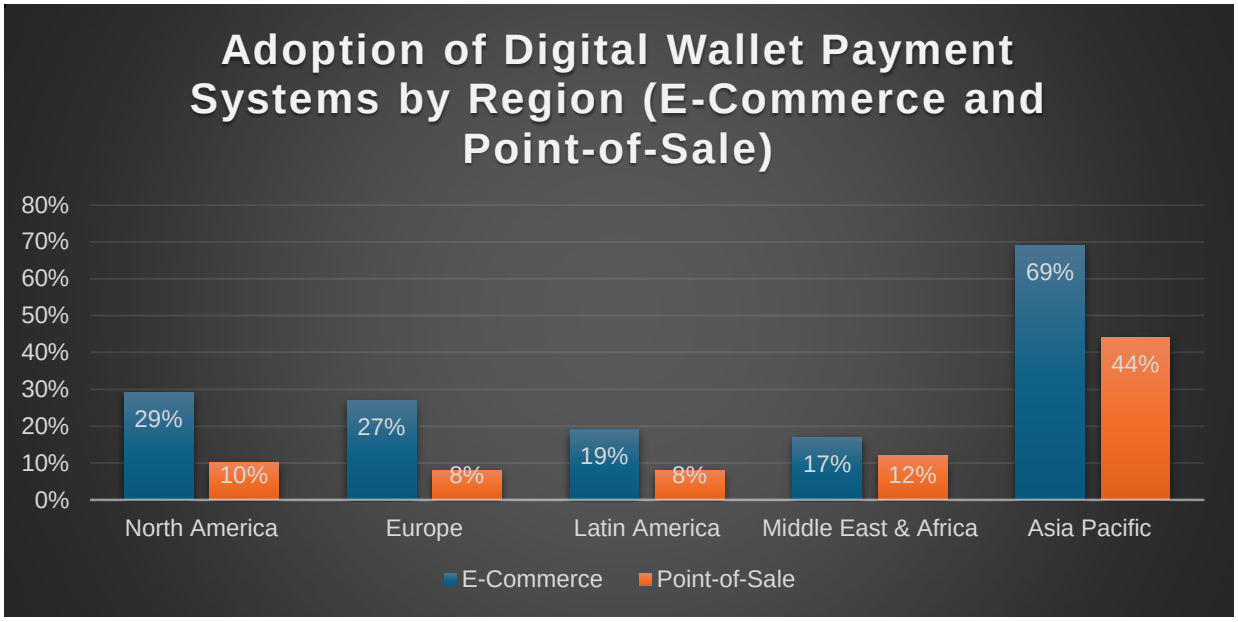



**Source**: Author's Compilation from Payments & Commerce Market Intelligence (2024)

Figure 1 presents the evident variation of the volume and rate of the adoption of real-time payments in the countries. The country of India registered the highest transactions of all countries, amounting to 129 billion, and the growth was high by 45 percent year-on-year, indicating their superiority in the digital payment industry. Brazil trailed behind with 37billion, although its growth rate of 78 percent per year was the quickest, showing that real-time payment systems are rapidly being adopted and used in Latin America. Thailand posted its transactions at 20 billion, which is an indication of consistent uptake as it was backed by a high growth rate of 38%. China contributed to 17 billion yet its growth rate was the lowest at 4 percent of the group, which indicates maturity in the market and reduced growth rate as compared to emerging counterparts. South Korea registered a transaction of 9 billion and a growth rate of 11 percent indicating moderate but steady usage in its mature financial system.

Furthermore, figure 2 below shows the level of adoption of digital wallet payment systems by region (E-Commerce and Point-of-Sale)

**Figure 2: Adoption of Digital Wallet Payment Systems by Region (E-Commerce and Point-of-Sale)**



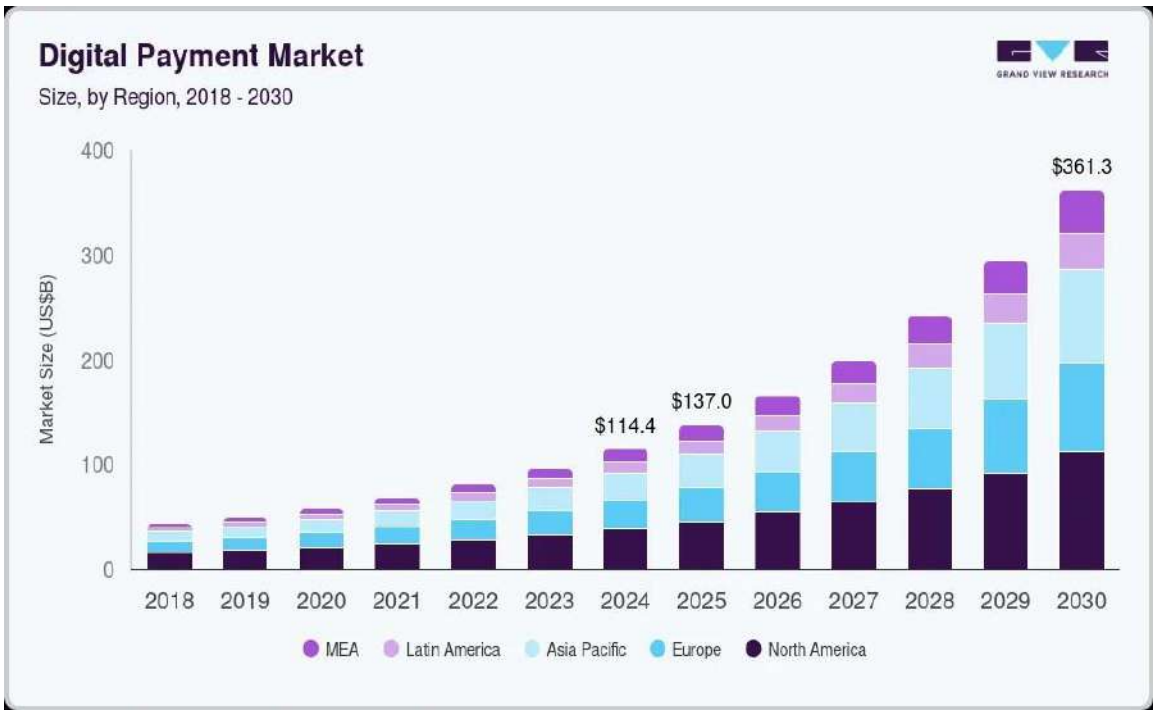

**Source:** Author's Compilation from SDK Finance

In E-Commerce adoption in figure 2 above, Asia Pacific dominates the chart with a striking 69%, towering over all other regions. The next two regions, North America (29%) and Europe (27%), stand far lower but are still significantly above Latin America (19%) and the Middle East & Africa (17%), which occupy the lower end of the scale.

When shifting focus to Point-of-Sale adoption, the hierarchy changes slightly. Again, Asia Pacific leads with 44%, maintaining a wide margin over every other region. However, unlike in E-Commerce where North America and Europe followed closely behind, here the Middle East & Africa (12%) edges above North America (10%) and Europe (8%), reflecting stronger wallet use for in-person payments in that region. Latin America (8%) matches Europe at the bottom of the scale.

Figure 3 below further shows the history and forecast of Digital Payment Markets Size by Regions between 2018 and 2030, further solidifying the adoption of DPS in supply chain, globally.

**Figure 3: Digital Payment Markets Size by Regions (2018-2030)**




**Source**: Grand View Research. https://www.grandviewresearch.com/industry-analysis/digital-payment-solutions-market.

**N/B:** Digital payment market refers specifically to the ecosystem of platforms, technologies, and infrastructures that facilitate electronic financial transactions. It comprises of mobile wallets, online banking services, payment gateways, blockchain-based settlements, and fintech applications. The digital payment market is an indicator of the size of financial flows under consideration and the extent to which companies and households have substituted cash or manual payments with electronic payments. Within the framework of supply chain finance, this market has direct dissimilarity in the liquidity, speed of transactions, and confidence in financial settlements. Figure 3 shows the forecasted growth of the world digital payment market in the leading regions. The figures provide evidence of a consistent growth with the market projected to increase the modest figure of 2018 to an estimated 361.3 billion dollars in 2030 with a major concentration of 114.4 billion dollars in 2024 and 137.0 billion dollars in 2025. North America has the highest share during the period regionally, Europe comes second and Asia Pacific has significant and increasing contributions. The negative trends observed in Latin America and Middle East & Africa also have positive tendencies, although on a smaller scale. This depicts a distinct world movement towards increased use of digital payments in all areas. It is the proliferation of smartphones, increased internet access, increased demand on contactless payments as a result of the pandemic, and government-supporting programs that encourage the use of digital finance that are driving this world-wide adoption of digital payments. As of Q4 2023, there were more than 5.5 billion internet users (65.7 percent of the global population) and 84 percent of all mobile phones are smartphones, which forms an excellent base of digital payment (Kemp, 2024). This trend is being accelerated by governments by collaborating and using global efforts to push responsible digital payments forward, like the collaboration between

the Philippines and Ghana with the UN agencies at COP28 (Hall, 2023). The pandemic also increased its pace of adoption, as Mastercard has registered a 40 percent growth in the count of contactless payments in April 2020, stating that the move towards mobile purse and tap-to-pay options has become a matter of convenience and hygiene (Mastercard, 2020). Nevertheless, even with the current improvements, the danger of increasing payment frauds continues to exist in the market, estimated to account USD 40.62 billion by 2027, and without agenda of innovation in security and confidence of consumers, growth of the digital payments will be negated (Walk-Morris, 2023).

This trend is quite conspicuous in the mobility sector, which shows promise for countries with full readiness to adopt digital payment systems in their supply chains. Table 1 below paints a broader picture of the projected readiness to adopt digital payment in the transport sector, which is the global centre of supply chains and logistics.

**Table 1: Projected Positive Shifts in Digital Payment Adoption within Mobility Markets by 2027 (Euromonitor Mobility Index)**

| Region | Market | Overall | Market Potential | Digital Readiness | Payments Readiness | Consumer Potential |
|---|---|---|---|---|---|---|
| Europe | Spain | 5 | 9 | 5.0 | 1 | 1.0 |
| Asia | Thailand | 3 | 10 | 1.0 | 2 | 1.0 |
| MEA | Saudi Arabia | 3 | 11 | 1.0 | 4 | 4.0 |
| Asia | India | 2 | 4 | 3.0 | 1 | 1.0 |
| Europe | Denmark | 1 | 4 | 7.0 | 2 | 1.0 |
| Europe | Italy | 1 | 1 | 6.0 | 2 | 5.0 |
| Europe | Poland | 1 | 6 | 5.0 | 2 | - |
| Americas | US | 1 | 3 | 1.0 | 1 | 7.0 |
| Asia | Vietnam | 1 | 2 | - | 4 | 2.0 |
| MEA | UAE | 1 | 1 | - | 8 | - |

**Source**: Euromonitor, 2024. https://www.euromonitor.com/article/digital-payments-in-the-mobility-industry--where-and-how-to-play-next.

Euromonitor's Mobility Index for 2027 in Table 2 above quantifies adoption shifts. Spain leads overall with a movement score of 5, propelled by a market potential of 9 and digital readiness of 5 despite low payments readiness and consumer potential scores (both 1). Emerging markets dominate the opportunity set, with Saudi Arabia and Thailand showing high market-potential scores of 11 and 10 respectively, while India, the US, and Vietnam register top-tier payments readiness (score 1) and the US posts strong consumer potential (7). UAE scores are combining high payments readiness (8) and low market potential (1) with a constrained upside and markets such as Italy and Poland have positive overall movement but a poor sub-score. These figures suggest that the benefits of adoption are most significant in those countries in which the market potential is strong, despite an uneven readiness, which means that emerging economies will be the driving force of mobility payment adoption by 2027.

## 2.4 Impact of Adoption of Digital Payment System on Supply Chain Finance: A Descriptive Analysis

Digital payment has transformed supply chain finance so much by increasing the speed of payment, enhancing liquidity, and financial inclusiveness. Advanced market tools like PayPal and the UPI in India, now handle trillions of dollars a year, and improve order to cash performance and decrease the use of short-term credit (Górka, 2025). The combination of blockchain and procure-to-pay systems has contributed to an increased level of transparency and automation, which reduces contracting expenses and allow financiers to underwrite previous payments with less risk, as in the case of Maersk using blockchain solutions (Kumar et al., 2024). Mobile money networks in emerging markets, especially in Africa, transacted hundreds of billions of dollars in 2022, and provide last-mile suppliers with digital payment histories, which enhance access to working capital and improve their integration with larger value chains (GSMA, 2024).

Concerning impact, Table 2 shows the transaction volumes of the key digital payment systems in the world in 2019-2020.

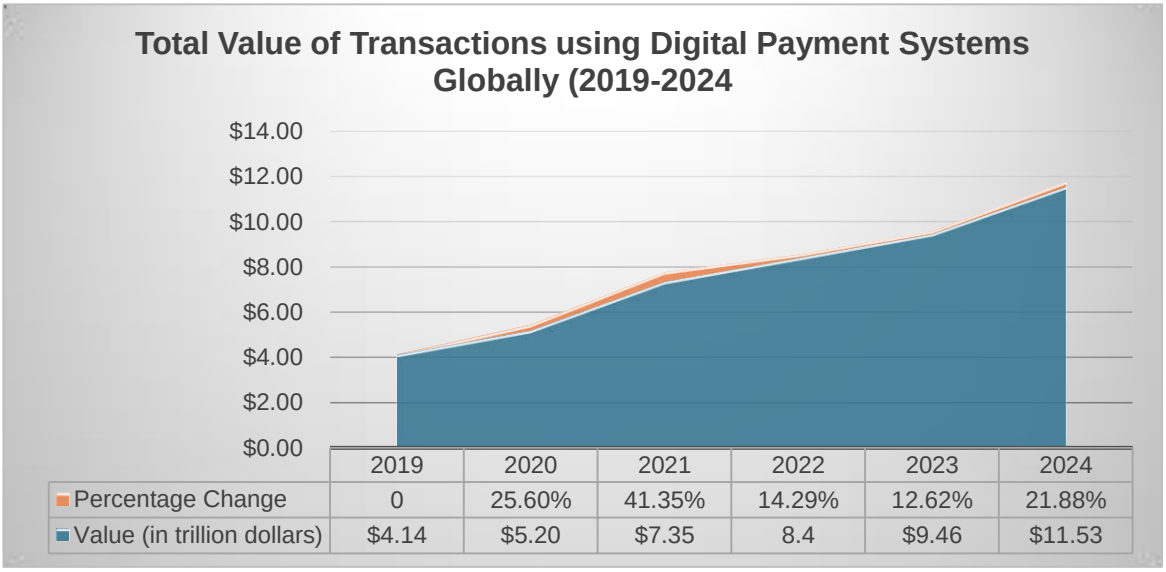
**Table 2: Global Transaction Volumes of Major Digital Payment Systems (2019–2024)**

| DPS | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|
| PayPal | 12.40 billion | 15.40 billion | 19.30 billion | 22.30 billion | 24.98 billion | 26.3 billion |
| UPI<br>M-Pesa | 10.8 billion | 18.8 billion | 38.7 billion | 74.2 billion | 117.6 billion | 172.0 billion |
| M-Pesa | - | 247.5 billion | - | 21.32 billion | 21.4 billion | 30 billion |
| SEPA | 98.0 billion | 101.6 billion | 114 billion | 118.3 billion | | - |
| NIBSS/NIPS | 1.77 billion | 2.69 billion | 3.4 billion | 5.2 billion | 9.7 billion | 13.97 billion |
| Alipay | - | - | : | - | - | - |

**Source**: Author's Compilation from Official Annual Reports (2019-2024)

Table 2 presents how digital payment systems have reshaped global financial transactions between 2019 and 2024, with platforms showing varied growth trajectories. The consistent and significant growth of PayPal, increasing between 12.4 to 26.3 billion transactions, reflects the core role of PayPal in cross-border transactions, whereas the UPI is in a revolution with a significant and commendable rise of 10.8 to 172.0 billion transactions. M-Pesa is indicative of the significance of mobile money in the developing markets, albeit that its unstable numbers represent measurement loopholes. The fact that SEPA has a moderate growth between 98.0 and 118.3 billion transactions indicates that it is a mature and stabilizing system, and that the NIBSS/NIPS system in Nigeria has gone between 1.77 and 13.97 billion transactions is one that is adopting digital finance rapidly. To elaborate on how the digital payment systems have influenced it in this context, the aggregate value of transactions that have been made throughout the world since 2019 and percent variances, as shown on figure 4 below.

**Figure 4: Total Value of Global Transactions via Digital Payment Systems**



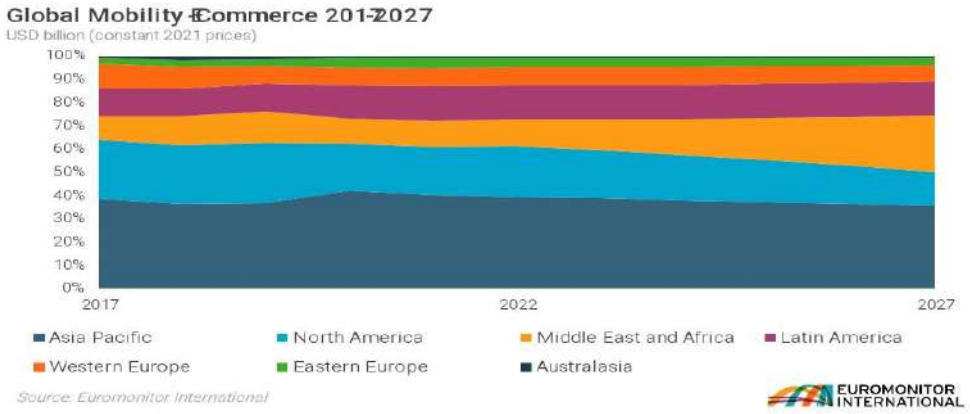

| | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|
| Percentage Change | 0 | 25.60% | 41.35% | 14.29% | 12.62% | 21.88% |
| Value (in trillion dollars) | $4.14 | $5.20 | $7.35 | 8.4 | $9.46 | $11.53 |

**Source**: Author's Compilation from Official Annual Reports.

Figure 4 depicts a steady increase in the value of digital payment transactions, which are set to reach between 4.14 trillion in 2019 and 11.53 trillion in 2024, and this is where the transformational effect of digital payment systems on the financial flows and supply chains. These spikes in 2020 (25.6) and 2021 (41.35) indicate the pace at which the digital platforms were being expanded in the response to the pandemic, leading to contactless and real-time transactions that increased the resilience of the supply chains. Although growth moderated in 2022 and 2023, the renewed surge of 21.88% in 2024 shows sustained adoption, signaling that digital payments are no longer peripheral but central to the efficiency, speed, and scalability of supply chain finance globally.

It is worthy to aver that the transportation sector is central to supply chains financing, leveraging digital payment systems. Figure 5 below shows the projected contributions of the mobility sector to digital payments

**Figure 5: Global Mobility E-Commerce (2017-2027)**




**Source**: Euromonitor International (2024). https://www.euromonitor.com/article/digital-payments-in-the-mobility-industry--where-and-how-to-play-next.

Figure 5, representing global mobility e-commerce from 2017 to 2027 demonstrates Asia Pacific's dominance, with its share climbing from about 37–38% in 2017 to 40% in 2022 and projected to hold steady through 2027. North America follows as the second-largest region, accounting for roughly 28–30% in 2017, though declining slightly to around 25% in 2022 and expected to dip just below that by 2027. The most noticeable growth can be found in the Middle East and Africa, which increases by between 8-10 percent in 2017 to an expected 15 percent in 2027, as a result of the growing digital markets in the region. Latin America is quite stable with a share of between 10-12 percent over the decade whereas Western Europe is slightly affected falling to a lower share of between 8-10 percent in 2027 as compared to 2017. Eastern Europe and Australasia are always the smallest portions and there are the insignificant fluctuations but no significant increases. This discussion indicates that the effects of digital payments on supply chain finance are not uniform but geographically differentiated, with Asia Pacific making systemic change, Africa and Middle East enjoying the transformative growth, and Western economies having the more peripheral but stabilizing impact. In order to also measure the effect that the digital payment systems have on supply chain, Digital Logistics Market Size is considered. Digital Logistics Market Size refers to the total monetary value of the market for digital logistics solutions and services. Digital logistics involves the use of technology and digital tools to optimize and manage various aspects of the supply chain and logistics operations, including transportation, warehousing, inventory management, and order fulfillment. The "market size" represents the overall revenue generated within this sector over a specified period. More specifically, as the Digital Logistics Market Size grows, the supply chain market is expected to grow concurrently. Hence, in this case, digital logistics directly impacts the supply chain either positively or negatively.

Figure 6 below shows the current and projected digital Logistics Market Size from 2020 to 2030 (in USD billions) segmented by solution and services.

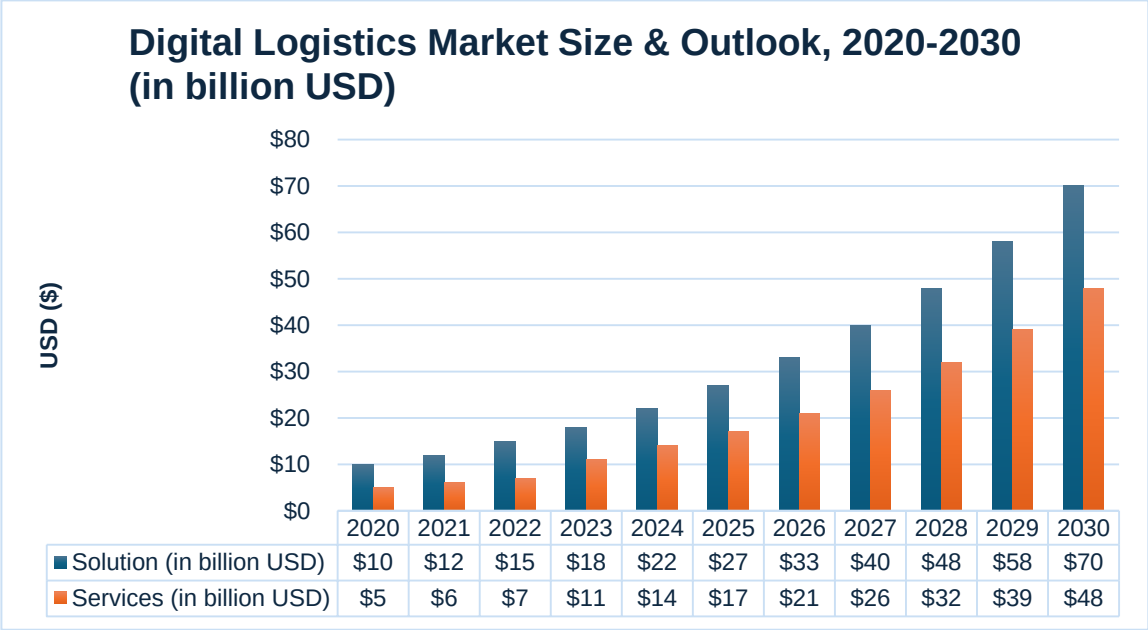



**Figure 6: Digital Logistics Market Size & Outlook (in billion USD)**
**Source**: Author's Compilation from Grandview Research, 2023. https://www.grandviewresearch.com/industry-analysis/digital-logistics-market-report.

As earlier posited, the size of the digital logistics market is a valuable proxy for assessing the impact of digital payment systems on supply chain finance because logistics and payments are tightly interwoven in contemporary trade networks. Logistics business does not just work effectively with the movement of goods but also with the efficient flow of payments which keep procurement, shipping, and last-mile delivery going. In this market, solutions mean the technological platforms and software which streamline digital logistics, including real-time tracking software, warehouse management software, blockchain-enabled trade finance software, and supply-chain optimization predictive analytics. These are capital-intensive solutions that constitute the structural complex of digitized supply chain functioning. In comparison, the services are operational, financial, and technical assistance that keeps these platforms running, such as cloud-based payments integration, transactions management, customer support, and consultation. Services guarantee that the infrastructure created by digital solutions is not solely embraced by digital solutions but it is also robust, scalable, and embedded into normal supply chain functions.

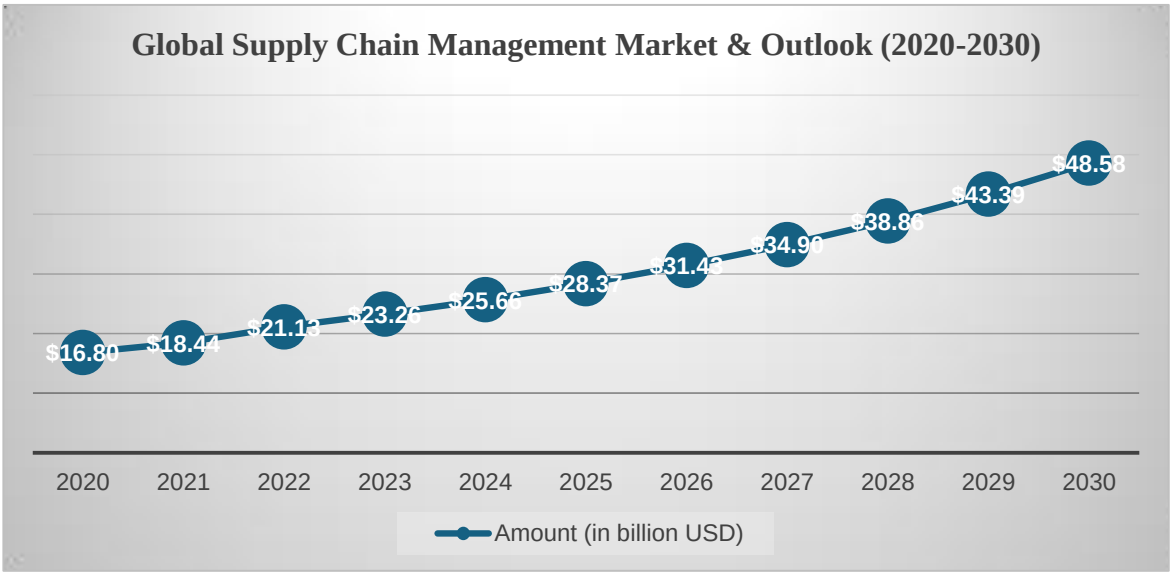
The market in the decade (20202030) has proven to be both sustainable and exponential growth in the market with a focus on the growing convergence of digital payment systems with logistics. In 2020, the market is worth 15 billion dollars (10 billion solutions and 5 billion services). It had increased almost threefold to a very significant level of 44 billion by 2025, solutions (27 billion) just surpassing services (17 billion). The market is set to hit 118 billion dollars by 2030 of which 70 billion will be based on solutions and 48 billion services. This is nearly eight-fold growth in 10 years, which means that solutions and services have a compound annual growth rate (CAGR) of about 19.7 and 23.7 respectively. The more pronounced increase in services, especially after 2023, is a sign of a shift in focus on the simple adoption of technological platforms to the

necessity of long-term financial and operational integration, where digital payment systems have the most significant impact.

The trend highlights the fact that in the context of the increased globalization and data-centricity of supply chains, the facilitator aspect of digital payment systems is gaining more and more prominence as an essential resource. They enable solutions to work effectively by ensuring liquidity and cutting down the settlement period as well as transaction risks at the same time swelling the market of services that require safe and interoperable payment structures. In order to cement this analysis, one will have to do an overview of the global supply chain market, and align the path with the Digital Logistics Market Size. This forms a platform of creation of the impact relationship between both concepts.

Figure 7 below shows the global supply chain market and outlook from 2020-2030.

**Figure 7: Global Supply Chain Management Market & Outlook (2020-2030)**

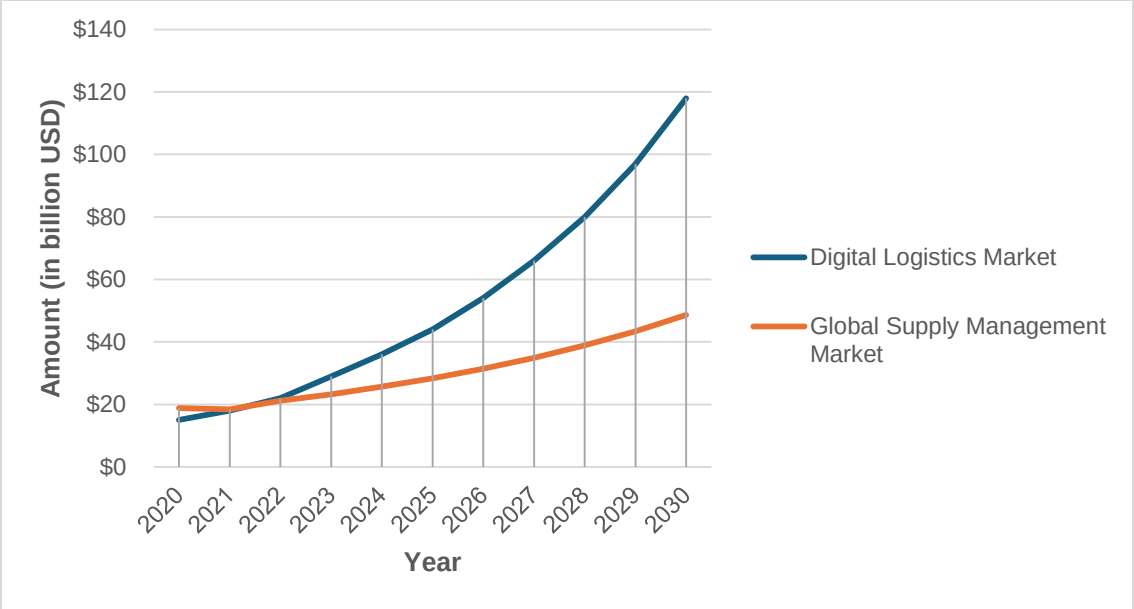



**Source**: Author's Compilation from Grand View Research, 2023.. https://www.grandviewresearch.com/horizon/outlook/supply-chain-management-market-size/global.

According to figure 7 above, global supply chain management (SCM) market grows continuously, with the value of 16.8 billion in 2020 turned into 48.6 billion in 2030, which is caused by the growing complexity of global trade and the need to provide more technologically advanced supply chain services. Similarly, the digital logistics market has a significantly steeper growth curve, with solutions growing between $10 billion and 70 billion by 2020-2030 and services between 5 billions and 48 billions by the same time. Such disparity in growth levels points to the fact that when the general SCM is developing at a moderate rate, the growth rate of digital logistics is surpassing it at a very high rate, which might be a sign of a radical impact of digitization on supply chain operations. The increased rate of digital logistics solutions (automation, analytics based on AI, tracking systems) and digital services (cloud solutions, integration tools, customer interfaces) have a direct positive impact on SCM by lowering

transaction frictions, enhancing traceability, and improving real-time decision-making. More importantly, the development of digital logistic cannot be discussed outside the context of the spread of digital payment systems. The digital payments are quicker and more efficient to facilitate seamless settlement of payment among suppliers, buyers, and logistics providers, thus, promoting the growth of digital logistics infrastructure. Indicatively, the growth in logistics services in 2023 by 11B to 48B in 2030 is not only an increase in investment in digital platforms, but also easier access to digital finance, which keeps the supply chains on a global scale scalable. Effectively, the association can be interpreted as causal and reinforcing, in other words, the development of the digital logistics market enhances the effectiveness and worth of the SCM market, and digital payments secure the development of this market by guaranteeing liquidity and minimizing delay settlement. The near alignment of SCM (48.6 billion) and digital logistics services (48 billion) by 2030 are a sign of how much digital systems are fully integrated into the global supply chain management. The comparative illustration of the two market sizes and outlook in the period under consideration is better shown in figure 8 below.

**Figure 8: Comparative Growth of the Digital Logistics Market and Global Supply Chain Market (2020-2030)**




**Source**: Author's Compilation from Grand View Research, 2023

Not only the divergent patterns of growth can be observed in the comparative line graph of the Digital Logistics Market and the Global Supply Chain Management (SCM) Market between 2020 and 2030 above, but the spheres of the two markets also grow closer together. The trends in both markets are positive throughout the decade, yet the rate of digital logistics growth is substantially higher. Slightly ahead of digital logistics (USD 15 billion), which is a relatively recent practice, is SCM (USD 18.80 billion) in 2020, showing the prevalence of wider supply chain practices in the past. Nevertheless, by 2021, the digital logistics (USD 18 billion) already reached the level and

then overtook SCM (USD 18.44 billion). At this threshold point, the dynamics of the relationship is changed, in other words, digital logistics is the driver of growth and SCM is lagging behind. This means that that innovations in logistics which are being driven by digital technology to a great extent through payment systems, tracking applications and financial integration are no longer a subsector but one that is changing the broader SCM paradigm. This divergence would be more evident in the mid-decade (20232026). Whereas SCM is expected to increase at a steady rate in USD 23.26 billion to USD 31.43 billion, digital logistics will skyrocket at USD 29 billion to USD 54 billion. The increasing gap implies that the efficiency increase, risk mitigation, and cost minimization related to digital payments and financial automation in logistics would be converted to the tangible economic value. That is, the more digitalized the logistics, the faster will be the whole supply chain performance, and a spillover effect on SCM performance will be created. At the peak of the end of the decade, digital logistics will grow to USD 118 billion as opposed to USD 48.58 billion of SCM. This last gap gives the impression of a critical relationship of impact; with increased digitization of logistics, SCM is increasingly using it as a foundation of growth. Digital payment systems, specifically, are facilitators of this change that lower the cost of transaction, guarantee liquidity, and promote trust between actors.

## 3.0 METHODOLOGY

The study is based on the secondary quantitative data obtained as a result of market projections. The study data was two annual time series between 2020 and 2030 that included growth of the Digital Logistics Market and the Global Supply Chain Management Market in billions of US Dollars. The estimation method used was a Vector Autoregression (VAR) model which was selected because it studies the relationships between many time series (dynamic and interdependent) and this method is very suitable in such situations. This model was chosen since it is much more appropriate as compared to a single-equation model such as OLS to use in such analysis. Before the fit of the VAR model, a strict diagnostic exercise was performed to have the data in an analysable form. This entailed the application of the Augmented Dickey-Fuller (ADF) unit root test to test whether it is stationary. Since the results of the first test showed both series were non-stationary, it was required to undergo a transformation process. The Global Supply Chain Management Market was made stationary through first-order differencing, while the Digital Logistics Market, which showed an exponential trend, required a logarithmic transformation followed by first-order differencing to achieve stationarity. After both the series rested, a VAR model with an optimal lag of 1 was also fitted and a Granger Causality test was performed, in order to formally determine the predictive relationship between the two markets.

The model specification is a Vector Autoregression (VAR) model with an optimal lag of 1.

The VAR model is represented as follows:

$$\Delta \ln(DLM_t) = \beta_{10} + \beta_{11}\Delta \ln(DLM_t\text{-}_1) + \beta_{12}\Delta GSCM_t\text{-}_1 + \varepsilon 1_t \quad (1)$$

$$\Delta GSCM_t = \beta_{20} + \beta_{21}\Delta \ln(DLM_t\text{-}_1) + \beta 22\Delta GSCM_t\text{-}_1 + \varepsilon 2_t \quad (2)$$

Where:

1 = time period (year)

DLM, Digital Logistics Market at time 1

G.SCM, Global Supply Chain Management Market at time 1

In = natural logarithm

$\Delta$ = first-order difference operator, where $\triangle(x) = x\text{-}X1\text{-}1$

$\beta$ = coefficients to be estimated by the model

$\varepsilon_{11}$ = error terms for each equation.

### 3.1 Hypothesis

The study's hypotheses are as follows:

### Null Hypothesis ($H_0$)

**$H_0$**: The growth of the digital logistics market has no significant impact on the growth of the global supply chain management market.

### Alternative Hypothesis ($H_1$)

**$H_1$**: The growth of the digital logistics market has a significant positive impact on the growth of the global supply chain management market.

### 4.1 DATA PRESENTATION AND ANALYSIS

### 4.1.1 Descriptive Statistics

The results are presented in Table 3 below;

### Table 3: Descriptive Statistics

| | Count | Mean | Std Dev. | Min | 25% | 50% | 75% | max | Correlation with other |
|---|---|---|---|---|---|---|---|---|---|
| **Digital_Logistics_Market** | 11.0 | 52.636 | 34.059 | 15.00 | 25.500 | 44.00 | 73.00 | 118.00 | 0.997 |
| **Global_Supply_Chain_ Management_Market** | 11.0 | 30.256 | 10.163 | 18.44 | 22.195 | 28.37 | 36.88 | 48.58 | 0.997 |

**Source**: E views Output

Descriptive analysis indicates that the average (52.63) and standard deviation (SD = 34.05) of the digital logistics market are higher and associated with greater volatility than the global supply chain market which has a growing trend of 29.81 average and a smaller standard deviation (10.16). The fact that the logistics increased in 2020 to 118 in 2030 is rather a surprise given that

the growth of the supply chain in the corresponding values is only 18.44 to 48.58. Notably, the almost perfect correlation (0.997) implies that an increase in the level of digital logistics is highly associated with an increase in supply chain finance, which corroborates their dependence within the projection period.

### 4.1.2 Stationarity Test

The initial Augmented Dickey-Fuller (ADF) tests were conducted on the raw time-series data for the Digital Logistics Market and the Global Supply Chain Market. The results, as shown in the table below, indicated that neither series was stationary, as the high p-values failed to reject the null hypothesis of a unit root.

**Table 4: ADF Test Results**

| | ADF Statistic | p-value | 1% CV | 5% CV | 10% CV |
|---|---|---|---|---|---|
| Digital Logistics Market | -0.2714 | 0.9295 | -4.9387 | -3.4776 | -2.8439 |
| Global Supply Chain Market | 1.7548 | 0.9983 | -4.9387 | -3.4776 | -2.8439 |

**Source**: E Views Output

## 4.1.3 Transformation Process

To address the non-stationarity, an iterative transformation process was undertaken. The first step was to apply a first-order differencing to both series. This transformation made the Global Supply Chain Market series weakly stationary, but the Digital Logistics Market series remained non-stationary, as evidenced by a p-value of 1.0.

**Table 5: ADF Test Results for First-Differenced Data**

| Variable | ADF Statistic | p-value | 1% CV | 5% CV | 10% CV |
|---|---|---|---|---|---|
| Differenced Digital Logistics | 12.958 | 1.000 | -4.939 | -3.478 | -2.844 |
| Differenced Global Supply Chain | -2.399 | 0.142 | -4.473 | -3.290 | -2.772 |

**Source**: E Views Output

Given the persistent non-stationarity and the evident exponential growth in the Digital Logistics Market series, a more robust transformation was required. A logarithmic transformation was applied to the data to stabilize its variance before a final first-order differencing was performed. The final ADF test on the log-differenced Digital Logistics Market series confirmed that the transformation was successful. The results are shown in the table below.

**Table 6: ADF Test Results for Log-Differenced Data**

| Variable | ADF Statistic | p-value | 1% CV | 5% CV | 10% CV |
|---|---|---|---|---|---|
| Digital Logistics Market (Log-Differenced) | -7.504 | 4.184e-11 | -4.939 | -3.478 | -2.844 |

**Source**: E Views Output

The extremely low p-value and the ADF statistic being less than the critical values at all confidence levels confirm that the series is now stationary.

With both the Digital Logistics Market and Global Supply Chain Management Market series now stationary, a Vector Autoregression (VAR) model is used to analyze the dynamic relationship between them without the risk of spurious regression.

### 4.1.4 VAR Model Results

The VAR model was fitted using an optimal lag of 1. Below is the summary of the model, which shows the regression results for each variable.

**Table 7: VAR Model Results**

| | Digital Logistics (Log-Diff) | Global Supply Chain (1st Diff) |
|---|---|---|
| **Equation** | | |
| const | 0.1897 | 4.8677 |
| **L1.Digital Logistics** | 0.1227 | **-14.0583** |
| **L1.Global SCM** | -0.0023 | **0.5113** |
| **R^2** | 0.016 | 0.399 |
| **Adj. R^2** | -0.231 | 0.231 |

**Source**: E Views Output

*Note: L1 indicates the first lag (i.e., the previous year's value).*

- **For the Global SCM Market (1st Diff)**, the previous year's value of the same series (L1.Global SCM) has a statistically significant positive effect (coefficient = 0.5113, p-value = 0.005). This indicates that the growth in the global supply chain market is positively influenced by its own past growth. The previous year's value of the Digital Logistics Market (L1.Digital Logistics) has no significant effect.
- **For the Digital Logistics Market (Log-Diff)**, neither the past value of its own series nor the past value of the Global Supply Chain Market has a statistically significant effect. The model's coefficients for these variables have high p-values (>0.05).

### 4.1.5 Granger Causality Test

The Granger Causality test provides a formal statistical check on the predictive relationship between the two markets. The results confirm the findings from the VAR model's coefficients.

**Table 8: Granger Causality Test**

| Null Hypothesis (H0) | F-Statistic | p-value | Conclusion |
|---|---|---|---|
| Global SCM does not Granger-cause Digital Logistics | 0.08862 | 0.771 | Fail to Reject H0 |
| Digital Logistics does not Granger-cause Global SCM | 2.367 | 0.150 | Fail to Reject H0 |

**Source**: E Views Output.

For both tests, the p-values are much greater than the common significance level of 0.05. This leads us to fail to reject the null hypothesis in both cases.

## 4.2 INTERPRETATION OF RESULTS AND DISCUSSION

The analysis has started by ensuring that the Digital Logistics Market as well as the Global Supply Chain Management Market was not a non-stationary market. A VAR model was estimated on the dynamic relationship between them after making suitable transformations to ensure they were stationary. According to the VAR model, it was highly and positively indicated that Global Supply Chain Management Market is driven to grow by its own past performance indicating that the growth is highly self-perpetuating. The model was however found to have no significant predictive power to the Digital Logistics Market meaning that its growth may be due to other factors that were not considered by the model like the changes in the technology or the policy. As such, the null hypothesis cannot be rejected, which means that the development of the Digital Logistics Market does not substantially predict the development of the Global Supply chain management market. This implies that the two markets share the same economic ecosystem but exist independently with regard to lagged causality. It is more the internal processes that make each grow and there may be other external factors that are outside the scope of this model. Formal statistical evidence of these observations was given by the Granger Causality tests. The significant tests were always with high p-values (0.771 and 0.150) indicating that we did not reject the null hypothesis in both cases. This is the most important conclusion of the analysis. It shows that the historical growth of one market does not give a statistically significant foundation of future growth of the other. The observation is contrary to Aikor et al. (2025) who established that digital financial systems have a profound effect in transitioning the supply chains.

### 4.2.1 Challenges of Adoption of Digital Payment System in Supply Chain Finance

Implementation of digital payment system in Supply Chain Finance (SCF) is still characterized by stratified challenges encountered in both emerging and developed markets, as a manifestation of technological, institutional and behavioural bottlenecks. As an example, in India, velocity on the adoption of UPI is observed to be very slow due to the need by banks to modernize platforms to offer credit to digital transactions, and also because small merchants are afraid of taxation and are not always convinced about using official borrowing (Usmani, 2025). In the same way, the QR-based LankaQR project in Sri Lanka has expanded the financial inclusion of SMEs but it appears to have high transaction costs and uneven penetrations of smartphones and the internet, which prevents an effective expansion (Central Bank of Sri Lanka, 2020). Nigeria is another educative example, as the level of mobile money use is intensive but stakeholder coordination

lacks, digital infrastructure is weak, and suppliers are not very literate, which makes SCF implementation less effective (GSMA, 2024). Outside of these country cases, there are still more institutional and structural challenges afoot. The use of blockchain and fintech-based SCF solutions is restricted by technological barriers like interoperability issues, expensive initial costs, poor regulatory and knowledge infrastructure, and especially among the SMEs (Saeed et al., 2023). The SCF continues to be slowed down by the legacy trade finance processes world-wide, and manual documentation is still incurring 5-10 percent of transaction values, and compliance overheads (including heavy AML and KYC measures) keeps banks unwilling to offer SCF to smaller or riskier suppliers. The impact of cybersecurity risks also complicates the issue of digital adoption because fraud and phishing continue to pose an obstacle to both the established and new markets, and European SCF platforms in the specified area have been reporting the increase in cyber-incidents despite improved regulatory safeguards under PSD2 and GDPR. Africa and Southeast Asia are emerging markets that promise and pit two-fold challenges of fintech-based SCF. Mobile payment systems such as M-Pesa have facilitated digital payments in Africa where commercial banks traditionally locked out SMEs, but lack of infrastructures and longstanding institutionalized behaviours of debit society where suppliers require upfront payments hinder the adoption of credit-based SCF (Vodafone, 2022). Cash is still culturally dominant in the Southeast Asian region especially in Indonesia, with SMEs perceiving it to be more dependable, thus slowing down digitalization even with government initiatives to modernize SCF (SPEEDA, 2019). The other problem Latin America has to tackle is fragmented payment ecosystems with limited interoperability between different banks, fintechs, and logistics providers, which generates inefficiencies and slows down uptake (IBS Intelligence, 2025).

## 5.1 CONCLUSION

The digital systems of payment have provoked an attitude-altering effect on supply chain finance (SCF) that has reshaped the market dynamics essentially. The adoption is not only incremental but an immense global trend, based on the fact that platforms such as the UPI of India are growing exponentially, and mobile money is used widely in Africa. This has been a direct cause of the exponential growth of the digital logistics market that has surpassed the larger Supply Chain Management (SCM) market and will become its key driver of growth. Nevertheless, even with this high level of correlation and the obvious effect, the development of one market does not positively influence the development of the other statistically significantly. This is an indication that, although there is a strong, symbiotic relationship, it is not a direct, linear cause and effect. Digital payments have a transformative potential that is limited by the continued and non-technological barriers. Those are the perpetual momentum of manual records, increasing cybersecurity threats, and heavily institutionalized cultural and technological issues in most emerging markets. Thus, although digital payments are an essential driver to an agile and efficient SCF ecosystem, their final effects depend on a comprehensive approach. To fully utilize this potential, it is necessary to go beyond simply adopting technology to confront the systemic and behavioral obstacles that have continued to hinder a fully functional and entirely integrated digital ecosystem.

## 5.2 RECOMMENDATIONS

Based on the findings, the following recommendations are proposed to enhance the adoption and impact of digital payment systems in supply chain finance:

1. Considering the losses of a large sum of money in case of fraud, the necessity to invest in effective cybersecurity measures is urgent. This involves the deployment of sophisticated fraud detection, two factor authentication and tokenization to protect the transactions and create user trust. The businesses and the payment providers also need to collaborate with law enforcement in order to track and investigate the cases of fraud.
2. To curb regulatory misalignment, especially in nations with disjointed payment systems policymakers and financial institutions are urged to work together to come up with uniform and transparent regulatory policies that encourage interoperability and lessen compliance overheads across various digital payment systems.
3. Concerted efforts are necessary in the name of bridging the digital divide and change resistance by educating and training the stakeholders such as suppliers and inner finance teams about the advantages and the correct application of digital payment system. Reorganized change management process may guarantee a more flawless adoption and avoid operational inefficiencies and mistakes.
4. To ensure further optimization of SCF, organizations should consider the interconnection of AI, machine learning, and blockchain. Predictive insights into cash flow and risk assessment should be achieved with AI, whereas blockchain may be used to ensure impeccable records to make it more transparent and secure.
5. The providers are supposed to come up with the SCF solutions that are tailor-made to address their needs. This must incorporate easy to use solutions, cheap transaction costs and soft funds that need not present intricate and expensive integrations to the prevailing legacy systems.

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