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A Systematic Review of Digital Payment Transactions in Enhancing Third-Party Funds and Fee-Based Income

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ABSTRACT

This systematic literature review examines the impact of digital payment merchant transactions on Third-Party Funds (DPK) growth and Fee-Based Income (FBI) within digital finance and investment innovation. Synthesizing findings from national and international journals, the study highlights digital payment mechanisms' role in enhancing banking profitability and financial inclusion. Key factors influencing this relationship include technological infrastructure, consumer trust, and regulatory frameworks that foster innovation while managing risks. The review addresses challenges in risk management, emphasizing the need for adaptive policies and governance to mitigate cyber threats. Results underline the strategic importance of integrating digital payment systems to diversify income streams, optimize capital mobilization, and enhance operational efficiency. The study provides valuable insights for academics, financial practitioners, and policymakers aiming to promote sustainable growth through digital finance innovations. It bridges literature gaps and lays a foundation for future research on strengthening inclusive and resilient financial ecosystems.

Keywords: *Banking Stability, Digital Financial Services, Financial Inclusion, Payment System Innovation.*

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1. | INTRODUCTION

The growth in smartphone usage, internet access, and digital payment infrastructure is driving a global shift from cash to digital transactions. After a slowdown during the pandemic, the payment industry is growing again with a projected market value of trillions of dollars, confirming the role of digital payments as the backbone of the modern financial ecosystem (Botta & Nadeau, 2022). The adoption of e-wallets, mobile wallets, QR-based payments, and account-to-account rails not only increases transaction volume but also opens up non-interest income sources for banks through fee-based income and value-added services. Empirical evidence shows that the digitization of services improves banking efficiency and performance, thereby strengthening profitability through payment transformation (Lee et al., 2021).

In addition to commercial aspects, digital payments promote financial inclusion by reducing transaction costs and facilitating the onboarding of previously underserved customers, including MSMEs and communities in remote areas. This expands the depositor base and the potential for mobilizing third-party funds. However, the acceleration of digital payments brings challenges in the form of the need for strong technological infrastructure, cyber protection, increased digital literacy, and adaptive regulations to deal with non-bank players and data governance issues. Research shows that security, user experience, and transparency are key factors in the sustainability of adoption (Zhao et al., 2023; Gaur & Saxena, 2025).

Digital payment infrastructure is an important channel for banks to expand non-interest income. The growth of payment services and value-added services opens up opportunities to increase fee-based income through merchant acquiring, transaction processing, and additional services such as loyalty, analytics, and escrow. Integrating payments into the banking ecosystem enables the monetization of transaction activities while reducing dependence on interest margins.

The intensification of digital transactions also supports DPK mobilization through increased use of digital accounts and savings patterns, including e-wallet balances stored in source accounts. Although digitization increases access and transaction volume, its effect on liquidity and DPK structure is highly dependent on the bank's business model and fund quality, requiring a strong liquidity management strategy to ensure that the funds collected effectively support intermediation (Hao et al., 2023).

At the operational level, digital payments increase cost efficiency, service speed, and increase cross-selling and customer retention opportunities. The use of transaction data for CRM and credit scoring enables banks to offer more targeted products at a lower acquisition cost. However, these advantages require significant investment in platforms, security, and API integration, while also strengthening data governance amid increasing competition from BigTech and non-bank providers that are changing the financial intermediation landscape.

Digital payments through fintech services have been shown to encourage bank savings accumulation, especially in developing countries. The penetration of mobile

money and e-wallets linked to bank accounts increases savings mobilization and contributes to banking stability, as reflected in the strengthening of the Z-score of the industry (Kasri et al., 2022).

The development of fintech payments has also changed the banking intermediation model. Competition between fintech platforms and banks in the deposit market, for example through money market fund products in payment applications, shows that these services not only modernize payment methods but also shift and increase third-party fund collection (Zhu & Lu, 2021). In developing countries, mobile money creates a network effect that encourages users to switch to bank savings and credit services, thereby strengthening the DPK base (Aracil et al., 2025). However, the impact of digital payments is not entirely positive. In the short term, an increase in the volume of digital transactions can put pressure on bank stability when liquidity management and capital buffers are not managed properly, as reflected in a decline in the Z-score (Bachri & Ekaputra, 2024).

Digital payments have been shown to accelerate the expansion of financial service ownership and usage at the household and small business levels. The significant increase in formal account ownership over the past decade indicates that digital transformation (including digital payments) is one of the main drivers of increased global financial access, opening enormous opportunities for broader financial inclusion.

Services such as mobile money, e-wallets, and mobile-based payment solutions increase the financial participation of previously underserved groups. For example, cross-country reviews and regional studies have found that mobile money contributes to increased use of formal transactions, ease of saving funds, and access to additional financial services (savings, microcredit). This effect is most pronounced in countries with high mobile phone penetration but limited conventional banking infrastructure (Shaikh et al., 2023).

The success of digital payments is largely determined by the quality of infrastructure and interoperability. Reliable networks, low latency, and standards for integration between systems are key to smooth settlement and cost efficiency. Without interoperability, operational friction increases and adoption is difficult to scale. Research in emerging countries confirms that infrastructure readiness is a major factor in the growth of the digital payment ecosystem (Ly & Ly, 2024).

In addition, user trust and quality of experience (UX) determine sustainability of use. Perceptions of security, cost transparency, service consistency, and ease of use drive transaction frequency and loyalty. Even if the infrastructure is available, low trust or complex interfaces can hinder transaction value growth. Therefore, user-centric product design and digital literacy education are important investments for converting new users into active users (Norbu et al., 2024).

Cybersecurity, risk management, and adaptive regulation are also key foundations. The increasing cyber threats and data protection requirements demand a combination of technical controls, strong governance, and clear policies, including fund

safeguarding mechanisms and liquidity requirements. Synergy between regulators, banks, and service providers is necessary to maintain consumer protection while enabling innovation. Recent literature confirms that the success of digital payment systems depends not only on technology, but also on institutional capacity and proportionate regulation (Aljaradat et al., 2024).

The rapid development of the digital payment ecosystem brings great opportunities as well as a series of challenges and risks that must be managed by banks, payment service providers, and regulators. Cyber threats and real-time fraud are major risks due to the instantaneous and non-face-to-face nature of digital transactions; recent literature shows an increase in the incidence and complexity of attacks, forcing the adoption of AI-based detection techniques and enhanced operational controls (Laxman et al., 2024).

There is still a research gap because findings on the impact of digital payments on Third Party Funds (TPF) and Fee-Based Income (FBI) tend to be fragmented and. Some studies show an increase in deposits and non-interest income, while other studies find varying results or even potential risks to bank stability. This situation highlights the need for a systematic review that summarizes the latest empirical evidence to understand the mechanisms, moderating factors, and conditions that determine the effectiveness of digital payments in strengthening bank performance. Therefore, this study aims to synthesize the current literature, clarify the relationship between digital payments, TFD, and FBI, and formulate strategic implications for banking policy and practice.

2. | LITERATURE REVIEW

Digital Payment Systems and the Transformation of the Banking Industry

Digital payment systems refer to the technology, platforms, and procedures that enable the electronic transfer of value via mobile devices, online channels, or integrated payment infrastructure. Within the framework of digital finance, digital payments are seen as a fundamental component that combines technological innovation with faster, safer, and more efficient transaction processes. Digital payments are a key catalyst in the FinTech revolution because they enable financial services to operate with high automation, platform integration, and more customer-centric business models.

This transformation of the payment system has brought about structural changes in the banking industry. Digital payments have increased the frequency and volume of transactions, which has implications for operational efficiency and an increase in transaction data that can be utilized for the development of banking services. Payment innovations have driven changes in bank revenue models through the expansion of transaction-based services, such as merchant acquiring, processing fees, and value-added services. Third, disruption arises from the growth of non-bank players (FinTech and BigTech) that play an important role in the payment chain, thereby shifting some of the traditional intermediation functions. Frost et al. (2019) assert that the entry of BigTech changes the intermediation structure through their ability to leverage large-scale data and extensive platform networks.

In addition to structural aspects, the implementation of digital payments has been shown to affect bank performance. Empirical research shows that transaction digitization can increase productivity, reduce operating costs, and open up sources of non-interest income (fee-based income). Li et al. (2021) found that banks that were quicker to adopt digital services experienced increased efficiency and financial performance, particularly through process automation and customer data. Digital payments increase bank productivity, although the magnitude of the impact is highly dependent on the bank's infrastructure readiness and digital strategy (Poskitt, 2012).

Digital Payment and Banking Profitability (Fee-Based Income)

Fee-based income (FBI) for banks includes all non-interest income derived from transaction and service fees. Examples include payment processing fees, merchant acquiring, escrow services, transfer fees, business account services, and value-added services (data analytics, loyalty). In the context of digital payments, FBI arises when electronic transaction activities (e-wallets, mobile payments, merchant acquiring, QR payments) are monetized, either through direct fees charged to merchants/sellers or through additional services sold to users and partners. The shift of most transaction interactions to digital channels increases monetization opportunities and economies of scale for the FBI business line.

There are several mechanistic channels that explain how digital payments drive FBI:

Volume & frequency: digitization increases the frequency of retail transactions, thereby boosting fees per transaction and total transaction revenue. Merchant services: acquiring and value-added services (reporting, fraud detection, settlement) create new sources of FBI. Data-driven cross-selling: digital transaction data strengthens banks' ability to offer paid products (analytics, loyalty services, transaction-based credit) that increase non-interest margins. Cost scalability: digital platforms enable marginal cost reductions, making the FBI model more profitable as volume increases.

These concepts are explained in FinTech literature linking payment innovation to changes in bank revenue structures. There is a positive relationship between the adoption of digital payment services and an increase in non-interest income (FBI), although the strength of the effect varies according to the country context, partnership model, and the bank's ability to monetize data. Banks that have successfully integrated digital payment services into their ecosystem tend to experience a shift in the proportion of revenue to non-interest income (FBI) and an increase in operational cost efficiency. Through the adoption of digital payments, there is an increase in cost efficiency and FBI sources (see empirical studies and industry reports examining this effect). However, some studies also note important nuances. If the platform business model (non-bank) captures most of the transaction “float” or if the conversion of transaction balances into deposit products does not occur, the FBI benefits for traditional banks may be smaller or even decrease (Saroy et al., 2023).

Digital Payments and Third-Party Funds (DPK) Growth

Third Party Funds (DPK), consisting of current accounts, savings accounts, and deposits, are the main source of bank liquidity that determines intermediation capacity and long-term funding stability. In the context of financial digitalization, digital payments are one of the factors that have the potential to expand the DPK base through increased transaction activity, an increase in the number of active accounts, and the creation of transaction balances (float) stored in the banking system. Institutions such as the World Bank note that the growth of digital payments globally encourages increased use of formal accounts and greater financial inclusion, which ultimately contributes to the accumulation of funds in banks.

There is a long-term relationship between the intensity of digital payment usage and banking stability, which indicates an increase in the capacity to mobilize funds through digital channels (Kasri et al., 2022). The adoption of financial technology, including digital payments, is associated with increased efficiency and fund-raising capabilities for banks in the Asian region. However, some international literature also highlights that the volatility of balances on non-bank platforms can limit the conversion of transaction balances into stable DPK, especially when safeguarding mechanisms do not require funds to be deposited in bank accounts (Li et al., 2021).

Digital Financial Inclusion and Its Impact on the Banking Ecosystem

Digital financial inclusion refers to the expansion of access, use, and quality of financial services through digital channels, including mobile banking, digital wallets, and electronic payments. The digitization of payments is a major factor in increasing account ownership, especially in developing countries, as digital payments facilitate everyday transactions, remittances, and the distribution of government assistance. This increase marks a shift in from traditional branch-based financial access to a more inclusive and widespread digital service ecosystem.

Digital financial inclusion affects the banking ecosystem through several important mechanisms. First, expanded digital access significantly encourages the opening of new accounts through a cheaper and faster digital onboarding process. Second, increased use of digital payments increases transaction activity and the frequency of cash flows passing through bank accounts. Third, digitization enables MSMEs to easily receive electronic payments, thereby increasing their need to use formal accounts for recording, settlement, and cash storage. Fourth, digital transaction records create digital footprints that can be used for alternative credit scoring, expanding access to financing for segments that were previously unreachable by conventional means.

The expansion of digital financial services increases inclusion and strengthens the stability of the financial system when the digital ecosystem is closely connected to regulated institutions. On the other hand, if non-bank providers dominate value storage (float) and concentrate transaction activities outside the banking system, the potential benefits for banks may be reduced. Thus, digital inclusion does not automatically result in an increase in third-party funds or bank profitability. The final outcome is influenced

by fund safeguarding mechanisms, settlement integration with banks, and the level of interoperability in the payment system (Ozili, 2018).

3. | RESEARCH METHOD

This study uses a qualitative approach to gain an in-depth understanding of the dynamics of digital payment systems and their impact on the banking ecosystem. A qualitative approach was chosen because it is able to capture experiences, perceptions, and contexts that underlie changes in industry behavior and practices that cannot be fully explained by quantitative data. Primary data was collected through in-depth interviews with key informants consisting of banking officials, digital payment service providers, regulators, and academics with expertise in payment systems, financial inclusion, and digital transformation. To complement and validate the findings, this study also utilized secondary data in the form of industry reports, regulatory policies, scientific publications, and other relevant official documents.

Data analysis was conductedly using thematic analysis, through a process of coding, categorization, and extraction of main themes that describe the relationship between digital payments, bank profitability, DPK growth, financial inclusion, and risk and governance. Data validity was maintained through triangulation of sources and methods, member checking, and systematic recording of the analysis process to ensure the transparency and credibility of the research results. With this design, the research is expected to produce a holistic and in-depth understanding of how digital payment systems shape the direction of modern banking development.

4. | RESULTS

The results of the study show that the transformation of digital payment systems has had a significant impact on banking strategies, operational processes, and revenue structures. Key findings indicate that the increasing adoption of digital payments has not only expanded access and convenience of services for customers but also changed the business model of banks through increased fee-based income, shifts in transaction behavior, and expansion of the Third-Party Funds (TPF) base. Informants said that digital payments are no longer seen as a supporting service, but as a core driver in customer acquisition and strengthening long-term relationships.

In terms of profitability, interviews revealed that digital payment systems contribute to the growth of non-interest income (fee-based income) through transaction fees, merchant acquiring, and settlement management. One senior banking manager stated, “The shift of transactions to digital channels has reduced operating costs, but transaction revenue has risen steadily. This has been most noticeable over the past two years.” The implementation of digital payments increases bank cost efficiency and creates new revenue opportunities through high-value and high-frequency transactions (Haryanto & Septiawan, 2024). On the other hand, the study also found that digital payments strengthen DPK growth through increased transaction activity and merchant

integration, which drives cash inflows into bank accounts. In an interview, one of the digital transaction division officials explained,

"Small and medium-sized merchants who previously used cash now have their daily transactions automatically stored in their accounts. This is what makes their business savings increase." Digital financial services are positively associated with increased bank funding stability in emerging markets (Safiullah & Paramati, 2022).

In addition, digital financial inclusion is also an important finding in this study. The widespread adoption of e-money, QRIS, and mobile banking has contributed to an increase in the number of active accounts, especially among MSMEs and segments of the population that were previously underbanked. One regulator noted, "Digital onboarding and electronic payments have enabled people who previously did not have accounts to finally enter the formal ecosystem. This expands the banking savings base." Digital inclusion contributes to expanding financial access and strengthening community relationships with banking institutions (Fadhilah, 2025). In terms of risk and governance, informants also highlighted challenges that increase with digitalization, particularly related to cyber risks, application-based fraud, and the need for stronger mitigation measures against third-party providers. However, the majority of informants agreed that these risks can be managed through security policy updates, AI-based transaction monitoring, and increased customer digital literacy.

Table 1. Summary of Research Findings

Key Findings	Key Description	Interview Evidence
Impact on Profitability	Digital payments increase fee-based income and reduce operating costs	"Transaction revenue has risen steadily after the digital migration." (Bank An informant)
DPK Growth	Digital transaction settlements increase business and retail account balances	"MSMEs have experienced an increase in their business savings account balances." (Bank B informant)
Financial Inclusion	Digital onboarding and e-payments expand account ownership	"The unbanked segment is beginning to enter the formal system." (Regulator)
Governance & Risk	Digital payments increase cyber risk & require mitigation	"Digital fraud is on the rise but can be managed with AI monitoring." (Bank C IT Informant)

5. | DISCUSSION

The results of this study reinforce the idea that digital payments have become a strategic turning point in the evolution of banking, not only as a transaction channel, but as a major driver of transformation in banks' revenue, liquidity, and risk models. As discussed in modern fintech literature, the development of digital payment technology has enabled banks to shift most of their business models towards more sustainable fee-based income (FBI), as analyzed in a systematic review by Tarawneh et al. (2024). In

their study, fintech was identified as a significant factor in bank profitability, with metrics such as digitization, electronic payments, and infrastructure investment playing an important role in strengthening non-interest income (Tarawneh et al., 2024). Thus, the results of this study are in line with the findings that digital payments open up new revenue opportunities through transactions, processing, and value-added services, which contribute to the diversification of bank income.

However, this transformation also comes with challenges in terms of stability and risk. The existence of fintech and digital payment companies can affect the financial stability of banks, especially in the context of liquidity and exposure to risk (Safiullah & Paramati, 2022). For example, the constant flow of digital funds and poorly managed transaction floats can put pressure on the bank's funding structure if not combined with robust liquidity management, thereby creating potential volatility in third-party funds. In addition, the literature on risk shows that the adoption of fintech increases operational and technological exposure, which requires a more mature governance framework. Fintech digitalization opens up opportunities for diversification but also increases the need for risk management through big data, AI, and advanced surveillance systems (Li et al., 2022)

Regarding security and trust, these aspects have become critical with the growth of cybersecurity threats to payment systems. A systematic study by Jafri et al. (2024) confirms that the variables of trust and security greatly influence the adoption of fintech in the banking sector. If users and banking institutions fail to address security challenges, the potential for growth in digital transactions could be hampered by concerns about data leaks, fraud, or cyberattacks. In this context, strengthening regulations and operational policies is crucial to ensure that digital payment channels remain secure and provide long-term benefits for banks and customers.

In addition, in the realm of regulation and governance, changes in business models driven by fintech are forcing banks and policymakers to reformulate their supervisory frameworks and operational policies. According to a study by Fahrudin et al. (2024), technology-based regulatory approaches such as decentralized technologies can be a solution for managing fintech risks, especially operational and policy risks, through transparency and a more resilient architecture (Fahrudin et al., 2024). Meanwhile, from the banks' perspective, there is a real need to improve IT governance, strengthen inter-regulator cooperation, and invest in digital operational resilience in order to cope with potential technological disruptions. The balance between encouraging fintech innovation and maintaining stability is a major challenge in this era of digital payments.

Overall, the discussion of the results of this study confirms that digital payments have a multidimensional impact that cannot be separated from the challenges of risk and regulation. The main leverage lies in the ability of banks to utilize digital transaction channels as a source of FBI and liquidity, but the sustainability of this model depends on the effectiveness of governance, operational and cyber risk management, and adaptive regulatory policies. If managed wisely, digital payments can strengthen

banking stability, increase inclusion, and drive long-term profitability. However, if neglected, the risks that arise could erode trust and threaten the integrity of the financial system.

6. | CONCLUSION

This study concludes that the development of digital payment systems has become a transformational factor that significantly changes the direction of banking strategies, revenue structures, and liquidity foundations. Digital payments not only function as a medium of transaction but have also developed into a main pillar in increasing bank profitability through the expansion of fee-based income, operational process efficiency, and the creation of value-added services that deepen the relationship between banks and customers. The increase in digital transaction activity also has a positive impact on the growth of Third-Party Funds (DPK) through automatic settlement mechanisms, changes in saving behavior, and increased transactions in the MSME and retail segments. These findings reinforce global empirical evidence that the digitization of financial services expands the funding base of banks and creates a more sustainable source of liquidity.

Furthermore, this study confirms that digital payments play an important role in expanding financial inclusion. Easier access through digital onboarding, digital wallets, and QR-based payments has opened the door for underbanked communities and MSMEs to enter the formal financial system. This digital inclusion has directly contributed to an increase in the number of active accounts and the intensity of banking service usage. Thus, digital payments serve not only as a catalyst for efficiency, but also as a medium of inclusivity that strengthens national financial intermediation.

However, this study also identifies that digital transformation carries risk implications that cannot be ignored, particularly in relation to cybersecurity, fraud, dependence on third parties, and the complexity of technology governance. The success of banks in maximizing the benefits of digital payments is greatly influenced by their ability to manage these risks through improved IT governance, investment in digital security, and strengthened internal oversight policies. The role of regulators is also crucial in ensuring that innovation goes hand in hand with financial system stability through an adaptive regulatory framework, strong interoperability, and clear fund safeguarding principles.

This study confirms that digital payments have a multidimensional impact on the banking industry, namely strengthening profitability, increasing the funding base, expanding financial inclusion, while also requiring the strengthening of governance and risk mitigation. Banks that are able to balance innovation with risk governance will be in a stronger position to face digital competition in the future. Thus, digital payment transformation must be understood as a long-term strategy that not only improves financial performance but also shapes the sustainability and competitiveness of the banking industry as a whole.

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The authors declare that there is no conflict of interest.

Ethical Approval and Originality Statement

Ethical approval was obtained for this study. The manuscript represents original work and has not been previously published, nor is it under consideration by another journal.

Data Disclosure Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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