

ARTICLE

Risks, Sustainability, and Interconnection between FinTech Adoption and Traditional Investments

Oumaima Abouzaid^{1,*}

¹ *Department of Economics and Management, Chouaib Doukkali University, Eljadida, Morocco*

*Corresponding author. Email : abouzaid.oumaima@ucd.ac.ma

Received: 18 May 2026, Revised: 27 May 2026, Accepted: 29 May 2026, Published: 5 June 2026

Abstract

FinTech has rapidly transformed the global banking sector by redefining financial intermediation, investment systems and risk management practices. This paper explores the association between FinTech adoption, banking risks, sustainability performance and conventional investments in an increasingly interconnected financial environment. The study investigates the effect of digital financial innovations, including artificial intelligence, blockchain technology, cloud computing, digital payment systems, and big data analytics, on banking sustainability, financial stability, and investment interconnectedness.

The methodology is qualitative and conceptual, and it is based on a systematic review of recent academic studies published between 2020 and early 2026. The study synthesizes the existing theoretical and empirical literature on FinTech adoption, operational and cybersecurity risks, sustainable banking practices, ESG-oriented finance, and financial interconnectedness. In this paper, rather than empirically estimating these relationships, an integrated conceptual framework is developed to explain the dynamic linkages between FinTech adoption, banking sustainability, risk exposure and traditional investment systems.

The literature reviewed in this study indicates that the adoption of FinTech can have a positive impact on banking efficiency, operational flexibility, financial inclusion, customer experience, and sustainability performance through digital transformation and technological innovation. FinTech further enables ESG-oriented financial practices and the modernization of traditional investment systems. But growing reliance on digital financial infrastructures may also give rise to increasing operational, cybersecurity, regulatory and systemic risks at the same time. Moreover, stronger links between digital financial assets and traditional investment markets could increase financial contagion and market volatility in times of economic uncertainty.

This study contributes to the literature by offering a comprehensive conceptual framework that encompasses FinTech adoption, banking sustainability, financial risks, and investment interconnectedness in the contemporary financial systems. It also offers potential directions for empirical research and measurable indicators for future quantitative research. The findings are of significant interest to policymakers, financial institutions, regulators and investors who want to strike a balance between technological innovation, financial resilience and sustainable economic growth.

Keywords: FinTech adoption, sustainable banking, banking risks, financial stability, traditional investments, digital transformation, financial interconnectedness.

1. INTRODUCTION

The rapid emergence and adoption of Financial Technology (FinTech) over the past decade has led to a profound transformation of the global financial system. Developments in artificial intelligence, blockchain technology, cloud computing, big data analytics, digital payments and mobile banking have changed the architecture of financial intermediation and banking activities around the world. FinTech has become a major impetus for innovation in financial markets, enhancing efficiency in transactions, improving customer experience, increasing financial inclusion and enabling sustainable economic growth [1,2,5].

The increasing digitization of banking services has accelerated the convergence of traditional financial institutions and technology-based financial platforms. Banks are increasingly investing in FinTech solutions to improve operational performance, reduce transaction costs, strengthen risk management systems and maintain competitiveness in rapidly evolving financial markets. At the same time, developments in digital finance have led to the emergence of new investment channels such as peer-to-peer lending, digital assets, algorithmic trading and decentralized finance (DeFi), transforming the landscape of traditional investment markets.

Recent literature highlights that FinTech adoption has a positive effect on sustainable banking performance through improved operational efficiency, better access to financial services, and better environmental, social, and governance (ESG) practices [3,4]. FinTech also has an important role in promoting green finance, sustainable investments, and financial inclusion, especially in developing and emerging economies [5,6]. Furthermore, digital financial technologies allow banks to process large volumes of information in real time, enhance credit assessment models, and optimize resource allocation.

However, this growing dependence on digital technology has resulted in significant financial and operational risks. The growth of FinTech ecosystems has led to increased exposure to cyberattacks, data breaches, algorithmic failures, digital fraud and systemic technology vulnerabilities. Additionally, the interconnectedness of digital financial markets increases the risk of financial contagion, volatility in the market, and the transmission of shocks between digital assets and traditional investment markets [7]. Increased interdependence between cryptocurrencies, digital platforms and traditional financial systems has made debates on financial stability and regulatory effectiveness more acute.

The relationship between FinTech adoption and traditional investments is another important issue. The integration of digital finance into conventional financial and investment architectures has transformed the approaches to portfolio diversification and the behavior of investors in global financial markets. The growing correlation between digital assets and traditional financial instruments during economic uncertainty suggests that FinTech might have a role to play in both market efficiency and systemic interconnectedness. Accordingly, it is increasingly critical for policymakers, regulators, investors, and financial institutions to comprehend the interplay between FinTech adoption, sustainability, banking risks and traditional investments.

Previous studies have examined the impact of FinTech on banking performance, financial inclusion, sustainability and risk management separately, but there is little research that has examined these dimensions simultaneously in an integrated analytical framework. Existing literature tends to ignore the complex interconnections of technological innovation, sustainable banking performance, risk exposure, and traditional investment systems. This gap is particularly relevant in the context of growing digital transformation and financial globalization. Despite the growing literature on FinTech and sustainable finance, the existing research remains fragmented across separate dimensions such as banking performance, risk management, sustainability, and financial interconnectedness. Moreover, relatively few studies have attempted to integrate these dimensions within a unified analytical framework capable of explaining the simultaneous effects of digital transformation on financial stability and investment systems.

Given this research gap, the present study adopts a conceptual and integrative perspective rather than a direct empirical approach. The objective is to synthesize existing theoretical and empirical insights in order to develop a comprehensive framework that may guide future empirical investigations using bank-level and market-level data.

Therefore, this research aims to analyze the link between FinTech adoption, risks in banking, sustainability and traditional investments. Specifically, the study aims to analyze the impact of FinTech innovations on banking stability and sustainable performance, while at the same time influencing the interconnection between digital and traditional financial markets. Besides, the study develops a conceptual model describing the dynamic relationships of these variables in the modern financial systems.

The rest of this paper is organized as follows. The next section reviews the existing literature on the adoption of FinTech, sustainability, banking risks and financial interconnection. The following sections will discuss the theoretical framework, methodology, and conceptual analysis, and implications for financial institutions, investors, and policymakers. The last section ends with some directions for future research and policy recommendations.

2. LITERATURE REVIEW

The swift advancement of FinTech (Financial Technology) is transforming the world banking and financial markets. FinTech is the use of artificial intelligence (AI), block chain, cloud computing, big data analytics, mobile banking and digital payment systems in the financial services industry. The available literature so far has shown the usefulness of FinTech in improving operational efficiency of banking systems, reducing transaction costs, quickening financial transactions and improving customer experience. The digitization of financial services has resulted in traditional financial institutions increasingly collaborating with FinTech companies to stay competitive and evolve [8]. New technologies have also led to open banking systems, decentralized finance (DeFi), robo-advisors and digital investment platforms that have changed traditional banking models and investment practices.

A few studies found a positive relationship between FinTech adoption and sustainable banking performance. FinTech technologies are being used to optimize resources, provide paperless financial services and enhance financial inclusion in developing countries where access to traditional banking services is limited. According to Rahman et al. (2024), FinTech has a significant role in improving sustainable banking in terms of efficiency and green finance support. Likewise [9], Offiong et al. (2025) argue that FinTech innovations are crucial to achieving the sustainable development goals (SDGs) through improved access to digital financial services and promotion of green finance initiatives [10]. Investors and policymakers are also witnessing the increasing intersection of FinTech and Environmental, Social and Governance (ESG) investment strategies. Digital financial platforms are increasingly utilizing AI-based analytics and big data to assess sustainability performance and climate-related risks, enabling investors to make more informed and responsible investment decisions [11].

Furthermore, the literature demonstrates that FinTech adoption enhances long-term banking resilience and competitiveness. Sophisticated digital technologies have enabled banks to enhance their risk assessment processes, automate operations and react to changes in the market. FinTech is a strategic important tool for sustainability of businesses in hyper competitive financial markets, according to Kanojia et al. (2024) [12]. Similarly, Hidayat-ur-Rehman and Hossain (2025) found that digital transformation enhances financial stability and operational flexibility, thereby strengthening the association between FinTech adoption and sustainable banking performance [3].

The advantages of a fast uptake of FinTech technologies are clear, but there are also risks attached to them, academics say. “Operational risks and cyber security risks are the biggest risks. Banks and other financial institutions rely more and more on digital infrastructure and are more exposed to cyberattacks, data breaches, digital fraud and technology failures. The research findings of Abdul-Rahim et al. (2022) have revealed cybersecurity challenges as one of the major barriers towards FinTech adoption by financial consumers [13]. Similarly, Jafri et al. (2024) state that trust and security are vital for the successful adoption of FinTech in banking systems [14]. The proliferation of AI and automated decision-making systems also presents issues of algorithmic bias, ethical governance and system reliability.

The literature also addresses systemic and financial risks, given the links between digital financial systems and traditional investment markets. Cryptocurrencies, decentralized finance platforms and algorithmic trading systems have also increased market volatility and accelerated the transmission of financial shocks across markets. The integration of FinTech, investment systems and risk management practices changed the structure of the global financial market, increasing financial interconnectedness and contagion risk [15]. When the financial system is under pressure, the correlation between digital assets and traditional financial assets (like stocks and bonds) tends to increase. This means that the diversification benefits are lower and the systemic risks are higher.

Another big issue in the FinTech ecosystem is the uncertainty of regulations. Technology is evolving so quickly that governments and regulators cannot keep pace with changing laws and regulations. The research points out that poor supervision can damage consumer protection, anti-money laundering (AML), data privacy and financial stability (e.g. Jain et al. (2023) argued that the progress in the FinTech space requires a wider regulatory framework that can reconcile innovation, risk mitigation and financial security [16]. Similarly, Magableh et al. (2025) advocate for governance mechanisms and regulatory coordination to guarantee FinTech’s positive impact on sustainable economic development [17].

Another important issue discussed in the literature is the relationship between FinTech and traditional investment. Digital financial technologies have transformed investment strategies through automated portfolio management, crowdfunding, tokenized assets and algorithmic trading systems. FinTech platforms have been developed to make it easier for institutional and retail investors to access investments and to reduce transaction costs. The adoption of financial technology enables banks to analyze financial data in real-time and make investment decisions based on the data to improve profitability and investment efficiency [18]. Similarly, fears of financial contagion and systemic interconnectedness have been driven by the growing intersection of digital assets and traditional financial markets.

The literature on FinTech adoption, sustainability, banking performance and financial risks provides useful insights, but most of the studies analyze these dimensions separately. To our knowledge, only a few studies have developed an integrated framework to analyze simultaneously the interrelationships between FinTech adoption, sustainability performance, banking risks and traditional investment interdependence. The implications of the digital financial interconnectedness for systemic stability in the face of economic uncertainty are unclear. The present study therefore aims to fill this gap by proposing a comprehensive analytical framework linking the adoption of FinTech, the sustainability of banks, the exposure to risk and the dynamics of conventional investment in today's financial systems.

3. METHODOLOGY

This study adopts a qualitative and conceptual research approach to examine the relationship between FinTech adoption and banking risks, sustainability performance, and traditional investments. The research is mainly based on a systematic review of existing academic literature and conceptual analytical approaches in order to develop an integrated understanding of the evolving FinTech ecosystem within modern financial systems.

This paper adopts a systematic literature review (SLR) approach to identify, evaluate and synthesize the relevant academic literature on FinTech, sustainable banking, financial risks and investment interconnection. The systematic review method is widely utilized in FinTech research as it aids researchers in structuring fragmented knowledge, detecting emerging research trends, and identifying theoretical and empirical gaps in the literature [9,19]. The literature selection process includes peer-reviewed journal articles, conference papers, institutional reports and academic publications indexed in large scientific databases such as, but not limited to, Scopus, Web of Science, ScienceDirect, Springer, Emerald, Wiley Online Library and MDPI.

The review process examines studies published between 2020 and early 2026 in order to identify the most recent developments in digital finance, banking transformation, sustainability practices, and technological risks. The search process relied on keywords including "FinTech adoption", "sustainable banking", "banking risks", "financial interconnection", "digital transformation", "traditional investments", "ESG finance", "financial stability", and "FinTech risk management".

Only studies directly related to the interaction between FinTech technologies, banking systems, sustainability and investment markets were retained for analysis.

The methodology of this research is based on thematic and conceptual analysis. The retrieved literature was systematically analyzed to identify recurring themes and relationships relating to the impact of FinTech adoption on banking efficiency, sustainability performance, operational risk, cybersecurity exposure and investment behavior. The analysis also investigates the relationship between digital finance and traditional financial markets such as stocks, bonds and other investment products.

This study also includes insights from theoretical frameworks that are often adopted in FinTech and banking research, such as the Technology Acceptance Model (TAM), the Innovation Diffusion Theory (IDT), and financial intermediation theory. These models offer a theoretical background to explore the adoption of technological innovations by financial institutions and the effect of such innovations on banking sustainability and financial stability.

Although this study does not conduct direct empirical estimation, it discusses empirical methodologies commonly employed in previous FinTech and financial stability studies in order to support the proposed conceptual framework and identify future research directions. Existing studies frequently apply econometric techniques such as Vector Autoregression (VAR), Generalized

Autoregressive Conditional Heteroskedasticity (GARCH), panel regression models, and financial network analysis to investigate volatility transmission, systemic risk dynamics, and financial interconnectedness between digital and traditional investment systems [20].

To facilitate future empirical validation, the conceptual framework proposed in this study can be operationalized through measurable banking and financial indicators. FinTech adoption may be measured using indicators such as digital transaction volume, mobile banking penetration, IT investment intensity, artificial intelligence integration, blockchain adoption, and the availability of digital financial services within banking institutions. Sustainability performance may be evaluated using ESG scores, green financing activities, carbon disclosure practices, sustainable investment indicators, and financial inclusion measures. Banking risk exposure may be assessed through cybersecurity incident frequency, operational risk losses, non-performing loan ratios, liquidity risk indicators, and systemic risk measures.

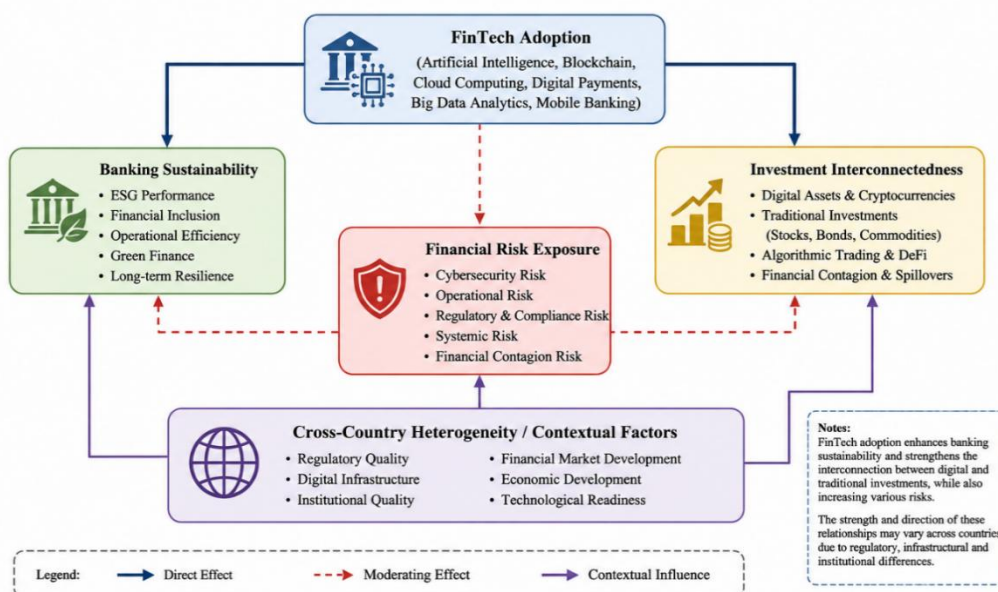
Furthermore, investment interconnectedness between digital and traditional financial markets can be analyzed using volatility spillover indices, market correlation measures, financial contagion indicators, and network connectedness models. Future empirical studies may employ panel regression techniques, VAR/VECM models, GARCH-family models, and network analysis approaches to quantitatively test the dynamic relationships proposed in this conceptual framework across different countries and financial systems.

The conceptual framework developed in this research considers FinTech adoption as the independent variable affecting banking sustainability, operational efficiency, and financial interconnection. Risk exposure such as cybersecurity risk, operational risk, and systemic risk is considered as a moderating factor affecting the relationship between FinTech adoption and sustainable banking performance. Digital financial innovation and technological integration have increased the interconnectedness between traditional investment markets and digital financial systems.

In addition, cross-country differences in regulation, technological infrastructure, institutional quality, digital maturity, and financial market development may significantly influence the relationship between FinTech adoption, sustainability performance, banking risks, and investment interconnectedness.

Figure 1 presents the conceptual framework proposed in this study. The framework illustrates the dynamic relationships between FinTech adoption, banking sustainability, financial risks, and traditional investment interconnectedness. It also highlights the moderating role of operational, cybersecurity, and systemic risks, as well as the influence of cross-country regulatory and infrastructural heterogeneity on these relationships.

Figure 1. Proposed Conceptual Framework of FinTech Adoption, Banking Sustainability, Risks, and Investment Interconnectedness



Source: Author's conceptual framework based on the reviewed literature.

The exploratory nature of the research topic and the multidimensional complexity of the relationship between FinTech, sustainability and financial risk justify the choice of a qualitative conceptual methodology. The literature on these interactions is still fragmented across different disciplines and a comprehensive conceptual synthesis is needed to provide an integrated understanding of these interactions.

However, this study presents several limitations. The research is mainly based on secondary academic literature and conceptual analysis, which may limit the generalizability of the findings across different financial systems and regional contexts. In addition, the absence of direct empirical testing constrains the ability to establish causal relationships between variables.

Future research should therefore rely on real-world banking and financial market data in order to empirically validate the relationships proposed in this conceptual framework using cross-country comparative analyses and advanced econometric methodologies.

In conclusion, the proposed methodology offers a robust analytical framework to explore the effects of FinTech adoption on banking sustainability, financial risks, and the interconnectedness between digital and traditional investment systems within the context of ongoing financial transformation.

4. CONCEPTUAL DISCUSSION AND IMPLICATIONS

4.1 FinTech Adoption and Sustainable Banking Performance

FinTech adoption positively influences banking sustainability and operational performance, according to the current literature. The operational infrastructure of modern banking institutions has been transformed through the deployment of advanced digital technologies such as artificial intelligence, blockchain, cloud computing, big data analytics and digital payment systems. These technologies assist banks to improve transaction efficiency, reduce operational costs, accelerate service delivery and enhance customer experience.

FinTech also promotes sustainable banking by offering paperless financial services, digital financial inclusion, and ESG-based investment strategies. Green funding initiatives, sustainable investment products and climate-related risk assessment systems are increasingly being used by financial institutions to improve their environmental and social performance. Previous research has shown that digital transformation enhances the efficiency of resource allocation and financial innovation ability, thus improving the core competitiveness of the banking industry and its long-term ability to adapt to changes.

FinTech adoption increases access to financial services in developing and emerging economies where traditional banking infrastructure is limited. Mobile banking platforms, digital payment systems, and peer-to-peer financial services are helping to broaden financial inclusion and remove barriers to financial access. Hence, FinTech has a significant role to play in promoting sustainable economic development and assisting wider financial inclusion across different economic sectors.

In addition, the adoption of artificial intelligence and big data analytics enables financial institutions to process large datasets in real-time, refining credit assessment processes, customer risk profiling and strategic decision-making. Technology capabilities enable greater operational flexibility and help banks react quickly to rapidly changing market conditions.

4.2 FinTech-Related Risks and Financial Stability

While adoption of FinTech offers many benefits, the growing dependence on digital financial infrastructures exposes financial institutions to greater operational, cybersecurity, regulatory and systemic risk. The digitalization of banking activities enhances banks' reliance on interconnected technological systems, cloud computing platforms and automated decision-making mechanisms which may create new vulnerabilities in the financial system.

One of the most critical challenges of digital financial transformation is cybersecurity risk. Banks and financial institutions are facing more and more cyberattacks, digital fraud, data breaches, ransomware attacks and technology disruptions. In addition, the increasing deployment of AI and automated financial systems raises issues related to algorithmic bias, data privacy, ethical governance, and the dependability of such systems.

Technological failures, software malfunctions, system outages, and inadequate digital infrastructure management may also increase operational risks within banking institutions.

4.3 Interconnection Between Digital and Traditional Investment Systems

The rapid evolution of FinTech has brought about a deep change in traditional investment systems and in the dynamics of financial markets. New forms of investment intermediation have also emerged through digital financial technologies, such as automated portfolio management, robo-advisory services, decentralized finance systems, crowdfunding platforms, tokenized assets, and algorithmic trading mechanisms.

These innovations have increased the interlinkages between digital financial assets and traditional investment tools such as stocks, bonds and commodities. Financial institutions and investors are adding digital financial tools to their portfolio management strategies to improve market efficiency, lower transaction costs, and optimize the investment decision-making process.

However, the literature suggests that the rising correlation between digital assets and traditional financial instruments might reduce diversification benefits during times of financial stress. In periods of economic instability, financial interdependence is increasing and thus the transmission of volatility and systemic risk between markets is increasing. This means that shocks from digital financial ecosystems will increasingly affect traditional financial systems and investment markets.

Thus, the incorporation of digital financial technologies in investment systems has generated both opportunities and challenges for financial stability. FinTech encourages innovation, efficiency and broader access to investment, but it also creates complexity and interdependence in financial markets. In this evolving financial environment, investors, financial institutions and regulators need to develop more sophisticated risk management strategies to tackle emerging digital financial risks.

4.4 Regulatory and Cross-Country Implications

The effect of FinTech adoption may vary significantly across countries due to differences in regulatory quality, technological infrastructure, institutional governance, digital maturity and financial market development. Generally, developed economies possess more advanced digital ecosystems, stronger cybersecurity frameworks, and more sophisticated financial regulatory systems. Developing and emerging economies may face infrastructural constraints, lower digital financial inclusion, regulatory uncertainty and limited technological readiness.

These cross-country differences matter for how much FinTech adoption contributes to sustainable banking performance and financial stability. Regulatory heterogeneity can also affect the ability of financial institutions to mitigate cybersecurity risks, protect consumers and promote financial resilience in fast-evolving digital financial ecosystems.

Additionally, institutional quality and the effectiveness of regulation may affect the relationship between FinTech innovation and exposure to systemic risk. Countries with stronger governance and regulatory adaptive systems are likely to be better positioned to harness the benefits of digital financial transformation while minimizing operational and financial vulnerabilities.

For this reason, policymakers and financial regulators should establish flexible and adaptive governance frameworks capable of balancing technological innovation, financial inclusion, consumer protection, cyber resilience and financial stability. International regulatory coordination may also become more important as digital financial systems increasingly cross national borders and global financial markets become more interconnected.

Future empirical research should use cross-country comparative approaches to better understand the effect of institutional, technological, and regulatory heterogeneity on the relationship between FinTech adoption, sustainability performance, banking risks, and traditional investment interconnectedness.

5. CONCLUSION

The rapid progress of Financial Technology (FinTech) has transformed the global banking industry and the structure of modern financial systems tremendously. This study investigated the effect of FinTech

adoption, banking risks, and sustainability performance on traditional investments in a more interlinked financial world.

FinTech technologies like artificial intelligence, blockchain, digital payment systems, cloud computing and big data analytics could have a positive impact on banking efficiency, financial inclusion, operational flexibility and sustainable financial performance, based on the literature reviewed in this study. Digital transformation can help financial institutions improve customer experience, reduce transaction costs, increase operational resilience and enhance ESG-oriented financial practices.

The conceptual analysis also shows the growing role of FinTech in sustainable banking and financial innovation. Digital financial technologies contribute to the promotion of green finance initiatives, improved financial accessibility, and the modernization of investment systems. Furthermore, the use of FinTech leads to better risk assessment and a more efficient allocation of financial resources in banking institutions.

But the growing dependence on digital financial infrastructures also creates significant operational, cybersecurity, regulatory and systemic risks. As digital finance links more closely with traditional investment markets, it may increase vulnerability to financial contagion and volatility in times of economic uncertainty. Hence, the advantages of technological innovation need to be counterbalanced by strong governance mechanisms, flexible regulatory frameworks, and effective cybersecurity strategies.

We also highlight in this study the changing relationship between digital and traditional investment systems. The combination of decentralized finance platforms, algorithmic trading systems, digital assets and automated investment technologies has revolutionized portfolio management and financial market dynamics. But greater interconnectedness between digital assets and traditional financial instruments may diminish diversification benefits and increase systemic vulnerabilities in times of financial crisis.

Our study contributes to the literature by developing an integrated conceptual framework that links FinTech adoption, banking sustainability, financial risks and investment interconnectedness. In contrast to empirical studies using bank-level datasets, this study adopts a conceptual and integrative approach to synthesize the fragmented literature and identify future research directions.

There are some limitations of this study. First, the analysis is mainly based on secondary academic literature and conceptual synthesis, which limits the possibility of establishing direct causal relations between variables. Second, the proposed framework may not be generalizable across countries, given differences in regulatory systems, technological infrastructure, institutional quality, digital maturity, and financial market development.

Future research should therefore empirically test the relationships proposed in this study using real-world banking and financial market data. Deeper insights into the long-term effects of FinTech adoption on banking stability, sustainability performance and financial interconnectedness can be achieved through cross-country comparative analyses, panel data approaches, ESG indicators and econometric techniques like VAR/VECM models, GARCH-family models and financial network analysis.

In conclusion FinTech is an opportunity and challenge for the future of banking and financial markets. Digital financial innovation, for promoting efficiency, sustainability and modernization of investment, also raises the complexity and interconnectedness of financial systems. Thus, policy makers, regulators, financial institutions and investors need to work together to develop balanced strategies which can promote technological innovation while ensuring financial stability and sustainable economic growth.

AI Tool Usage Statement: No AI or AI-assisted tools were used in the preparation of this manuscript.

Funding Statement: This study was not funded by any external sources.

Contribution: The authors contributed to the research and writing of this article and have read/agreed to the published version of the manuscript.

Informed Consent Statement: Not applicable.

Data Availability Statement: The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Conflict of Interest Statement: The authors declare no conflicts of interest.

REFERENCES

- [1] Rizvi, S. A. R. (2025). *Finance, management, and society in an era of transformation: A research agenda for the future*. *International Journal of Islamic and Middle Eastern Finance and Management*, 18(6), 1241–1248. <https://www.emerald.com/imefm/article/18/6/1241/1307635>
- [2] Danladi, S., Prasad, M. S. V., Modibbo, U. M., Ahmadi, S. A., & Alhassan, A. (2023). Attaining sustainable development goals through financial inclusion: Exploring collaborative approaches to FinTech adoption in developing economies. *Sustainability*, 15(17), 13039. <https://doi.org/10.3390/su151713039>
- [3] Hidayat-ur-Rehman, M., & Hossain, M. (2025). Digital transformation and sustainable banking performance: The moderating role of FinTech adoption. *Business Strategy and Development*, 8(1), 33-49. <https://doi.org/10.1002/bsd2.401>
- [4] Campanella, F., D'Angelo, E., & Del Giudice, M. (2023). FinTech and sustainable finance: Emerging trends and future perspectives. *Technological Forecasting and Social Change*, 190, 122386. <https://doi.org/10.1016/j.techfore.2023.122386>
- [5] Habib, A. M. (2025). Fintech and sustainability: Perspectives from emerging markets. In *Trends and Challenges of Electronic Finance in Emerging Economies* (pp. xx–xx). Springer. https://doi.org/10.1007/978-981-96-3304-3_7
- [6] Dhar, B. K., Roshid, M. M., Dissanayake, S., & Chawla, U. (2025). Leveraging FinTech and GreenTech for long-term sustainability in South Asia. *Finance Research Letters*, 67, 105821. <https://doi.org/10.1016/j.frl.2025.105821>
- [7] Bouriche, A., Hamli, A., & Bouriche, S. (2025). Balancing innovation and risk: Regulatory frameworks for sustainable FinTech growth. *European Journal of Business and Governance Research*. <https://eugb.ge/index.php/111/article/view/462>
- [8] Elsaid, A. (2023). The impact of FinTech on traditional banking models. *International Journal of Financial Studies*, 11(2), 78-92. <https://doi.org/10.3390/ijfs11020078>
- [9] Rahman, M. S., Moral, I. H., Kaium, M. A., & Sarker, G. A. (2024). FinTech in sustainable banking: An integrated systematic literature review and future research agenda with a TCCM framework. *Green Finance*, 6(1), 102-128. <https://doi.org/10.3934/GF.2024005>
- [10] Offiong, U. P., Szopik-Depczyńska, K., & colleagues. (2025). FinTech innovations for sustainable development: A comprehensive literature review and future directions. *Sustainable Development*. <https://doi.org/10.1002/sd.70068>
- [11] Galeone, G., Ferri, G., & Giannetti, C. (2024). ESG investments and FinTech innovation: Implications for sustainable finance. *Sustainability*, 16(5), 2201. <https://doi.org/10.3390/su16052201>
- [12] Kanojia, S., Kaur, S., & Bhavya. (2024). Business sustainability in the era of FinTech and RegTech: A systematic literature review. *Discover Sustainability*, 5(1), 76. <https://doi.org/10.1007/s43621-024-00767-5>
- [13] Abdul-Rahim, R., Bohari, S. A., Aman, A., & Awang, Z. (2022). Benefit-risk perceptions of FinTech adoption for sustainability from bank consumers' perspective. *Sustainability*, 14(14), 8357. <https://doi.org/10.3390/su14148357>
- [14] Jafri, J. A., Amin, S. I. M., Rahman, A. A., & Nor, S. M. (2024). A systematic literature review of the role of trust and security on FinTech adoption in banking. *Heliyon*, 10(2), e24018. <https://doi.org/10.1016/j.heliyon.2024.e24018>
- [15] Chuang, Y., & Shrestha, P. (2025). Financial interconnectedness and digital investment systems in FinTech markets. *Journal of Risk and Financial Management*, 18(3), 145. <https://doi.org/10.3390/jrfm18030145>
- [16] Jain, R., Kumar, S., Sood, K., Grima, S., & Rupeika-Apoga, R. (2023). A systematic literature review of the risk landscape in FinTech. *Risks*, 11(2), 36. <https://doi.org/10.3390/risks11020036>
- [17] Magableh, K. N. Y., Badwan, N., Al-Nimer, M., Al-Khazaleh, S., Abdallah-Ou-Moussa, S., & Chen, Y. (2025). Role of financial technology (FinTech) innovations in driving sustainable development:

- A comprehensive literature review and future research avenues. *Journal of Science and Technology Policy Management*. <https://doi.org/10.1108/JSTPM-02-2025-0033>
- [18] Tarawneh, A., Abdul-Rahman, A., Amin, S. I. M., & colleagues. (2024). A systematic review of FinTech and banking profitability. *International Journal of Financial Studies*, 12(1), 3. <https://doi.org/10.3390/ijfs12010003>
- [19] Ellili, N. O. D. (2022). Is there any association between FinTech and sustainability? Evidence from bibliometric review and content analysis. *Journal of Financial Services Marketing*, 27(3), 145-161. <https://doi.org/10.1057/s41264-022-00200-2>
- [20] Branzoli, N., & Supino, I. (2020). FinTech credit: A critical review of empirical research literature. *SSRN Electronic Journal*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3612726