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Digital Payments and Green Finance as Twin Drivers of Green Growth in India: Emerging Perspectives towards Viksit Bharat

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Abstract

The fast development of digital payments and green finance has changed the financial and economic environment in India by facilitating sustainable and inclusive development. This paper discusses how digital payments and green finance are twin engines of green growth in India and how they can help to realise the vision of Viksit Bharat 2047. The article emphasizes the role of digital payment systems like UPI and mobile banking, and fintech apps in enhancing financial inclusion, financial transparency, and economic efficiency. At the same time, green finance projects such as green bonds, ESG investments, and financing renewable energy have contributed to the sustainable development of the environment and low-carbon growth. The article also discusses how digital finance and green finance complement each other to advance a sustainable economic transformation. It names such opportunities as inclusive growth, green entrepreneurship, and transparent financial systems and has also addressed the challenges of digital illiteracy, cybersecurity risks and regulatory issues. The paper recommends policy actions on enhancing the digital infrastructure, increasing green financing models, and improving financial and environmental awareness. The results suggest that the combination of digital payments and green finance may play a crucial role in sustainable development, climate-resilience, and technological progress in India within the framework of Viksit Bharat 2047.

Keywords: *Digital Payments, Green Finance, Sustainable Development, Green Growth, Viksit Bharat 2047*

Introduction

Technological innovation, financial inclusion, and sustainability-oriented policy reforms are leading India to rapidly become one of the fastest-growing digital economies in the world. The country has seen impressive advances in digital financial infrastructure in recent years with initiatives to build digital infrastructure like Digital India, Unified Payments Interface (UPI), mobile banking, and fintech-based payment ecosystems. The large-scale use of digital payments has altered the conventional financial environment by increasing the efficiency of transactions, decreasing reliance on cash, boosting transparency, and facilitating economic inclusion (Kumar & Kaur, 2023). At the same time, the rising worldwide focus on environmental sustainability and climate resilience has added to the significance of green finance as a vital tool in promoting sustainable development and low-carbon economic progress (OECD, 2022).

Green finance is defined as financial investments in projects that are environmentally sustainable, development of renewable energy, green infrastructure, climate adaptation, and social responsible business practices. A significant momentum in green finance in the Indian context has been achieved due to sovereign green bonds, ESG (Environmental, Social, and Governance) investments, sustainable banking practices, and government-led climate financing (Reserve Bank of India [RBI], 2024). These are expected to align with India in attaining the Sustainable Development Goals (SDGs), carbon emissions, and net-zero in the next several decades (United Nations, 2023). As India continues to move towards the vision of Viksit Bharat 2047, the merging of digital financial systems and sustainable financing systems has taken on a more significant role in ensuring a balanced and inclusive economic growth. Digital payments and green finance are becoming known as twin drivers of green growth since they not only drive economic modernization but also help in ensuring environmental sustainability.

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Online payment systems cut paper-based operations, decrease operational inefficiencies, increase transparency and stimulate the formalization of the economy (Sinha & Bhattacharya, 2022). Green finance, in its turn, is a mobilization of capital in renewable energy and clean technologies, sustainable infrastructure, and environmentally friendly investments (World Bank, 2023). These mechanisms lead to a synergistic ecosystem that can promote sustainable consumption, resource efficiency, financial inclusion, and climate-aware economic development.

Figure 1: Pathway towards Viksit Bharat through Sustainable Finance
Source: *Developed by the Author (2026)*

Green growth is a concept that focuses on economic development that is environmentally sustainable, socially inclusive and technologically innovative. In the case of a developing economy such as India, in order to attain green growth, there must be a strategic compromise between the fast industrialization and environmental conservation. In this respect, the intersection of the digital finance and green finance brings new prospects of changing India into a resilient and sustainable economy. This shift towards sustainable development is further reinforced by the growing emphasis of the government on policies related to fintech innovation, smart governance, digital public infrastructure, and climate finance (NITI Aayog, 2023).

Although the importance of digital payments and green finance has been increasing, there is a dearth of studies on the synergies between the two in promoting green growth in India. The majority of the literature examines digital financial inclusion and sustainable finance individually, whereas the interdependence of the two areas has little research on its overall goal of Viksit Bharat. Thus, this paper tries to analyse the role of digital payments and green finance as a whole in the green development in India and the role these new financial innovations will play in helping to realise the long term national developmental agenda of the country.

The research is relevant as it offers new insights into how digitalization and sustainability can be accommodated in the Indian economic system. It also provides policy recommendations on how to enhance green financial ecosystems, enhance financial access, sustainable investments, and speed up the process of the country turning into an inclusive, environmentally responsible, and technologically advanced economy. The research through this analysis helps in comprehending how digital and green financial innovations can be strategic towards the future path of Viksit Bharat 2047.

Literature Review

1. **Digital Payments and Sustainable Economic Transformation**

The intensive growth of digital payment systems has greatly changed the Indian financial ecosystem through improving transactional efficiency, encouraging financial inclusion, and decreasing the reliance on the conventional cash-based systems. The introduction of systems like UPI, mobile wallets, internet banking, and QR-code-based payment systems have increased the pace of the shift towards a digitally empowered economy. On top of simplifying financial transactions, digital payment systems can facilitate transparency, accountability and governance efficiency in the economy (Patil and Sharma, 2021).

The growing adoption of digital payments helps in making payments sustainable because less cash is needed to be produced, fewer paper receipts are needed, and fewer costs are incurred on transportation and in-person banking. Paperless financial systems reduce carbon emissions produced during printing and logistics operations, thus contributing to the environmentally friendly economic activities (Meher and Gupta, 2022). Moreover, digital finance enhances inclusive development by facilitating access to formal financial services by rural and underserved communities using smartphones and internet access.

According to a number of studies, digital financial technologies enhance the economic resilience and innovation power. Payment ecosystems powered by FinTech allow a quicker transaction, motivate small business to join, and enhance consumer convenience, which eventually leads to productivity increase and sustainable consumption pattern (Arner, Barberis, and Buckley, 2020). In India, the government endeavors like Digital India and Jan Dhan Yojana have only enhanced digital financial adoption by combining the access to banking solutions with the development of digital infrastructure.

2. **Green Finance and Environmental Sustainability**

Green finance has become a critical policy tool to enhance sustainable development and deal with climate-related issues. It incorporates investments and other financial mechanisms to fund environmentally friendly projects like renewable energy, energy efficiency, sustainable transportation, green buildings, and climate adaptation programs (UNEP, 2021). Green finance is critical in raising funds to transform the economy to low carbon and developing a sustainable industrialized economy.

India has become more focused on green financing to help it achieve its environmental and climate goals. The emergence of sovereign green bonds, schemes of financing renewable energy, and ESG-based investment practices is an indicator of increased efforts by the country to promote sustainable economic development. Banks and other financial institutions are also incorporating the issue of sustainability in their lending and investment processes to reflect the world environmental standards (Chaudhary and Kumar, 2023).

The research studies indicate that green finance has a positive effect on the quality of the environment as it promotes investments in clean technologies and minimizes industrial activities that rely on fossil fuel. Sustainable financing mechanisms also encourage corporate responsibility, environmental governance, and resource-efficient production systems (Taghizadeh-Hesary & Yoshino, 2019). Green finance also generates jobs in renewable energy industries in developing economies and leads to economic resilience in the long term.

3. **Integration of Digital Finance and Green Growth**

The concept of incorporating digital finance into green economic policies is becoming one of the crucial avenues to sustainable development. Digital financial systems can increase the effectiveness of green financing mechanisms through increased transparency, traceability of transactions, and availability of financial services. The advent of technologies like blockchain, artificial intelligence and digital banking platforms are facilitating enhanced oversight of sustainable investments and environmental compliance (Zhang and Berhe, 2022). The effective allocation of government subsidies, climate-related incentives, and green investment funding can also be achieved with the help of digital payment infrastructure. The increasing trends of fintech application in sustainable finance encourage financial innovation and increase access to environmentally friendly investment opportunities. This digitalization-sustainability intersection helps in green growth by promoting responsible consumption, lowering transaction costs, and enhancing economic inclusiveness (Bhardwaj and Singh, 2024).

The Viksit Bharat 2047 vision in the Indian context highlights the following developmental priorities as being interrelated: technological development, inclusive development and environmental sustainability. Thus, the combination of digital payments and green finance processes can hasten the shift towards a sustainable and climate-resistant economy in India. Nevertheless, the issues of cybersecurity risks, digital illiteracy, a lack of knowledge about green investment, and regulatory issues still pose a challenge to the successful implementation of green digital financial ecosystems.

4. Digital Payments and Green Finance in India: Emerging Trends and Developments

Rapid digitalization and the increased focus on sustainable economic development have caused a major change in the financial ecosystem in India over the last decade. The growth of electronic payment systems and green finance programs has transformed the economic environment of the country by enhancing financial access, promoting innovation, and empowering the environmentally friendly development policies. These changes have gained even more significance in the realization of the long term national vision of Viksit Bharat 2047.

5. Growth of Digital Payments in India

The implementation of digital payments in India has grown significantly because of the growth in the reach of the internet, mobile devices, fintech development, and governmental aids to digital financial inclusion. Unified Payments Interface (UPI) was a breakthrough in transforming the payment ecosystem because it facilitated real-time and inexpensive transactions via various banking systems. Furthermore, online wallets, QR-codes payment services, Aadhaar-based payment services, and mobile-banking apps have made financial services more accessible and convenient to both individuals and companies (Joshi and Ghosh, 2022).

The COVID-19 pandemic further increased the use of contactless payments and cashless transactions as shoppers became more inclined to use digital payment methods due to their safety and convenience. Digital payment systems were also completely incorporated into the work of small and medium enterprises (SMEs), street vendors, and rural businesses, which increased financial inclusion and formal economic involvement (Rana and Sood, 2023). The growth of online financial infrastructure has especially improved the underserved population by minimizing geographical and procedural barriers to banking services. Digital payment systems also help in sustainable development through lessening reliance on paper money, decreasing physical banking, and decreasing the environmental expenses of transactions. Moreover, electronic transactions enhance financial transparency, minimize the risk of corruption, and enhance the efficiency of governance using traceable payment systems. All these contribute to the creation of a more responsible and eco-friendly economic system.

Table 2: Growth of Digital Payments in India

Year	UPI Transactions Volume (Bn)	Total Digital Payment Transactions (Crore)	Internet Users in India (Mn)	RBI Financial Inclusion Index
2018	3.75	2,071	483	53.9
2020	22.3	5,554	622	53.9
2022	74.0	11,369	759	60.1
2024	172.2	20,787	886	64.2

***Source**: Compiled from Reserve Bank of India, National Payments Corporation of India, Telecom Regulatory Authority of India reports, and Government of India statistics.*

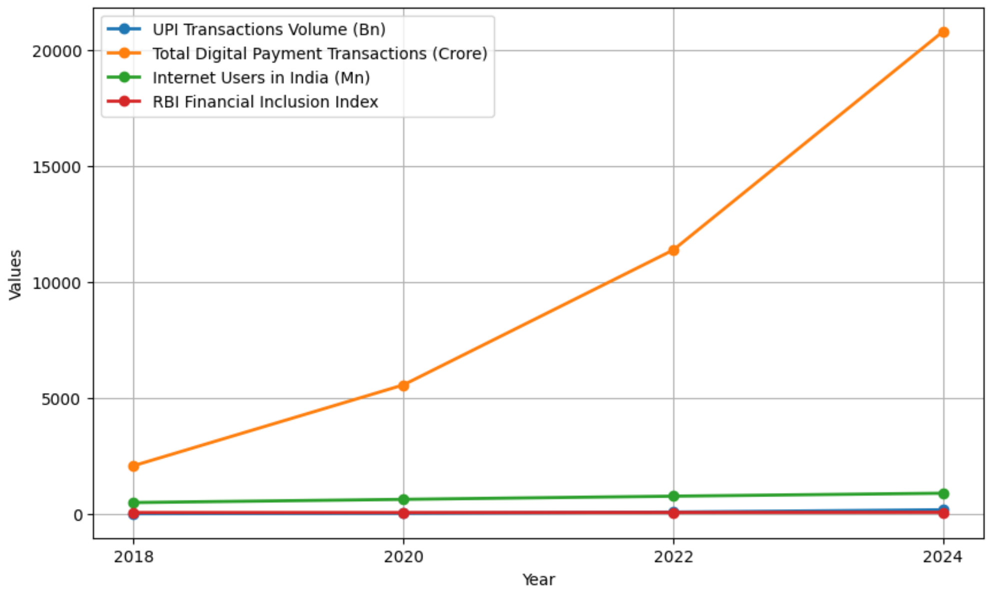

Figure 2: Growth of Digital Payments in India

The table shows the impressive rise in digital payment ecosystem in India between 2018 and 2024. The volume of UPI transactions grew by leaps and bounds, as the number of transactions grew to 172.2 billion in 2024, compared to 3.75 billion transactions in 2018, which is an indicator of a high rate of digital payment technologies adoption both in urban and rural regions. The total transaction of the digital payment also grew significantly because of the expansion of the smartphone penetration, the development of fintech, and the digitalization programs that were initiated by the government. Besides, the increase in the number of people using the internet and the enhancement of the RBI Financial Inclusion Index illustrates the growing availability of formal financial services in India. All these tendencies suggest that online payments are becoming a key component of enhancing financial inclusion, fostering economic transparency, and encouraging sustainable digital transformation.

6. Expansion of Green Finance in India

The growing concern about climate change, environmental degradation, and resource shortage have placed green finance on the list of strategic priorities of sustainable development in India. The nation has also implemented a number of financial and policy initiatives to attract investments into the renewable energy sector, sustainable infrastructure, electric mobility, and climate-resilient development initiatives (Bhattacharya & Roy, 2021). In recent years, green investments were made in the renewable energy sector of India, with a specific focus on solar and wind energy. Regulatory bodies and financial institutions are becoming more supportive of sustainable lending and investment strategies on ESG factors to make economic operations more environmentally oriented. The introduction of sovereign green bonds by the Government of India is a significant step towards marshaling climate finance to the creation of sustainable infrastructure.

Table 3: Major Green Finance Initiatives in India

Initiative	Launch Year	Objective	Sector Focus
Sovereign Green Bonds	2023	Mobilizing funds for environmentally sustainable infrastructure	Renewable Energy
National Green Hydrogen Mission	2023	Promote green hydrogen production and reduce carbon emissions	Clean Energy
PM-KUSUM Scheme	2019	Solarization of agricultural pumps and renewable energy adoption	Agriculture & Solar Energy
ESG Disclosure Framework (SEBI)	2021	Improve sustainability reporting and responsible investing	Corporate Sector
National Electric Mobility Mission Plan	2013	Encourage electric vehicle adoption and clean transportation	Transportation
Priority Sector Lending for Renewable Energy	2015	Increase institutional financing for renewable energy projects	Banking & Renewable Energy

***Source**: Compiled from Government of India reports, Reserve Bank of India, Securities and Exchange Board of India, and Ministry of New and Renewable Energy publications.*

In India, table 3 points out the significant green finance programs that have been implemented to enhance a sustainable economic development and environmental conservation. The government has been putting a growing emphasis on funding renewable energy, clean transportation, sustainable agriculture, and climate-resilient infrastructure via a number of policy instruments and investment mechanisms. Sovereign Green Bonds and the National Green Hydrogen Mission are some of the initiatives through which India is showing its efforts to minimize carbon emissions and ensure sustainable industrial growth. Likewise, initiatives such as PM-KUSUM and renewable energy financing as part of priority sector lending point to the increasing inculcation of sustainability goals into financial and developmental planning. All these efforts help India shift towards green development and build the base towards realizing the vision of Viksit Bharat 2047.

Along with governmental efforts, financial organizations and companies working in the private sector are gradually incorporating the concept of sustainability in their business and investment strategies. The green banking behaviour, sustainability-based loans, and climate-risk evaluation tools are gaining momentum in the Indian financial system (Malhotra and Singh, 2024). These trends suggest that there is a slow shift towards environmentally friendly financing paradigms which contribute to the long term economic sustainability.

7. Synergy between Digital Payments and Green Finance

The integration of digital finance with green finance opens new opportunities of fostering green development and modernization of the economy. DFTs contribute to the efficiency and accessibility of green investment processes, as well as their transparency, by facilitating the speed of transactions, enabling the tracking of funds, and financial inclusion. The use of FinTech platforms is also becoming increasingly popular in crowdfunding renewable energy projects, carbon trading systems, ESG oriented investment solutions (Lee and Chen, 2022).

Digital payment system also assists in successful implementation of government subsidy programs, environmental incentives and green financing programs. Monitoring and evaluation of sustainable investments is also encouraged by the use of data analytics, artificial intelligence, and blockchain technologies. This technological incorporation improves accountability and lowers operational inefficiencies of green financing procedures.

Digital payments and green finance intersection can play a vital role in achieving green growth goals in India by facilitating sustainable consumption habits, encouraging eco-friendly business models, and enhancing financial accessibility to green entrepreneurs and startups. However, to achieve such integration, effective digital infrastructure, cybersecurity, regulatory coordination and creating awareness among individuals on sustainable financial practices are required.

Challenges and Opportunities in Integrating Digital Payments and Green Finance

Digital payments and integration of green finance have a high potential to help in achieving sustainable development and green growth in India. Nevertheless, even with the fast development of financial technology and sustainability efforts, various structural, technological, and policy-related issues persist to influence the successful adoption of a green digital financial ecosystem. These opportunities and challenges are vital to comprehend so as to actualize the larger vision of Viksit Bharat 2047.

1. **Opportunities for Sustainable Economic Growth**

One of the major opportunities of the digital payments and green finance intersection is the financial inclusion. With minimal infrastructure, e-payment systems enable people in the rural and poor sections of the population to access banking and financial services. This extra access brings an opportunity of increased participation in green investment projects, funding of renewable energy, and environmentally-friendly entrepreneurial activity (Khan and Ali, 2022).

Green financial transactions also become more efficient and transparent due to the integration of digital technologies. Online systems enable quicker transfer of funds, real time tracking and greater accountability of climate related funding schemes. Open monitoring of green investments, carbon credits, and ESG compliance solutions can be based on sophisticated technologies such as blockchain and artificial intelligence, enhancing investor trust and reducing information asymmetry (Fernandez and Kumar, 2023).

The other great opportunity is in the promotion of sustainable consumption behavior. Financial systems that are cashless and paperless save money that would otherwise be spent on developing physical currency, transportation, and paper records. Also, e-finance tools promote green buying behavior through facilitating online transactions, computerized receipts and green business practices. The amount of green fintech startups in India also increases and this result in innovation of sustainable finance solutions and climate-related investments.

Government programs, such as the Smart Cities Mission, Digital India, Startup India, and renewable energy development programs have helped to facilitate an enabling ecosystem to involve digital finance in sustainable growth strategies. These projects facilitate innovation, construct digital infrastructure and modernization of the economy that is sustainable.

2. **Challenges Affecting Integration**

Despite such opportunities, several challenges hinder effective integrating digital payment and green finance in India. One of the major barriers is the digital divide, particularly in rural and remote regions, where the internet is still limited, digital literacy and access to technological infrastructure remains low (Sharma and Verma, 2021). The ignorance about digital financial services and access to green investment options limits the engagement of marginalized groups.

Cybersecurity risk and data privacy are the other significant threats of the digital financial ecosystem. The growing reliance on online payment systems puts consumers and financial institutions at risk of fraud, cyberattacks, identity theft, and data breach. Such issues could lead to a loss of confidence in the digital financial systems and make it more difficult to spread digital green financing systems.

The second issue that is significant is the lack of standardized regulatory frameworks of green finance. The disparities in ESG reporting, green investment classification, and sustainability reporting pose challenges to quantifying the environmental impact of a given financial activity (Wilson and Rao, 2024). Absence of coherent policy coordination among financial regulators, environmental agencies, and technological institutions is another problem that makes it difficult to build integrated green financial systems.

Moreover, the expensive upfront price of adopting developed digital technologies and green infrastructure can deter smaller financial institutions and businesses to embrace green digital practices. The rate of innovation and implementation is also influenced by the limited access to qualified professionals in the field of green finance and fintech.

3. **Policy Implications and Strategic Directions**

India needs an elaborate policy framework on technological inclusion, awareness of sustainability, and coordination of regulations to entrench digital payments and green finance. Increasing the digital infrastructure in rural regions, advancing financial literacy initiatives, and improving cybersecurity systems are necessary to raise social trust and engagement in digital financial ecosystems.

Financial institutions should also be encouraged to implement standardized practices of reporting on ESG and sustainability assessment systems by policymakers. Green fintech innovation incentives, tax incentives on sustainable investments, and public-private collaborations can further speed up the development of the environmentally responsible financial systems (Nguyen & Tran, 2023).

In addition, implementing environmental sustainability goals within digital economic policies can promote the long-term developmental goals in India. The creation of a sustainable and inclusive green financial ecosystem that can catalyze sustainable economic transformation will be highly dependent on a coordinated strategy that integrates government agencies, financial institutions, fintech companies, and environmental organizations.

4. **Policy Recommendations and Strategic Framework for Viksit Bharat 2047**

To ensure the effective integration of digital payments and green finance, it is necessary to have a comprehensive policy framework that would encourage technological innovation, environmental sustainability, financial inclusion, and institutional coordination. With India still influencing the dream of Viksit Bharat 2047, policy makers must adopt strategic solutions to strengthen the connection between the digital financial systems and sustainable development goals. The high pace of green development can be boosted by an adequate policy setting that is properly structured and at the same time offer economic stability, social inclusivity and environmental safety.

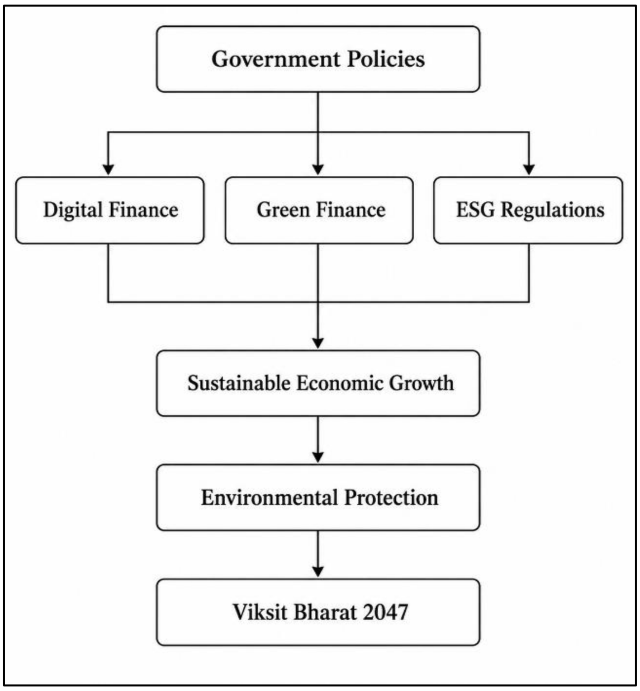

Figure 3: Integrated Policy Framework
Source: *Developed by the Author (2026)*

1. **Strengthening Digital Financial Infrastructure**

A strong digital financial system is needed to enhance sustainable and inclusive economic change. The government needs to work on expanding the high-speed internet, digital banking, and access to fintech in the rural and underserved regions. It is possible to mitigate regional inequalities by improving digital infrastructure and increasing the involvement of more people in digital financial ecosystems (Mukherjee & Das, 2022).

Furthermore, improving cybersecurity and data security procedures is crucial in instilling trust to the citizens in electronic payment systems. Financial institutions and fintech firms are encouraged to adopt advanced encryption software, fraud detection systems, and secure authentication systems to minimize cyber risks and offer more security to transactions. The level of trust and adoption can be improved by initiating awareness campaigns among the population on safe digital financial habits.

2. **Promoting Green Financing Mechanisms**

India needs to keep on increasing green financing instruments to mobilize investments to environmental sustainable sectors. The regulatory bodies and the government should promote the issuance of green bonds, sustainability-linked loans, and climate-oriented investment funds to fund renewable energy, clean transportation, waste management, and sustainable infrastructure projects (Patnaik and Bose, 2023).

To promote responsible financial practices, lending and investments decisions by financial institutions should also be based on ESG criteria. Developing a set of rules on green taxonomy and sustainability reporting can enhance transparency and assist investors to locate environmentally friendly projects. Tax incentives, lowering interest rates, and subsidies on green investments could help increase participation of both the government and business. Moreover, the provision of green entrepreneurship and climate-related startups with the help of digital financing solutions will help to generate jobs and advance sustainability based on innovations. Small-scale green businesses and rural sustainability projects may have easy access to funding solutions through FinTech-based crowdfunding and peer-to-peer lending mechanisms.

3. **Enhancing Financial and Environmental Literacy**

Green finance and financial literacy are critical elements of enhancing the use of digital payments and environmental awareness. The government agencies, financial regulators, and educational institutions ought to work together to facilitate awareness programs on digital banking, sustainable investments, climate finance, and responsible consumption behavior (Iyer and Nair, 2021). Green financial management and digital financial technologies can be more knowledgeable through training programs and capacity-building among financial professionals, entrepreneurs, and policymakers. Sustainable market behavior and demand of green financial products can also be promoted by increasing consumer awareness about the environmental friendliness of financial choices.

4. **Encouraging Institutional Collaboration and Innovation**

To design a comprehensive green financial ecosystem, the government agencies, regulatory bodies, financial bodies, fintech firms, and environmental organizations have to coordinate effectively with each other. Technological innovation, infrastructure development, and mobilization of sustainable investment can be achieved through the involvement of public-private partnerships (Garcia & Thomas, 2024). The performance of sustainable financial systems can be enhanced by the adoption of new technologies like artificial intelligence, blockchain, big data analytics, and cloud computing. These technologies allow to monitor green investments, analyse risks, examine the impact on the environment, and implement digital governance.

India must also be proactive in global sustainability and climate finance partnerships to bring foreign green investments and emulate global best practices of sustainable financial governance. The sharing of knowledge, technological development, and long-term approaches to climate resilience can be reinforced by enhancing international collaboration.

5. **Strategic Roadmap toward Viksit Bharat**

Viksit Bharat 2047 vision must be balanced and combine economic development with environmental sustainability and social inclusion. Digital payments and green finance can both be radical elements in the creation of a technologically advanced, climate-resilient and financially inclusive economy. India can transition to green growth faster through a strategic roadmap that focuses on innovation, sustainability, coordinating policies, and institutional accountability.

India can bolster its sustainable economic growth by promoting sustainable financial ecosystems, improving digital accessibility, and promoting investments that are environmentally responsible. The combination of digitalization and green finance is not only contributing to the realization of national development goals, but also significantly contributes to the global climate action and sustainable future goals.

Conclusion

Green finance and digital payments are now potent means to attain sustainable economic change in India. The speedy development of digital financial infrastructure has enhanced financial inclusion, enhanced transparency, minimized transaction inefficiencies, and hastened the shift to a digitally empowered economy. At the same time, green finance has enabled the investment in renewable energy, sustainable infrastructure, climate resilience, and environmentally friendly businesses. The two areas combined offer a good foundation towards the achievement of green growth and Viksit Bharat 2047 vision development. The paper has demonstrated that digital finance and green finance can simultaneously not only result in economic modernization, but also environmental sustainability and social inclusiveness. Digital payment systems reduce the use of paper-based financial transactions and increase the effectiveness of governance and green finance focuses the capital towards sustainable development objectives and low-carbon economic processes. It is their intersection which facilitates innovation, responsible consumption, financial access and climate-friendly development.

However, a number of challenges that impede successful implementation of an integrated green digital financial ecosystem still exist. Such problems as digital inequality, cybersecurity threats, inadequate infrastructure, inadequate financial literacy, and uneven regulations must be addressed with policies immediately. These obstacles need to be tackled through strengthening institutional coordination, digital infrastructure, increased sustainability consciousness, and facilitating regulatory progress to harness the benefits of sustainable financial transformation to the fullest. The paper concludes that a careful combination of digital payments and green finance can greatly empower the journey towards sustainable and inclusive development in India. India can lead the world in the sustainable economic growth through technological innovation, sustainable investment and financing of inclusive financial systems. The cooperative digitalization-green finance will be the key to creating a strong, climate-aware, and economically prosperous nation that would be aligned with the long-term goals of Viksit Bharat 2047.

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Conflicts of interest

The authors declare that there are no conflicts of interest regarding the publication of this paper

References

1. Arner, D. W., Barberis, J., & Buckley, R. P. (2020). FinTech and sustainable finance: Digital transformation and environmental sustainability. *Asia Pacific Law Review, 28*(1), 1–24.
2. Bhardwaj, S., & Singh, R. (2024). Digital finance and green growth nexus in emerging economies. *Journal of Sustainable Economic Development, 15*(2), 88–103.
3. Bhattacharya, S., & Roy, T. (2021). Green financing and sustainable infrastructure development in India. *Journal of Environmental Economics and Policy, 10*(3), 301–318.
4. Chaudhary, N., & Kumar, V. (2023). Green finance initiatives and sustainable development in India. *International Journal of Green Economics, 17*(3), 215–229.
5. Fernandez, L., & Kumar, S. (2023). Blockchain, transparency, and green finance innovation in emerging economies. *Journal of Financial Technology and Sustainability, 7*(2), 91–108.
6. Garcia, M., & Thomas, P. (2024). Public-private partnerships and sustainable financial innovation in developing economies. *Journal of Sustainable Policy and Governance, 16*(2), 88–104.
7. Iyer, R., & Nair, S. (2021). Financial literacy and sustainable consumer behavior in the digital economy. *International Journal of Consumer Studies, 45*(5), 933–947.
8. Joshi, M., & Ghosh, S. (2022). Digital payment adoption and financial inclusion in post-pandemic India. *International Journal of Digital Economy, 6*(2), 44–59.
9. Khan, M., & Ali, R. (2022). Financial inclusion and digital transformation for sustainable development. *International Review of Economics and Finance, 14*(3), 210–225.
10. Kumar, R., & Kaur, P. (2023). Digital payment systems and financial inclusion in India: Emerging trends and challenges. *International Journal of Financial Studies, 11*(2), 45–58.
11. Lee, J., & Chen, H. (2022). FinTech innovation and green finance integration: Opportunities for sustainable development. *Sustainability and Finance Review, 14*(1), 67–81.
12. Malhotra, R., & Singh, D. (2024). Green banking and sustainable financial practices in emerging economies. *Asian Journal of Sustainable Finance, 9*(1), 112–126.
13. Meher, B., & Gupta, S. (2022). Environmental implications of digital payment adoption in India. *Journal of Cleaner Production and Finance, 8*(4), 122–135.
14. Mukherjee, A., & Das, P. (2022). Digital infrastructure and inclusive financial development in India. *Asian Economic and Financial Review, 12*(7), 521–538.
15. Nguyen, T., & Tran, P. (2023). Policy frameworks for green fintech and sustainable finance development. *Global Journal of Sustainable Policy, 11*(1), 56–72.
16. NITI Aayog. (2023). *India's pathway to sustainable and green economic growth*. Government of India.

17. OECD. (2022). *Green finance and investment: Mobilising sustainable finance for climate transition*. OECD Publishing.
18. Patil, A., & Sharma, P. (2021). Digital payment systems and economic modernization in India. *Indian Journal of Economics and Development, 9*(1), 54–67.
19. Patnaik, L., & Bose, R. (2023). Green bonds and climate finance strategies in emerging markets. *Journal of Environmental Finance and Investment, 9*(3), 176–191.
20. Rana, P., & Sood, K. (2023). Cashless economy and digital transformation in India: Emerging perspectives. *Journal of Contemporary Economic Studies, 18*(4), 233–247.
21. Reserve Bank of India. (2024). *Report on trend and progress of banking in India 2023–24*. RBI Publications.
22. Sharma, V., & Verma, A. (2021). Digital divide and barriers to financial inclusion in rural India. *Indian Journal of Social and Economic Development, 5*(4), 144–159.
23. Sinha, A., & Bhattacharya, J. (2022). Digital finance and sustainable economic development in emerging economies. *Journal of Sustainable Finance & Investment, 12*(4), 611–628.
24. Taghizadeh-Hesary, F., & Yoshino, N. (2019). The way to induce private participation in green finance and investment. *Finance Research Letters, 31*, 98–103.
25. United Nations Environment Programme (UNEP). (2021). *Green finance for sustainable development: Global status report*. UNEP Publications.
26. United Nations. (2023). *Sustainable Development Goals Report 2023*. United Nations Publications.
27. Wilson, E., & Rao, N. (2024). ESG regulations and green finance governance in developing economies. *Journal of Environmental Governance and Policy, 13*(1), 32–49.
28. World Bank. (2023). *Financing green growth in developing economies*. World Bank Group.
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30. Zhang, D., & Berhe, M. Y. (2022). Digital technologies and green finance integration for sustainable growth. *Technological Forecasting and Social Change, 180*, 121–137.