

Original Article

Role of Artificial Intelligence in Promoting Green Lending and Sustainable Banking: A Conceptual Study

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Manuscript ID:
CSJ-2026-020232

Volume 2

Issue 2

Pp. 164-169

April 2026

ISSN: 3067-3089

Submitted: 12 Mar. 2026

Revised: 25 Mar. 2026

Accepted: 15 Apr. 2026

Published: 30 Apr. 2026

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DOI: 10.5281/zenodo.21155036

DOI Link:

<https://doi.org/10.5281/zenodo.21155036>



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Abstract

The growing urgency of climate change and environmental degradation has compelled the financial sector to adopt sustainable practices, particularly through green lending and sustainable banking. Artificial Intelligence (AI) has emerged as a transformative enabler in this transition by enhancing decision-making, risk assessment, and operational efficiency. This conceptual study explores the role of AI in promoting environmentally responsible financial systems. It examines how AI-driven tools—such as machine learning, predictive analytics, and natural language processing—can support banks in evaluating environmental, social, and governance (ESG) risks, identifying green investment opportunities, and ensuring compliance with sustainability frameworks. Additionally, AI facilitates improved credit scoring models that incorporate environmental risk factors, enabling more accurate and responsible lending decisions. The study also highlights challenges such as data availability, ethical concerns, and regulatory complexities. By integrating AI into their core strategies, financial institutions can accelerate the transition toward a low-carbon economy while maintaining profitability and resilience. This paper provides a conceptual foundation for future empirical research and policy development in sustainable finance.

Keywords: Artificial Intelligence (AI); Green Lending; Sustainable Banking; ESG (Environmental, Social, and Governance); Machine Learning; Climate Risk Assessment; Sustainable Finance; Predictive Analytics; Financial Innovation; Environmental Sustainability.

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Introduction

Background of Green Finance and Sustainable Banking

Green finance has been identified as a significant approach for promoting sustainable development by channeling financial resources towards environmentally friendly projects and activities. Financial institutions, particularly banks, play a critical role in promoting sustainable development through green lending, green investments, and green financial policies that are environmentally friendly. Sustainable banking is a process that focuses on integrating environmental, social, and governance (ESG) factors into banking operations and lending practices. Recently, governments and regulatory bodies worldwide have motivated financial institutions to promote green finance to combat climate change and promote sustainable development.

Growing Importance of Artificial Intelligence (AI) in Financial Services

Artificial intelligence (AI) has become a revolutionary technology in the financial services sector. Financial institutions, particularly banks, are increasingly relying on AI technologies to enhance operational efficiency and decision-making processes in banking operations. Financial institutions use AI to analyse huge amounts of data to improve decision-making processes in banking operations. As digital transformation increases in the financial services sector, particularly in the banking industry, AI has become a significant contributor to promoting financial innovation in the financial services sector.

Need for Integrating AI in Green Lending Decisions

Green lending refers to the practice of lending to environmentally friendly projects and activities that promote sustainable development. Financial institutions lend to environmentally friendly projects, such as those in renewable energy, sustainable agriculture, and eco-friendly infrastructure development. However, evaluating the environmental impacts of green lending is a complex process that requires large amounts of data for decision-making in green lending operations.

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How to cite this article:

Poojary, J., Pathan, A., & Duste, T. (2026). Role of Artificial Intelligence in Promoting Green Lending and Sustainable Banking: A Conceptual Study. *CompSci Journal*, 2(2), 164–169.

<https://doi.org/10.5281/zenodo.21155036>

Financial institutions can use AI for analysing huge amounts of data for the improvement of green lending operations in the financial services sector. AI can be integrated into green lending operations to improve the accuracy and efficiency of green lending operations in the financial services sector.

Literature Review

1. **Al-Sartawi, Hussainey, and Razzaque (2022).** In the paper titled “The role of artificial intelligence in sustainable finance.”, the authors examined the role of Artificial Intelligence in sustainable finance and ESG-based decision-making. The study highlighted that AI technologies enable financial institutions to analyse complex sustainability data, evaluate environmental risks, and support sustainable investment decisions. The authors concluded that AI-driven analytics improves the efficiency and transparency of sustainable financial systems and supports long-term environmental objectives.
2. **Sharma and Pandey (2024).** In the research paper titled “Balancing green and fair: Ethical AI in sustainable finance.” The scholars examined the role of AI in promoting ethical green finance practices. The study highlighted that AI enables data-driven investment decisions, improves risk assessment for green bonds, and enhances transparency in sustainable finance markets.
3. **Davidescu et al. (2025).** In the research paper titled “Artificial intelligence in ESG and sustainable finance: A bibliometric analysis of research trends.” The researchers conducted a bibliometric analysis of research trends related to Artificial Intelligence and sustainable finance. The study found a rapid increase in academic research focusing on AI applications in ESG evaluation, climate risk assessment, and sustainable financial reporting. The findings suggest that AI plays a critical role in strengthening sustainability-oriented financial decision-making.
4. **Siriram et al. (2025)¹.** In the research paper titled “Green finance and AI in India: A synergistic approach to sustainable development and climate resilience.” The researchers analysed the relationship between green finance and Artificial Intelligence in India. The study emphasised that AI improves transparency, risk evaluation, and capital allocation in green investments. The authors also highlighted the role of AI in supporting renewable energy financing and climate-resilient financial policies.
5. **Akash and Kumari (2025).** In the paper titled, “The role of artificial intelligence in promoting sustainable and responsible investments.” The authors investigated the role of Artificial Intelligence in promoting sustainable and responsible investments. The study found that AI-based ESG analytics enables financial institutions to detect greenwashing, analyse environmental performance, and improve sustainability-oriented investment strategies.
6. **Namratha and Khanum (2025)** In the paper titled “Driving green investments with artificial intelligence: Data-driven strategies for sustainable finance.” The authors examined the role of AI in promoting green investments and sustainable finance. Their study indicated that AI-powered data analytics helps financial institutions identify environmentally responsible projects and improve green financing strategies.
7. **Zhang et al. (2025).** In the research paper titled “Eco-friendly algorithms: Artificial intelligence and green finance in European intelligent nations.” The author analysed the relationship between Artificial Intelligence development and green finance in European economies. The results showed a positive relationship between AI adoption and the growth of green financial markets, suggesting that technological innovation plays an important role in promoting sustainability-oriented financial systems.
8. **Joseph, O. O., Kevin-Alerechi, E., Olumide, O. J. T., Sunday, D., Fagbohun, O., & Olanrewaju, S. (2025).²** In the research paper titled “*Reimagining green financing with AI*.”, the study analysis, Artificial Intelligence (AI) is transforming green financing by addressing inefficiencies in risk assessment, impact verification and capital allocation. Traditional green finance models often face challenges in assessing project viability, ensuring transparency and optimizing investment distribution. AI-driven technologies, including machine learning, natural language processing (NLP) and generative AI, enhance financial decision making by analysing vast datasets to provide real-time risk assessments, predictive analytics and sustainability impact evaluations. AI-powered sentiment analysis of financial disclosures and regulatory filings improves fraud detection and green bond credibility, while reinforcement learning assists in optimizing investment portfolios for long term sustainability. A major challenge in green finance is impact verification, which AI addresses through remote sensing and geospatial analytics, enabling real-time tracking of carbon reduction, deforestation and renewable energy expansion. Blockchain integration enhances transparency by securing ESG (Environmental, Social and Governance) data and mitigating greenwashing risks. Furthermore, AI-powered conversational agents facilitate accessibility to green financing by automating regulatory compliance, guiding small enterprises and securing sustainable funding in developing economies. AI-driven automation reduces bureaucratic hurdles, making climate finance more inclusive and efficient. Case studies demonstrate AI’s role in enhancing sustainable finance practices and ensuring accountability in green investments. This study proposes policy recommendations for ethical AI adoption and regulatory frameworks to balance innovation with financial sustainability. Through the convergence of AI, finance and sustainability, this study illustrates AI’s capacity to foster climate action, drive global sustainability progress and aid in achieving a net-zero economy.
9. **Zhang et al. (2025).** In the research paper titled, “Green finance and artificial intelligence: Catalysts for promoting sustainability?” The authors examined the dynamic relationship between Artificial Intelligence and green finance using econometric models. The findings revealed that green finance contributes to environmental sustainability while AI enhances financial innovation and improves the effectiveness of sustainable financial markets.
10. **Sidharth and Singh (2026)** In the research paper titled “Green intelligence: AI and sustainable finance strategies for the next decade.” The authors discussed the concept of “Green Intelligence,” which refers to the strategic use of Artificial Intelligence in sustainable finance. The study argued that AI technologies such as machine learning and predictive analytics help financial institutions evaluate climate risks and improve capital allocation for environmentally sustainable projects.
11. **Elbounkify, Machado, and Iannario (2026)³.** In the research paper titled “Designing green artificial intelligence models for finance: explored the concept of “Green AI” in financial systems.” The research suggested that AI models can enhance sustainability in finance by improving environmental risk analysis, investment decision-making, and responsible lending practices. However, the study also stressed the need for responsible AI governance to minimise environmental and ethical concerns associated with AI technologies.

Research gap and Rationale of the Study

Though the literature has extensively explored the concept of green finance, sustainable banking, and Artificial Intelligence in financial services, there is limited literature available on the role of Artificial Intelligence in green lending practices. Most of the literature has

¹ Al-Sartawi, A. M. A., Hussainey, K., & Razzaque, A. (2022). The role of artificial intelligence in sustainable finance.

² Joseph, O. O., Kevin-Alerechi, E., Olumide, O. J. T., Sunday, D., Fagbohun, O., & Olanrewaju, S. (2025). Reimagining green financing with AI: A technological approach to sustainability

³ Elbounkify, I., Machado, M. R., & Iannario, M. (2026). Designing green artificial intelligence models for finance: A novel approach for sustainable and responsible adoption

focused on the role of Artificial Intelligence in the banking industry in general, whereas the literature on green finance has focused on the policies of sustainable finance and investments in the environment. However, there is less conceptual understanding of Artificial Intelligence and how it can assist in environmental risk assessment in green finance. In addition, the challenges and policy issues associated with the implementation of Artificial Intelligence in sustainable finance have not been given due consideration in the literature. Therefore, this study attempts to fill the gap in the literature by conceptualizing the role of Artificial Intelligence in green finance and sustainable banking practices.

Objectives of the Study

1. To understand the concept and significance of green lending and sustainable banking in the modern financial system.
2. To analyse the role of Artificial Intelligence (AI) in enhancing the efficiency of the banking sector.
3. To understand the role of AI technologies in the promotion of green lending.
4. To understand the opportunities and challenges associated with the adoption of AI in green lending.
5. To formulate a conceptual framework for Artificial Intelligence, green lending, and sustainable banking.

Concept of Green Lending and Sustainable Banking

Green lending and sustainable banking include the practice of incorporating environmental, social, and governance (ESG) factors into the delivery of financial services to support environmentally friendly projects.

Role of Banks in Environmental Sustainability

1. **Capital Allocation:** Banks act as intermediaries to guide investments away from environmentally harmful projects and towards more environmentally friendly projects.
2. **Risk Management:** Banks manage the environmental risks associated with projects, including the effects of climate change and pollution.
3. **Internal Sustainability:** Banks reduce their environmental footprint by implementing digital banking, reducing paper usage, and saving energy.

Importance of Sustainable Banking Practices

1. **Reputation Management:** Sustainable banking helps banks manage their reputation by aligning with the increasing customer demand for environmental responsibility.
2. **Long-Term Profitability:** Sustainable banking helps banks to profit from investing in environmentally friendly projects, which are more likely to be resilient to climate change.
3. **Environmental Protection:** Sustainable banking helps to reduce the greenhouse impact on the environment and promotes environmental conservation.

Green Lending Initiatives in the Banking Sector

1. **Green Bonds/Loans:** Banks can issue debt securities to raise funds for financing environmentally friendly projects.
2. **Eco-Friendly Mortgages/Loans:** Banks can offer lower interest rates for purchasing electric vehicles or building green homes.
3. **Sustainable Agriculture Loans:** Banks can provide loans for organic farming or solar-powered irrigation systems.
4. **Green Digitalization:** Shifting to electronic and mobile banking to significantly reduce paper dependency.
5. **Environmental Standards:** Setting strict environmental performance requirements for borrowers before approving loans.

Artificial Intelligence in the Banking Sector

Artificial Intelligence (AI), as a technology, is rapidly revolutionizing the banking industry, moving from a competitive differentiator to a core operational imperative, as 75% of large banks are currently implementing AI strategies.

How AI Supports Green Credit Assessment

Artificial Intelligence (AI) improves credit assessment by using alternative data sources, which go beyond the conventional credit score, to facilitate faster and more inclusive credit lending.

Alternative Data Analysis: Artificial Intelligence (AI) uses its algorithms to analyze GST data, electronic invoices, and electricity bills to assess the creditworthiness of borrowers, especially for Micro, Small, and Medium-Sized Enterprises (MSMEs) and renewable energy projects.

Predictive Analytics: Artificial Intelligence (AI), using its algorithms, including Long Short-Term Memory (LSTM), a variant of Recurrent Neural Networks (RNN), and decision trees, can predict the future performance of projects, for instance, solar energy output, depending on location, weather, and panel efficiency.

Automation of Approval: Artificial Intelligence (AI) can facilitate real-time credit scoring and the entire loan application process, which can be approved within a matter of hours, as opposed to weeks.

AI for Environmental Risk Evaluation

Artificial Intelligence (AI) improves the capacity of financial institutions to better identify and manage climate-related risks and environmental impacts.

1. **Enhancement of ESG Scoring:** Artificial intelligence (AI) systems, such as those offered by MSCI and Sustainalytics, utilize natural language processing (NLP) to leverage key indicators from copious amounts of unstructured data sources, including regulatory filings, news articles, and satellite images, to develop objective ESG scores.
2. **Climate Risk Modelling:** Financial organizations utilize AI to forecast the economic impact of physical climate risks, including floods and heatwaves, on loan portfolios to aid in risk identification and hedging.
3. **Mitigation of Greenwashing:** Artificial intelligence helps banks to prevent greenwashing activities by detecting contradictions between sustainability statements and independent environmental data sources, allowing banks to charge higher interest spreads on loans for firms engaging in greenwashing activities.

AI in Monitoring Sustainable Projects

After the issue of the loan, AI is used to monitor the real-time impact of the projects to ensure that they are meeting the set standards in terms of environmental performance.

Remote Sensing and Geospatial Analytics: AI and IoT devices are used to monitor the projects. This includes monitoring deforestation rates, reforestation activities, and the performance of solar parks. This provides real-time and tangible evidence of the benefits to the environment.

Supply Chain Sustainability: Machine vision is used to monitor and detect cases of water pollution, violation of labor laws, and unethical business practices in the supply chain.

Real-time Performance Monitoring: AI is used to continuously monitor emissions and ensure that credits are issued based on actual reductions and not potential reductions.

Role of AI in Enhancing Green Loan Decision-Making

The role of AI in green lending is to transform the process from a traditional and heuristic-based approach to an automated and AI-based approach to green lending and decision-making.

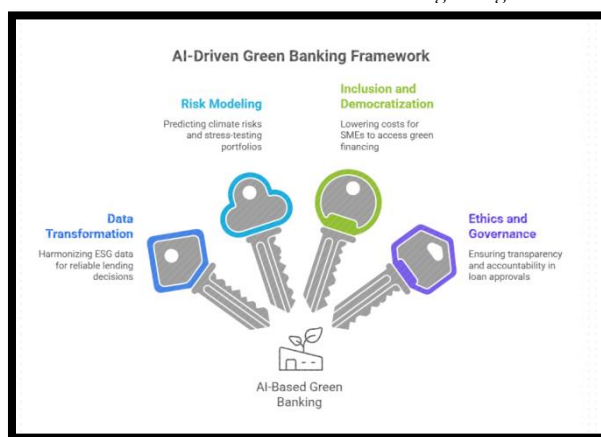
1. **Optimal Resource Allocation:** AI helps in optimizing the operations of financial institutions. This helps in eliminating inefficiencies and in finding new and promising green investment opportunities.
2. **Dynamic Pricing and Terms:** AI can be used by financial institutions to adjust the terms and conditions of the loan. This can include adjusting the installment payment terms to match the energy savings that will be realized by the client. This can be done by making the EMI payment for the solar plant lower than the electricity payment.
3. **Proactive Portfolio Management:** AI-based risk management systems can be used to monitor and act on warning signs of potential default and reputation risk.

AI-Based Framework for Green Lending

An AI-Based Framework for Green Lending is a conceptual model that integrates advanced artificial intelligence technologies into banking operations to enhance, automate, and verify sustainable finance activities. It shifts green lending from manual, qualitative assessments to automated, data-driven decisions that align with ESG (Environmental, Social, and Governance) targets

Conceptual Framework

The framework typically connects four dimensions to transform traditional banking into green banking:



AI driven Green Banking Conceptual Framework

1. **Data Transformation:** Using AI to harmonize unstructured ESG data from multiple sources (e.g., satellite imagery, news reports) to create reliable, actionable data for lending decisions.
2. **Risk Modeling and Scenario Design:** Employing Machine Learning (ML) to predict climate-related risks (floods, policy changes) and stress-test portfolios, improving accuracy over traditional methods.
3. **Inclusion and Democratization:** Utilizing AI-driven, automated credit assessment tools to lower transaction costs, enabling access to green financing for smaller enterprises (SMEs).
4. **Ethics, Governance, and Explainability:** Utilizing Explainable AI (XAI) to ensure transparency and accountability in loan approvals, minimizing algorithmic bias and preventing "greenwashing".

Relationship: AI Technologies, Green Lending, and Sustainable Outcomes

The relationship is a **3-tier process** wherein AI serves as the enabler, green lending is the operation, and sustainable banking is the goal.

AI Technologies (The Enabler):

1. **Natural Language Processing (NLP):** Scans thousands of corporate disclosures to identify ESG-related risks, regulatory compliance gaps, and greenwashing.
2. **Machine Learning (ML):** Used for credit risk evaluation, sentiment analysis and predicting renewable energy output.
3. **Internet of Things (IoT) & Satellite Imagery:** Enables real-time verification of carbon emissions, deforestation reduction, and the physical performance of green assets (like solar panels).
4. **Blockchain:** Provides a secure, immutable ledger for verifying that green loans are actually used for green projects.

Green Lending Practices (The Operation):

1. **Smarter Underwriting:** AI allows for dynamic risk assessments based on expected energy generation rather than just historical financial data.
2. **Automated ESG Scoring:** AI provides standardized, real-time ESG ratings rather than subjective manual reports.
3. **Customized Product Design:** Personalized green loan products (e.g., eco-loans, sustainability-linked bonds) are developed based on customer behaviour data.

Sustainable Banking Outcomes (The Goal):

1. **Reduced Carbon Footprint:** Lowered emissions through specialized funding for renewable energy and EVs.
2. **Enhanced Financial Stability:** Lowered non-performing assets by accurately identifying and mitigating climate-sensitive risks in portfolios.
3. **Improved ESG Performance:** Banks increase their ESG scores, enhancing reputation, attracting investors, and complying with regulations like SEBI's BRSR in India.

Explanation of the Conceptual Model

Input (TOE Model): The implementation of AI is motivated by the technological factor (IoT), organizational factor (investment in data centers) and environmental factor (regulatory environment).

Process (AI-driven GAI): AI plays the role of a 'mediator' that converts the conventional inputs to the practice of 'Green AI,' which comprises intelligent monitoring, intelligent compliance, and intelligent forecasting.

Output (Sustainability Outcomes): The AI-driven GAI system delivers the output of a 'high-efficiency green lending ecosystem' with the advantages of reduced carbon footprint of the bank's operations, prevention of 'greenwashing,' and 'high-quality' finance for the transition to a 'low-carbon' economy.

The conceptual model goes beyond the profitability of the bank by using technology to create 'environmental value.'

Opportunities and Challenges

The development of AI in the field of sustainable finance has shifted from 'pilot' to 'infrastructure' mode by 2026, leading to 'significant' improvements in the speed of underwriting and risk assessment and addressing challenges in data quality and regulatory compliance.

Opportunities

Better Credit Assessment: AI systems in 2026 have the capacity to process thousands of behavioural data points in parallel, including rent payments, subscription services and gig economy income and continuously generate updated credit profiles that are 'far more accurate' than the 'static data records' of the past.

Better Environmental Risk Analysis: AI models are able to monitor storm data using geospatial analysis and alert banks to physical environmental risks to loan portfolios. AI models also 'forecast' solar energy output using weather pattern analysis and 'tailor' loan conditions, 'lower' than electricity bills.

Faster Loan Processing: AI 'automates' document verification and underwriting, 'reducing' loan times by up to 90%. In 2026, straight through processing of small-ticket loans is the 'standard.'

Support for Sustainable Investments: AI tools 'detect' greenwashing using disclosures and media analysis and 'ensure' that investments are 'aligned' with 'sustainability goals' like the 'Net Zero' 2070 target.

Challenges

1. **High Technology Cost:** Despite large volume of data, there are still no uniform, high quality supply chains. This complicates the management of messy and unstructured information by financial institutions, particularly in an attempt to trace complex Scope 3 emissions.
2. **High Technology Cost:** AI is a costly technology, and complex systems can cost as much as ₹80 lakh to ₹4 crore in India as of 2026, including data preparation, cloud computing (ex: AWS, Microsoft Azure), and talent.
3. **Regulatory Concerns:** With increasingly important AI decision-making, black-box models have become risky as regulatory opinion on fairness, data protection, and model explainability (XAI) has become increasingly scrutinized.
4. **Ethical and Transparency Problems:** AI models can continue to reinforce biases in history when the training data is not audited.

Recommendations and Policy Implications.

Artificial Intelligence (AI) is an emerging imperative in green banking, and it is a crucial factor that allows financial institutions to pursue alignment with global net-zero objectives, ESG agenda, and sustainability models. By 2026, AI is no longer an experimental technology in the banking sector, but a universal risk management tool, customer service and to an increasing degree, sustainability-oriented lending.

Policy Investigations and Suggestions.

Green AI Standards: Policymakers will have to go beyond general AI rules by developing standards to address energy-efficient AI, where the carbon footprint of the technology will not undermine its sustainability advantages.

Mandatory ESG Disclosures: Standardized sustainability models (such as the Business Responsibility and Sustainability Report (BRSR)) should be enforced by regulators (ex: RBI, SEBI) to ensure high-quality data is available to train AI.

Green Fintech Regulatory Sandboxes: Experimental green lending products can be tested through regulatory Sandboxes, reducing risks and encouraging innovation.

Faiths: The policies should force banks to apply AI (e.g., Natural Language Processing) to verify environmental claims and avoid greenwashing in lending portfolios.

Incentivizing Green AI Investment: Governments need to offer incentives through tax breaks or preferential treatment (e.g. reduced risk weights) of AI-based green investments.

Role of Regulators and Policymakers

1. **Setting Data Governance Standards:** Facilitating safe data sharing, data privacy and avoiding algorithmic biases in AI-driven lending decisions.
2. **Facilitating Technical Infrastructure:** Establishing nationwide data centres run on "clean" or "renewable" energy, thereby providing a "Green AI" platform for banks.
3. **Standardizing Green Metrics:** Establishing a precise and unified definition for what constitutes a "green" project avoiding confusion in AI-driven project identification.

Need for AI Adoption in Green Banking

1. **Precision in Risk Management:** AI analyses physical and transition risks related to climate change, thereby improving precision in creditworthiness for green projects.
2. **Combating Greenwashing:** AI-driven tools can scan corporate disclosures and news articles to verify environmental claims and promote accountability.
3. **Optimized Resource Allocation:** Machine learning can optimize investments in sectors such as renewable energy and sustainable agriculture, thereby filling funding gaps in sustainable finance.
4. **Energy-Efficient Banking Operations:** AI-driven systems can optimize energy consumption for data centres and banking branches, thereby reducing the carbon footprint.

Strategies for Banks to Implement AI in Green Lending

1. **Migrate to Renewable-Powered Cloud Platforms:** Move AI operations and data centers to renewable-powered platforms to align AI usage with green initiatives.
2. **Embed ESG Data into Credit Scoring:** Integrate structured and unstructured ESG data—such as satellite imagery, carbon footprint data, and news sentiment—directly into existing credit risk management models.
3. **Adopt Explainable AI (XAI):** Deploy transparent AI models to ensure that lending decisions are understandable, verifiable, and free from unintended biases.
4. **Use Machine Learning for Predictive Analytics:** Implement AI models to forecast the future environmental impacts of borrowers and adjust interest rates or loan terms based on sustainability performance.

5. **Utilize RPA and Intelligent Document Processing:** Use Robotic Process Automation (RPA) to automate compliance reporting and reduce paper consumption in the lending process.
6. **Partner with Fintechs for Specialized Tools:** Collaborate with specialized providers to utilize advanced Green AI techniques, such as knowledge graphs and predictive analytics, especially if internal capabilities are limited.

Scope for Future Research

1. **Addressing "Green AI":** Research needs to mitigate the AI "green paradox," where high energy consumption from AI infrastructure offsets its environmental benefits.
2. **Explainable AI (XAI):** Developing transparent AI models is crucial to overcome algorithmic bias and to ease regulatory concerns.
3. **Harmonized Data Standards:** Future studies should focus on creating standardized global data sets to improve AI effectiveness in assessing ESG performance.
4. **Long-Term Socio-Economic Impact:** Further research is required to ensure AI integration does not increase inequality or lead to financial instability.

Conclusion

Green finance and sustainable banking have become essential for promoting environmentally responsible economic development. Financial institutions play a significant role in supporting sustainable projects through green lending and responsible investment practices. At the same time, the rapid advancement of Artificial Intelligence has transformed the financial sector by improving data analysis, risk assessment, and decision-making processes. This study conceptually highlights the potential role of Artificial Intelligence in strengthening green lending practices. AI technologies can assist banks in evaluating environmental risks, identifying sustainable investment opportunities, and improving the efficiency and transparency of lending decisions. By integrating AI into green lending frameworks, financial institutions can enhance their ability to support environmentally sustainable projects and promote responsible financial practices. Overall, the adoption of AI-driven approaches in green finance can contribute to the development of sustainable banking systems and support long-term environmental and economic sustainability. Future research may further explore empirical evidence and practical applications of AI in green finance to strengthen sustainable financial policies and practices.

Acknowledgement

The authors express their sincere gratitude to the Management of Hirwal Education Trust's College of Science (Computer Science and Information Technology), Mahad, for providing the academic environment and institutional support necessary for carrying out this conceptual study.

Financial support and sponsorship

Nil.

Conflicts of interest

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

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