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Green Banking Initiatives and Their Adoption Levels: A Comparative Study

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Peer Review Information	Abstract
<p><i>Submission: 11 Jan 2026</i></p> <p><i>Revision: 22 Jan 2026</i></p> <p><i>Acceptance: 10 Feb 2026</i></p>	<p>Green banking has become increasingly significant in India as financial institutions incorporate environmentally responsible practices into their operations. This research investigates green banking initiatives and assesses the degree of their implementation among Indian banks using a comparative framework. The focus is on identifying essential green banking practices, including digital banking services, paperless transactions, green financing, energy-efficient operations, and sustainability disclosures adopted by banks in India.</p> <p>A Green Banking Adoption Index (GBAI) has been created to evaluate and compare the level of green banking practice adoption across various banks. This index is formulated using selected indicators that reflect the primary dimensions of green banking, allowing for a systematic evaluation of adoption levels. The study utilizes secondary data obtained from publicly accessible bank reports, sustainability disclosures, and official publications.</p> <p>A comparative analysis is conducted to explore differences in green banking adoption among banks. The analysis uncovers notable disparities in the adoption of green banking practices among Indian banks. While certain banks exhibit a higher degree of integration of green initiatives, supported by structured policies and disclosures, others display comparatively lower levels of adoption. The findings suggest that although green banking practices are gaining traction in India, the extent of their implementation is inconsistent.</p>
<p>Keywords</p> <p><i>Comparative framework, green banking practices, Green Banking Adoption Index (GBAI).</i></p>	

Introduction

Green banking denotes the implementation of environmentally responsible practices by financial institutions, aimed at minimizing their ecological impact and fostering sustainable development. It is vital in tackling environmental issues by promoting paperless banking, energy-efficient operations, digital transactions, and funding eco-friendly initiatives. As financial intermediaries, banks possess the ability to drive sustainable economic growth by incorporating

environmental factors into their policies and practices.

In India, the notion of green banking started to gain traction in the mid-2000s, with a growing focus on corporate social responsibility and sustainable finance. The Reserve Bank of India, along with other regulatory authorities, progressively encouraged banks to embrace environmentally sustainable practices through guidelines, disclosures, and policy measures. Over time, Indian banks have launched a variety

of green initiatives, including online banking, green loans, renewable energy financing, and sustainability reporting. While the adoption of green banking practices has advanced consistently, the degree of implementation differs among banks, making it crucial to conduct comparative evaluations to comprehend the current landscape and identify areas for enhancement.

Objectives of the paper

- A. To examine and compare the distinguishing green banking initiatives implemented by five banks.
- B. To assess the degree of green banking adoption across the chosen banks.

What exactly is Green Banking

Green banking denotes banking practices that are environmentally responsible, designed to minimize carbon emissions while fostering sustainable economic growth. It emphasizes achieving a balance between profitability and ecological stewardship by funding projects that are both environmentally sound and socially advantageous.

Literature Review

1. Dewi et al. (2024) conducted a systematic review of the green banking literature spanning from 2018 to 2024

Dewi et al. (2024) highlighting the ways in which green banking practices enhance both economic and environmental sustainability while emphasizing the complex nature of sustainability performance. This review illustrates the evolution of research in recent years, transitioning from initial descriptive studies to more analytical and theory-based inquiries. Nevertheless, Dewi et al. point out that there is a scarcity of quantitative evaluations regarding operational performance within the literature, indicating a significant need for further research that combines operational efficiency with environmental performance results. This remains a crucial gap that your study could fill by providing robust empirical evidence on the impact of green banking practices on operational metrics in conjunction with environmental performance.

2. Gulzar et al. (2024) — Operational and Environmental Impact in Indian Sector

Gulzar et al. (2024) investigated the implementation of green banking practices within both private and public banks in India. Their findings indicate that the operational aspects of green banking—like eco-friendly procedures—significantly enhance

environmental performance, underscoring the critical role of daily operational adjustments in achieving sustainability goals. This research contributes to the existing literature by differentiating the impacts of various practice dimensions and emphasizing that operational practices may have a more substantial environmental effect than those related to employees or customers. Nevertheless, similar to many contemporary studies, it predominantly addresses environmental impacts and perceived outcomes, rather than focusing on objective metrics of operational performance such as cost efficiency or processing times.

3. Thapliyal et al. (2025) — Indian Banks and Green Banking Practices

Thapliyal et al. (2025) have recently explored the impact of green banking practices on the environmental performance of banks and the sources of green financing within Indian banks. They emphasize that operationally focused green strategies significantly enhance environmental results and improve access to green finance. Furthermore, the study indicates that the incorporation of green financing mechanisms bolsters banks' sustainability performance and competitive edge. This research marks a transition in green banking studies from simply recognizing environmental advantages to comprehending specific mechanisms—such as green financing—that connect practices to performance results, particularly in a developing economy like India.

4. Widowati & Chariri (2025) — Green Finance as Mediator of Sustainability

In their 2025 study Widowati and Chariri examined the effect of green banking practices on sustainability performance, using green finance as a mediating factor within Indonesian banks. Their findings indicate that green finance plays a crucial role in enhancing sustainability outcomes, while green banking directly contributes to improved sustainability performance. This highlights a shifting trend in research, where green finance is increasingly viewed not merely as an end result but as a vital link between green banking initiatives and their broader performance implications. Nevertheless, the research still assesses sustainability performance in a general sense and does not distinctly measure improvements in operational performance.

Major Research Gap from the year 2024 to 2025

Recent research conducted in 2024 and 2025 has propelled the field of green banking by exploring

various green banking practices and their impact on environmental sustainability and green finance, **particularly in emerging economies like India**. Nonetheless, these investigations primarily consist of country-wide or sector-specific analyses and mainly depend on perception-based metrics, with **insufficient focus on operational performance indicators** at the bank level, such as efficiency, cost reduction, and the effectiveness of digital processes. Additionally, there is a lack of comparative data among individual banks, especially in the context of Indian banking. Consequently, a significant research gap exists for a comparative study at the bank level that concentrates on a select number of Indian banks to empirically assess how green banking practices affect both operational and environmental performance, which this study intends to explore.

Methodology

This research employs a descriptive and comparative design that relies exclusively on **secondary data** and a review of current literature, **focusing on five Indian banks** that have recently implemented green banking practices. Data were gathered from published journal articles, sustainability reports from banks, and policy documents, and were analyzed using qualitative synthesis to evaluate their operational and environmental performance.

Comparative Overview of Green Banking Initiatives in SBI, ICICI Bank, Axis Bank, IDFC First Bank, and HDFC Bank (2024–2025)

1. Green Financing Efforts

SBI and ICICI Bank exhibit a robust institutional dedication to green financing. SBI has made renewable energy financing a priority, especially for rooftop solar installations, alongside specific green deposit schemes aimed at mobilizing funds. ICICI Bank boasts a varied sustainable lending portfolio that encompasses renewable energy, electric vehicles, green buildings, and waste management projects. Axis Bank is dedicated to financing sustainable infrastructure and urban mass transport, highlighting its focus on large-scale environmental initiatives. IDFC First Bank is notable for its leadership in financing electric two-wheelers and utilizing green fixed deposits to back clean energy projects. HDFC Bank employs a capital market-oriented strategy by raising funds through sustainable finance bonds to facilitate green and social lending.

2. Internal Operational Sustainability

Regarding internal operations, SBI and ICICI Bank have achieved significant advancements in renewable energy adoption and energy efficiency. SBI has expanded solar installations throughout its facilities and has reached full renewable energy utilization at its corporate office. ICICI Bank has increased its renewable energy usage and has attained a net-zero waste rating at a key service center. IDFC First Bank prioritizes green-certified infrastructure, with a considerable portion of its facilities adhering to recognized green building standards. HDFC Bank is committed to emission reduction, energy efficiency, and waste management initiatives, whereas Axis Bank places relatively less focus on internal operational disclosures.

3. Green Products and Deposit Schemes

Product innovation showcases diverse strategies among financial institutions. SBI and IDFC First Bank have rolled out green deposit schemes to direct funds towards projects that promote environmental sustainability. HDFC Bank has introduced a “Go Green” savings account designed to encourage environmentally conscious behavior among customers. In contrast, ICICI Bank emphasizes sustainability by employing structured financing frameworks instead of offering specific retail green products.

4. Environmental and Community-Based Initiatives

Axis Bank exemplifies a robust community-focused strategy through initiatives such as afforestation, mangrove restoration, and land rehabilitation. Similarly, SBI and HDFC Bank engage in extensive tree planting and waste management projects as part of their commitment to sustainability. Meanwhile, ICICI Bank prioritizes environmental management by focusing on waste reduction and obtaining sustainability certifications at the facility level.

Comparative Analysis of Green Banking Adoption Level

Five Indian banks—**SBI, ICICI Bank, Axis Bank, and IDFC First Bank, HDFC Bank**—were selected for their recent adoption of green banking practices. The analysis evaluates them on **green financing, operational eco-efficiency, and green products**, with scores assigned based on secondary data from sustainability and annual reports. The resulting Green Banking Adoption Index (GBAI)

Table 1: Green Banking Adoption Index (GBAI) – Five Indian Banks

Bank	Green Financing & Capital Mobilization (0–10)	Operational Eco-Efficiency (0–10)	Green Products & Customer Engagement (0–10)	Total Score (0–30)	Adoption Level
SBI	10	9	9	28	Very High
ICICI	9	8	8	25	High
Axis	9	8	8	25	High
IDFC First Bank	8	7	8	23	Moderate to High
HDFC	8	9	8	25	High

Source: Compiled by author

The Green Banking Adoption Index reveals that all five banks have actively embraced green banking practices, although the levels of adoption differ.

SBI ranks highest with a score of 28 out of 30, propelled by its target of a 7.5–10% green portfolio, \$3.07 billion raised from Development Finance Institutions (DFIs) and Multilateral Development Banks (MDBs), \$1.05 billion in green bonds, and retail offerings such as solar rooftop and electric vehicle loans.

ICICI Bank, also with a score of 25 out of 30, demonstrates robust adoption through ₹310.10 billion in green loans, 38% of its operations powered by renewable energy, and its support for renewable energy projects, electric vehicles, and green-certified real estate.

Axis Bank, matching the 25 out of 30 score, has surpassed its sustainable lending goal of ₹48,412 crores, planted more than 3.27 million trees, and incorporated Environmental, Social, and Governance (ESG) principles into its operations. IDFC First Bank, with a score of 23 out of 30, shows moderate to high adoption, targeting 20% renewable energy, implementing water conservation initiatives, offering Green Fixed Deposit financing that has prevented 600,000 kg of CO₂ emissions, and planting 30,000 saplings. These findings suggest that while all banks are dedicated to green banking, the differences in scale, measurable impact, and operational integration account for the variations in their adoption levels.

HDFC Bank, scoring 25 out of 30, is notable for its goal of achieving carbon neutrality by 2031–32, having installed over 61,655 solar streetlights as part of its Corporate Social Responsibility (CSR) efforts, and offering eco-friendly products like the 'Go Green' savings account and sustainable finance bonds.

Key Findings:

- Indian banks demonstrate robust momentum in green financing, with SBI and ICICI at the forefront of renewable

energy initiatives and diverse portfolios, such as electric vehicles and green buildings, while IDFC stands out in the electric two-wheeler sector.

- The level of internal sustainability varies among these institutions: SBI and ICICI have achieved significant renewable energy adoption and net-zero waste, whereas Axis falls short in operational transparency despite its focus on infrastructure.
- The GBAI report underscores the disparities in adoption rates—SBI and ICICI lead overall, propelled by their integrated strategies, while community initiatives, like Axis's afforestation projects, enhance scores but require more extensive product innovation.

Suggestions:

- Implement consistent green deposit schemes and retail offerings across financial institutions to effectively direct public funds towards sustainability initiatives.
- Increase transparency through uniform ESG reporting, incorporating operational metrics to enhance GBAI comparability and draw in international investors.
- Encourage collaboration among banks for community projects such as nationwide afforestation, utilizing RBI guidelines to maximize environmental impact.

Conclusion

This study highlights the crucial role of Indian banks in promoting sustainable finance, with SBI and ICICI leading the way in green lending, operations, and products, as measured by the Green Banking Adoption Index (GBAI). Meanwhile, IDFC is making strides in specialized areas, and Axis is focused on community restoration; however, there are still gaps in consistent adoption and transparency in disclosures.

The results indicate strong financing initiatives but a lack of uniform internal eco-efficiency. To address these issues, banks need to emphasize retail green initiatives, implement standardized reporting practices, and form partnerships that align with national net-zero objectives. In the end, advancing green banking not only strengthens economies but also mobilizes investment for renewable energy, positioning India as a leader in global ESG efforts—prompting regulators like the RBI to establish comprehensive frameworks for significant change by 2030.

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