


Impact of Green Banking Practices on Sustainable Environmental Performance and Profitability of Private Sector Banks

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ABSTRACT

Sustainable environmental performance linked with profitability has been one of the brimming concerns in the worldwide scenario. Therefore, the current study aimed to examine the impact of green banking practices on the firm's sustainable environmental performance. Further, the impact of sustainable environmental performance on firms' profitability was also measured. A survey-based research design was employed by collecting data from Private sector bank employees of India. The data analysis was performed on the selected private bank employees collected from August 2022 to November 2022 by employing the PLS-SEM method with the help of smartPLS software. The study found a significant positive relationship between bank environmental performance and profitability. Consequently, green banking policy significantly influences the day-to-day operation and funding or investment in green projects. Specifically, the study hypothesizes that green banking practices lead to improved operational efficiency, increased funding and investment in green projects, enhanced sustainable environmental performance, and improved profitability for private sector banks. The results of this study contributed to the existing literature on green banking practices and provided insights for policymakers, bank management, and other stakeholders interested in promoting sustainable banking practices.

KEYWORDS

Environmental Performance, Green Banking, Green Practices, Private Banks, Sustainable Practices

1. INTRODUCTION

Banking sector is one of the most primeval services in the world. But due to the increasing concern for eco-friendly practices, the banking sector has transformed into a new practice known as 'Green Banking Practices' (Kablana, 2015). However, green banking services are those banking practices that concern financing activities and use different financial methods to promote environment-friendly

DOI: 10.4018/IJSESD.330135

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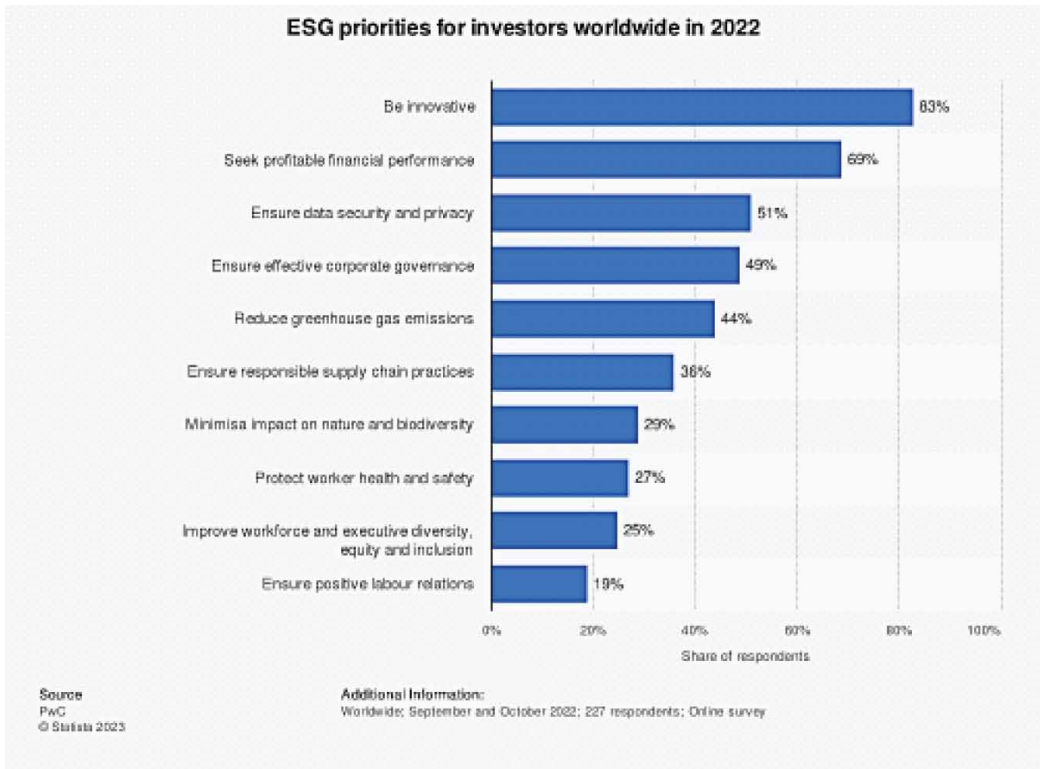
activities. Green Banking promotes social and environmental practices and lessens the usage of carbon footprints used excessively in banks (Menon et al. 2017). So, it is a step forward for sustainable development in organized and unorganized financial sectors (Dipika, 2015; Gunawan et al., 2022).

Initially, green banking was developed in the Western world in 2003 to safeguard the environment. It is deliberated as the significant approach to address sustainable development and generate attentiveness regarding environmental accountability (Risal & Joshi, 2018). It can also be considered as an extended version of 'Digital Banking.' Digital banking slightly defer from green banking as Digital banking only focuses on easing lives by using the online facilities provided by the banks whereas green banking has made lives easier by taking care of social and environmental relations (Sharma & Jain, 2021). Green banking mainly aims to lower the costs incurred in daily operations and add value to the business, reducing risk (Kushwaha et al., 2022), resulting to improve profitability. This contemporary banking practices will eventually result in the attaining of the commercial and socio-environmental goals of the banks.

Though the government of India is taking several measures to promote green banking practices, still there is dearth of awareness of this concept. As per the Indian banks association, a "green bank is a bank that mainly focuses its attention on environmental, social and governance (ESG) concerns to safeguard the environment and preserve natural resources. The nation's growth lies behind what new ideas are brought to the table and opportunities for economic growth in the long future. The various activities covered under the green banking services are in the form of green loans, which are providing loans to projects involving environment-friendly motives, green credit cards, i.e., the credit cards are biodegradable, mobile banking or internet banking by which we can reduce the paperwork and do the everyday banking transactions online (Jain & Agarwal, 2019). All these activities work to enhance environmental performance. Infact, profitable financial performance is the second most important ESG priority after innovation (Statista, 2022). It means, the organisations wish to achieve the greatest financial performance by using various ESG measures and green banking is just one among all measures. The banks, be it the public or private sector, have played an essential role in implying it, but there is a long way to go to attain the purpose of sustainable banking (see Figure 1).

The increased focus on environmental issues worldwide has put pressure on all industries, particularly financial institutions, and banks, to go green, which is currently regarded as environmentally benign. Thus, as a responsible business organization, banks must handle environmental concerns from the perspectives of their obligations and opportunities. The environment is typically not directly impacted by banking activities, but their customers' actions have a significant external impact (Hummel et al., 2021). Therefore, banks must include green banking practices in their operations, structures, investments, and financing plans. As a result, green finance aids businesses using clean and renewable energy sources in lowering their carbon footprints (Ragupathi et al., 2015). The previous literature, i.e. (Mir and Bhat, 2022; Kumar et al., 2022; Kablana, J., 2015) on green banking, was limited to encouraging environmentally friendly practices at every level of the organization and funding those projects which are environmentally focused. However, how these green initiatives achieve sustainable environmental performance is still not studied well. As a result, green banking has taken on a special position in recent studies (Chen et al., 2022; Gunawan et al., 2022) since it moves banks closer to reaching their sustainable environmental performance goals. There have been significant numbers of studies in the banking field. Only a few studies, i.e., Chen et al., 2022; Rehman et al., 2021; Risal and Joshi, 2018; Rajput et al., 2013) were found in the area of the impacts of green banking on environmental performance. Such as green banking services in Bangladesh are seen as attractive due to their social and task attractiveness. However, there are perceived risks that hinder their adoption, including financial, time, individual, and cyber risks. These risks have a negative influence on clients' behavioral intention towards green banking services. The practice of green banking in Bangladesh is supported by the Bangladesh Bank, which has issued guidelines for all scheduled banks in the country. However, there are challenges and opportunities for green banking in Bangladesh, such as the incorporation of environmental parameters, effective policy formulation, and the improvement of

Figure 1. ESG priorities for investors worldwide in 2022



online financing and banking. State-owned commercial banks and specialized development banks have shown poor performance in adopting green banking practices. Some banks are embracing the idea of green banking, while others are still hesitant (Nisha et al., 2020; qbal et al., 2021; Aubhi, 2016).

Countries in the European Union (EU) have been applying the concept of a green economy to handle multifaceted crises situations and promote sustainable development. However, implementing green economic assumptions in EU countries has been difficult. The average value of the EU countries' Green Economy Index (GEI) has fallen over time, indicating a slowing in greening activities (Lakstutiene, 2016). Achieving a green economy necessitates supporting policies and elements such as eco-innovation, open dissemination of green knowledge, financial resource availability, and fiscal changes (Gavri, 2019).

Our study contributes to the body of knowledge on green banking, green financing, bank environmental performance, sustainability and profitability of a bank in the subsequent ways: By theoretically and empirically examining various green banking practices behaviours depending on bankers' comprehension of private banks in India, the current study fills a research gap and addresses the issue of green banking practices behaviour and profitability of Bank via a sustainable environmental performance of private banks.

Majorly, the study analyzes the mediating effect of day-to-day operation and funding or investing in green projects in assessing the relationship between green banking policy and banks' environmental performance. Therefore, the main purpose of this study is to investigate the impact of green banking policy via day-to-day operation & funding or investing in green projects on banks' environmental performance in the context of private banks in India and to investigate whether green banking policy leads to bank profitability through bank environmental performance.

The remaining research paper is organized as follows: To develop hypotheses, Section 2 reviews pertinent literature on green banking policy and banks' environmental performance. The research procedures, which comprise study tools, sample and data collecting, and analysis methods, are introduced in Section 3. The analysis and findings are presented in Section 4, and their discussion is in Section 5. The conclusion, significant policy consequences, restrictions, and future scope were then covered.

2. REVIEW OF LITERATURE AND HYPOTHESIS DEVELOPMENT

Reviewing relevant studies based on existing literature plays a significant role in developing the hypothesis. A systematic literature search is important in extracting related studies based on the keywords searched on different bibliographic databases.

2.1 Green Banking Policy and Day-to-Day Operation

Thomas & Rasmus (2019) analyzed the impact of green banking on customer loyalty and concluded that green banking is essential for improving the financial sector in the coming years, and there is a positive impact on customer loyalty. Further, Aubhi (2016) stated that the government should take the necessary initiative to promote green banking practices in Bangladesh. Later, Lenin (2021) determined that the execution of green banking practices helps develop the banking sector. Tanima & Imrul (2017) determined that customers prefer green banking practices in Bangladesh, so the banks must also take action to promote the same. Parasuraman (2019) revealed that the study tried to find the importance, awareness, and benefits of green banking. Redwanuzzaman (2020) disclosed the environmental factors influencing green banking practices in the Bangladesh region. Atul et al. (2018) analyzed the issues and challenges faced by the Indian banking system in adopting green banking initiatives. Rai et al. (2019) analyzed the different perceptions of respondents in the Nepal region and concluded that Nepal is still in the initial phase of practicing green banking practices, and most customers are unaware of the activities. Mehedi & Maniruzzaman et al. (2017) determine the perception of middle-level bankers on green banking initiatives in Bangladesh region and concludes that the middle level banker's perception depends on the initiative's governments take on green banking.

Park & Kim (2020) revealed the growing demand for green banking and its developments in the private sector banks. The conclusion drawn from this study is that even though many initiatives have been taken to practice green banking services, it still has to go a long way to achieve the milestone. Razaque & Nayak (2017) revealed the various green banking initiatives India's banking sector adopted. The conclusion drawn from this study is that although many initiatives have been taken to familiarize green banking, many people are still unaware. Bohora (2018) revealed the green initiatives used in commercial banks of Nepal and concluded that most customers are unaware of green banking services. Akhter et al. (2021) analyzed the status and impacts of green banking in commercial banks in Bangladesh. The results stated that commercial banks are behind in performing green banking activities, so steps must be taken to promote the same. Therefore, it is hypothesized as follows:

H1: Green banking policy has a significant influence over the day-to-day operations of the banks.

2.2 Green Banking Policy and Funding or Investment in Green Projects

Shaumya & Arulrajah (2017) revealed different measures used to analyze the adoption level of green banking services amongst the customers in the Sri Lanka region. The findings reported that green banking has an encouraging impact on banking-related practices, whereas no impact has been seen on customer-related practices. Ahuja (2015) disclosed the challenges faced by banks due to the customers' lack of knowledge and awareness regarding green banking practices and investments in green projects. The green economy's effectiveness and the competitiveness of linked technologies

are continuously being debated (Lukas, 2015). Economic and social imbalances endanger the growth of the European green economy (Bina, 2013). Implementing sustainable development in the EU necessitates coordination and consistency in energy, resource, environmental, and development policies (Chaaben et al., 2022).

Sahoo et al. (2016) disclosed the usage of green banking facilities, which is comparatively higher in the younger generation compared to the middle and older generations. Srividya & Vijayalakshmi (2021) analyzed the effect of Covid-19 on the banking sector and its growing importance during the pandemic. The findings indicated that green banking services played a pivotal role during the pandemic helping customers to perform their banking practices safely. Chitra & Gokilavani (2020) concludes that people must be familiarized with green banking services to increase their usage and investment. Hence, it is hypothesized as follows:

H2: Green banking policy significantly influences funding or investing in green projects.

2.3 Day-to-Day Operation and Banks' Environmental Performance

Amir (2021) uncovered the norms of the bankers regarding green banking initiatives in Bangladesh and concluded that the bankers have a very positive attitude towards green banking practices. Wijenayake & Wijayasinghe (2020) analyzed the factors influencing bankers to adopt green banking policies and concluded that banks should maintain sustainable environmental practices to grab more customers. Green banking practices advise that when it comes to banking operations, it is far preferable to employ Internet banking, mobile banking, and green cards made of materials that can be recycled again, making them more paperless. Hence, it is hypothesized as follows:

H3: Day-to-day operation has a significant influence over the Bank's environmental performance

2.4 Funding or Investing in Green Projects and Banks' Environmental Performance

Catherin & Melvin (2022) analyzed the attentiveness level of green banking services among customers and concluded that very few customers are conscious of green banking services. Vijayakumar & Nagadeepa (2021) determined the customer's reaction regarding green banking services to business customers during Covid-19 and concluded that customers' opinions are positive about green banking and its implementation and investments in the Bank. Jayabal & Soudarya (2017) disclosed the level of customer satisfaction with green banking initiatives and concluded that the initiatives that were taken to familiarize green banking are insufficient, so new initiatives must be taken. Kalra (2016) disclosed the role of green banking in sustainable development and concluded that green banking services are essential for the sustainable development of any country. Hence, it is hypothesized as follows:

H4: Funding or Investing in Green Projects has a significant influence over banks' environmental performance

2.5 Bank Environmental Performance and Profitability

Environmental performance refers to a company's efforts to develop green practices and restore environmental conservation. Firm profitability is measured using return on assets. The ability of the company to generate profits with the total quantity of assets owned is referred to as ROA (Bukit et al., 2018). Rehman et al. (2021) analyzed the adoption of green banking initiatives and their impact on the environmental performance of banks in Pakistan. The European Union countries have made tremendous progress in developing green practises in the finance industry. The EU has devised a clear strategy for funding sustainable development, which includes establishing criteria to evaluate ecologically sustainable economic activity and consulting on a green bond standard (Kasztelan, 2021).

Furthermore, in light of the European Green Deal, the EU has proposed additional standards for sustainability reporting and standardisation of ESG disclosures (Nowak & Kasztelan, 2022). Green banking practises have been advocated not just in company operations but also in policymaking, with an emphasis on boosting environmental efficiency and green project finance (Chaaben et al., 2022). However, these policies have problems in terms of efficacy, such as project matching issues and asymmetries between climate innovators and private investors (Rutskiy, 2020).

It also found that better environmental performance has a significant effect on profitability. Siddik & Zheng (2021) revealed the impact of the Covid-19 pandemic on green banking practices of banking and non-financial banking institutions in Bangladesh region and concluded that the growth rate of green banking practices in Bangladesh region has been satisfactory. Hence, it is hypothesized as follows:

H5: Bank environmental performance has a significant influence over the firm's profitability

2.6 Green Banking Policy and Bank's Environmental Performance

Dipika (2015) analyzed the various challenges banks face in promoting green banking with future prospects. Yadwinder (2015) revealed that initiatives are being taken to practice green banking facilities, but a huge part of the population is still uncomfortable using or ignoring the facilities. Dharmyanthi & Teresa (2018) revealed the factors affecting the implementation of green banking in Malaysia and concluded that the banks of Malaysia need to take more initiatives regarding their policies for implementing green banking practices.

The previous studies determined the various impacts and effects of green banking on banks' performance. Risal & Joshi (2018) analyzed the different impacts of green banking on Bank's environmental performance in the Nepal region. The findings emphasized that the banks need to take more initiatives to make the idea of green banking more successful and productive for day-to-day operations. Vidyakala (2020) disclosed the impact of environmental practices, such as training, energy-efficient practices, etc., related to the daily functions of green banking. The outcomes reported that green banking services must be familiarized to the general public unaware of it. Sharma & Choubey (2022) developed a conceptual model for green banking initiatives and their impacts on banks' environmental performance. Hence, it is hypothesized as follows:

H6: Green banking policy has a significant influence over the environmental performance of the Banks.

2.7 Mediation Role of the Sustainable Environmental Performance of Banks Between Green Banking Policy and Profitability

Performance refers to how a company uses its skills and available market possibilities to fulfill organisation objectives (Horngren et al., 2002). Performance is the end result of actions carried out utilising specific measurements chosen to evaluate the work results of organisational units in achieving organisational goals (Wheelen et al., 2017). Meanwhile, bank performance is linked to competitiveness, stability, efficiency, productivity, and profitability, according to Bikker and Bos (2008). Profitability is an indicator of a company's capacity to profit from its operations (Hasibuan, 2008). Additionally, Hasibuan (2008) defines profitability as a company's ability to generate profits through the effectiveness and efficiency of its activities.

Karyani (2020) demonstrates that green banking policies have a beneficial influence on bank value while having an adverse impact on bank profitability. But some studies like (Rachman, 2021; Ratnasari et al., 2021) confirmed that green banking policies affect profitability. Hence, it is hypothesized as follow:

H7: There is a significant relationship green banking policy and profitability via Bank’s sustainable environment performance.

2.9 Conceptual Framework

Green banking policy lays down certain norms that directly or indirectly contribute to environment-friendly activities, such as providing green services related to loans, money withdrawals, credit and debit cards, online and phone banking, etc. These policies lead the path towards the nation’s economic growth while taking care of the surroundings and with a motive of sustainable development in the future perspective. At the same time, the day-to-day operations may include banking activities such as opening a bank account, monetary transactions, etc., with the view of conserving the environment, i.e., by reducing the activities which might lead to an increase in carbon footprints. At the same time, investment in green projects means that the projects and activities are carried out to benefit and sustain the environment. So basically, under this concept, funding or investing in the projects must be done, which has an environment-benefiting motive. Given the above-discussed independent and dependent variables, the conceptual framework of the present study is depicted in Figure 2.

3. RESEARCH METHODS

3.1 Sample and Sampling Methods

The study was conducted by collecting data from the Managers working in different private sector banks such as ICICI, AXIS, and HDFC Banks in India. There is total 21 private sector banks operationalized in India that embraces 4.8 lakhs CR revenue, more than 26 thousand branches spreading across India (Singh, 2023). Additionally, distributed services through more than 7.5 lakhs ATMs with collective customer base of 127 Mn (Singh, 2023). Therefore, the role of these banks in adopting green banking policies to achieve environmental performance is critical hence these banks selected for the analysis (Table 1). The study applied two-step sampling; cluster sampling, followed by convenient sampling. Respondents were selected from various states of India by using cluster sampling. Twenty-one private banks in India are networked in India with approximately 30180+ branches. Considering one bank manager in each branch, the total population for this study was 30180. A sample of 380 bank managers was selected by using Slovin’s Formula. These 380 bank managers were selected across 380 branches by using convenient sampling.

3.2 Data Collection and Survey Instrument

The study was based on the opinion of bank employees about green banking practices and their impact on the firm’s profitability. The profitability’s opinion would be determined by the perception about the environmental performance mediated by day-to-day operation and funding or investing in green projects. Therefore, due to the study’s specific nature, we used the structured survey method

Figure 2. Conceptual framework

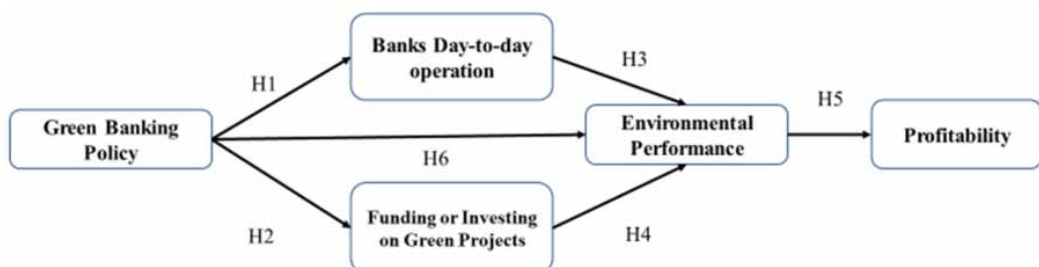


Table 1. Indian private bank details

Sr. No	Name of the Bank	Branches	Revenue (Cr)	ATM	Customer Base (Mn)
1	Axis Bank	4528	56,044.00	12000	28.00
2	Bandhan Bank	670+	7,208.00	481	17.27
3	CSB Bank	417	599.24	310	1.50
4	City Union Bank	700+	1,209.95	1762	NA
5	DCB Bank	334	96.21	112	0.60
6	Dhanlaxmi Bank	270+	65.78	112	NA
7	Federal Bank	1284	11,635.00	1606	9.70
8	HDFC Bank	5430	1,05,161.00	15292	49.00
9	ICICI Bank	5288	84,353.00	15158	NA
10	IDBI Bank	1892	135.39	3394	NA
11	IDFC FIRST Bank	260	9,098.00	199	4.00
12	IndusInd Bank	2000	24,154.00	2605	9.00
13	J&K Bank	1038	6.50	1382	NA
14	Karnataka Bank	857	315.73	1026	10.21
15	Karur Vysya Bank	779	1,07,591.00	1685	NA
16	Kotak Mahindra Bank	1500+	31,346.00	2352	17.00
17	Nainital Bank	150	11,797.46	1685	NA
18	RBL Bank	398	147.10	412	8.76
19	South Indian Bank	876	7,117.00	1400	NA
20	Tamilnad Mercantile Bank	509	408.00	11151	NA
21	YES Bank	1000+	20,269.00	1450	NA

Source: Singh (2023)

to collect primary data. A questionnaire was developed based on the scale adopted from the previous research, and a survey link was sent to the bank managers through emails. An offline survey was also conducted, considering the low response rate through the online method. Bank managers were personally contacted after scheduling a meeting with them. The survey was conducted from June 2022 to January 2023. The questionnaire was sent to approximately 1300 bank managers online and offline, of which 416 were returned. After scrutiny, 380 responses were finalized for the analysis. T-test was also applied to determine the variation in the response in online and offline methods. The significant value was reported as more than 0.05; hence, no variation was reported in the sample.

The questionnaire consists of two parts; the first comprises questions related to the respondents' demographic details, such as age, gender, education, occupation, and bank name. The second part consists of specific questions related to the study's objectives, such as the Bank's green policy, day-to-day operations, and funding for green projects. Each question was asked on a five-point Likert scale where 5 = strongly agree, and 1 = strongly disagree. The demographic profile of the sample is demonstrated in Table 1. The questionnaire was also sent to professors whose expertise in sustainable development, banking, and financials for expert Validity.

According to Table 2, an equal percent of male and female managers' data was collected to reduce gender bias, which is 49.7 and 51.3 percent. Similarly, all age group managers were covered to ensure diversity in the sample. As stated, the sample comprised 48.9 and 29.5 percent from the age group

Table 2. Sample demographic

Sample Profile	Category	Frequency	Percentage
Gender	Male	189	49.7
	Female	191	50.3
Age	20-30 year	52	13.7
	31-40 year	186	48.9
	41-50 year	112	29.5
	Above 50	30	7.9
Name of the Bank	HDFC	121	31.8
	ICICI	112	29.5
	Kotak Mahindra	26	6.8
	Axis	98	25.8
	IndusInd	11	2.9
	IDBI	10	2.6
	Yes Bank	2	0.5
State	Madhya Pradesh	125	32.9
	Maharashtra	89	23.4
	Uttar Pradesh	58	15.3
	New Delhi	29	7.6
	Chhattisgarh	15	3.9
	Assam	9	2.4
	Karnataka	4	1.1
	Uttarakhand	13	3.4
	West Bengal	12	3.2
	Punjab	26	6.8

of 31 to 40 and 41 to 50, respectively. The sample also comprised data from 7 major private-sector banks. Similarly, the sample was collected from diverse states such as East, West, North, and South.

3.3 Reliability Analysis

A reliability test was conducted using Statistical Package for Social Science (SPSS) software. It has been observed from reliability analysis that the first variable, the green banking policy, has a Cronbach Alpha value of .944 and consists of 6 items. The second variable is day-to-day operations, which has a Cronbach Alpha value of .701 and consists of 7 items. The third and final variable is funding or investing in green projects, with a Cronbach Alpha value of .942 and 8 items, as presented in Table 2. Similarly, the Bank's environmental performance was measured using 4 items with a Cronbach alpha value of 0.814. Finally, the profitability of the banks was measured by using 4 items and Cronbach's alpha value for the same stands at 0.804. All the variables' Cronbach alpha values are higher than the similar value (0.7), demonstrating the strong reliability and consistency of the questionnaire and indicating that the data can be further analyzed.

Table 3. Reliability analysis

Variables	Cronbach's Alpha (Non-Users)	Comparable Value	Explanation	Number of Statements
Green banking policy	0.944	0.7	Reliable and consistent	6
Day To Day Operations	0.701	0.7	Reliable and consistent	7
Funding or Investing in Green Projects	0.942	0.7	Reliable and consistent	8
Bank Environmental Performance	0.814	0.7	Reliable and consistent	4
Profitability	0.804	0.7	Reliable and consistent	4

4. RESULTS AND ANALYSIS

The data analysis was performed by employing the PLS-SEM method with the help of smartPLS. PLS-SEM is used in this study over Regression due to the relative advantages PLS-SEM possesses over Regression. For example, PLS-SEM is particularly useful when dealing with complex models that involve multiple latent variables and observed indicators. Further, as it is not mandatory to check the assumptions in PLS-SEM, hence more robust, third, PLS-SEM can perform well even with relatively small sample sizes, which is beneficial in research where data collection might be challenging or expensive. Lastly, PLS-SEM allows for the use of reflective or formative measurement models, providing greater flexibility in representing the relationships between latent variables and their indicators. Therefore, we use PLS-SEM to analyze the data (Ramli et al., 2018).

The analysis was performed in two stages. First, the measurement model was developed and checked using confirmatory factor analysis (CFA). Further, the model's reliability and validity can be checked using CFA. Secondly, the structural model was developed and checked for hypothesis testing by determining the value of path coefficients and R square.

4.1 Measurement Model

For assessing the convergent validity and reliability of the data, Cronbach's alpha, Composite reliability, and average variance extracted (AVE) were determined as shown in Tables 3 & 4. The factor loadings of the items loaded on the latent constructs were calculated and found to be higher than the threshold value of 0.7, as suggested by Hair et al., (2017). The values of composite reliability and average variance extracted were also derived, and it was found that the values of CR and AVE were above the threshold level of 0.7 and .0.5, respectively. It established the convergent validity and reliability. Therefore, the measurement model was found to be reliable and valid.

Further discriminant validity was confirmed by using Fornell-Larcker Criterion. The diagonal values (square root of AVE) should be higher than the vertical off-diagonal values, a shared variance

Table 4. Construct reliability and validity

Constructs	Cronbach's Alpha	Composite Reliability (rho_a)	Composite Reliability (rho_c)	Average Variance Extracted (AVE)
Banks Environmental Performance	0.814	0.922	0.776	0.595
Day to day operation	0.701	0.749	0.757	0.514
Funding or Investing in Green Projects	0.942	0.943	0.953	0.743
Green Banking Policy	0.944	0.945	0.956	0.783
Profitability	0.804	0.849	0.869	0.626

between constructs. All the diagonal values are higher than the off-diagonal values, confirming the discriminant Validity (Table 5).

4.2 Structure Model

PLS-SEM method used to evaluate the relationships between dependent and independent variables.

Table 6 depicts a significant positive relationship between bank environmental performance and profitability with a path coefficient value of 0.271 at 1 percent significance level. Similarly, green banking policy significantly influences the day-to-day operation and funding or investment in green projects with path coefficient values of 0.158 and 0.763. Further, daily operation, funding, and investment in green projects significantly influence bank environmental performance with path coefficient values of 0.232 and 0.938. All the paths are significant at 1 percent significance level.

Also, green banking policy directly affects bank environmental performance with a path coefficient value of 0.359 at a 1 percent significant level. Therefore, a sound green banking policy is required to improve bank environment performance and increase profits.

4.2.1 Specific Indirect Effect

The indirect effect of these two variables was calculated to evaluate the mediation effects of day-to-day operation and funding or investing in green projects. It was found that the indirect effect of day-to-day operations was insignificant, whereas funding or investing in green projects significantly mediate between green banking policy and banks' environmental performance (Table 7).

From the path analysis and mediation analysis, we posit that for banks' green environmental performance, it is important to have a sound green banking policy. A sound green banking policy, with significant funding of green projects, has multifold effects on a firm's environmental performance, further increasing the firm's profitability. In contrast, green banking policy does not necessarily impact the Bank's daily operation but directly impacts its environmental performance.

Table 5. Discriminant validity by using Fornell-Larcker criterion

Constructs	Banks Environmental Performance	Day to Day Operation	Funding or Investing in Green Projects	Green Banking Policy	Profitability
Banks Environmental Performance	0.771				
Day to day operation	0.366	0.717			
Funding or Investing in Green Projects	0.370	0.142	0.862		
Green Banking Policy	0.751	0.158	0.763	0.885	
Profitability	0.271	0.609	0.125	0.175	0.791

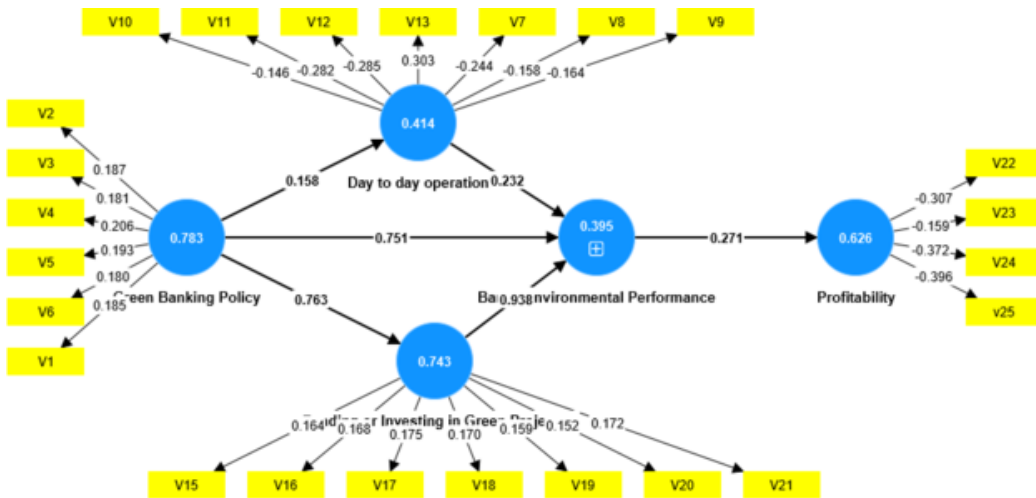
Table 6. Path coefficient

Paths	Path Coefficients
Banks Environmental Performance -> Profitability	0.271
Day to day operation -> Banks Environmental Performance	0.232
Funding or Investing in Green Projects -> Banks Environmental Performance	0.938
Green Banking Policy -> Banks Environmental Performance	0.359
Green Banking Policy -> Day to day operation	0.158
Green Banking Policy -> Funding or Investing in Green Projects	0.763

Table 7. Specific indirect effects

Specific Indirect Paths	Specific Indirect Effects
Green Banking Policy -> Day-to-day operation -> Banks Environmental Performance	0.037
Green Banking Policy -> Funding or Investing in Green Projects -> Bank's Environmental Performance	0.715

Figure 3. PLS-SEM diagram



5. DISCUSSION

The empirical results showed that Hypothesis 1 is validated and that there is a substantial relationship between banks' environmental performance and profitability with regard to green banking practices, as shown in Figure 3. This result is in line with that of (Akhter et al., 2021), who found that banks' environmental performance positively affects their ability to generate profits and support expanding their private-sector banking operations in India. So, it can be said that banks' environmental performance is extremely important to establishing and expanding banks in India. Green banking projects assist banks in cutting costs and expenses while transitioning to a low-carbon economy and contributing to sustainability. Green banking promotes environmentally friendly practices and disclosures while managing environmental, social, and governance (ESG) concerns in the banking sector. Based on the findings, Hypothesis 2, which contends that practices related to banks' daily operations have a favourable impact on banks' environmental performance, is also supported. This outcome is consistent with earlier research (Vidyakala, K, 2020). As previously mentioned, banks' everyday green efforts, such as offering environmentally friendly financial services and reducing paper use, have significantly impacted their environmental performance.

Furthermore, research shows that sustainable practices can lower operational risks by enhancing resource efficiency and reducing exposure to environmentally damaging industries. Furthermore, there is an increasing need for green financial solutions that attract environmentally concerned customers and enterprises. This demand can result in new revenue streams, increased consumer loyalty, and increased profitability.

The finding confirms Hypothesis 3 and underlines the statistical significance of the association between a bank's environmental performance and its funding or investment in green projects. A

recent study by (Srividya, 2021; Rachman, 2021) found a positive relationship between a bank's environmental performance and its funding or investment in green projects. According to a study, green finance is a new growth accelerator that promotes green economic growth, focusing on social responsibility and the environment.

The green banking strategy favors banks' environmental performances, daily operations, and funding or investing in green projects. The study explores how incorporating environmental issues into loan and investment decisions might help to reduce risk. Banks that avoid financing high-risk environmental and social initiatives are better positioned to prevent potential financial losses linked with unfavorable environmental repercussions. Contrary to popular belief, a symbiotic link between environmental performance and profitability can exist. Green banking practices implemented proactively by private sector banks can produce a positive feedback loop. Improved environmental performance can attract socially responsible investors, enhancing access to money and lowering borrowing costs. This, in turn, can boost profitability even further.

Furthermore, adopting sustainable practices can improve a bank's reputation by encouraging client trust and loyalty, directly impacting business growth since the outcome supports Hypotheses 4,5 and 6. This result is therefore confirmed by earlier research (Mir, 2022; Siahaan et al., 2021; Gunawan et al., 2022). As previously mentioned, green banking policies, such as the availability of online banking and a decrease in paper usage, have significantly reduced the negative effects on the environment, improved banks' environmental performances, and improved daily operations (Chen et al., 2022; Kumar et al., 2022). These practices encourage customers to engage in environmentally friendly banking activities like online bill payment, remote deposit, and e-statements. Also, it was discovered that banks spent more money on environmental projects and trash management.

Green banking practices include various efforts to lower a bank's environmental footprint and encourage ecologically responsible behaviour. These practices include promoting renewable energy finance, implementing energy-efficient measures in bank operations, supporting environmentally friendly projects, providing green loans and credits, and incorporating environmental criteria into investment decisions. These practices are consistent with global efforts to tackle climate change and answer the growing need for ethical and sustainable financial services.

This is the first study to examine the relationship between green banking policy and banks' environmental performance in the context of private sector banks in India. It also looks at the mediating influence of daily operations and funding or investing in green projects. According to the research findings, daily operations had an insignificant impact on the relationship between green banking policy and banks' environmental performance, but funding or investment in green initiatives considerably impacted the relationship. The study's findings thus significantly advance the literature on green project financing or investment as a means of mediating the relationship between green banking policy and banks' environmental performance.

5.1 Theoretical Implications

The study significantly contributes to the theory of green banking policy. It has proposed a new theoretical framework that contributes to the new body of knowledge on green banking policies and their implications for the firm's profitability. Private sector banks that adopt green banking practices will likely enhance their sustainable environmental performance, which can positively impact their long-term profitability by building trust and loyalty among environmentally conscious stakeholders. Banks adopting green banking practices can build a unique reputation as environmentally responsible institutions, attracting environmentally conscious customers and investors. This can positively impact their sustainable environmental performance and profitability through increased business opportunities and improved customer and investor relations.

The study also contributed to the existing theory of firms' profitability and suggested that the firm's environmental performance emerged as an important determinant in predicting the firm's profitability. Green banking practices are likely to improve their sustainable environmental

performance and profitability by considering the environmental impacts of their activities and promoting sustainable business practices that benefit the bottom line, the environment, and society. These theoretical perspectives provide insights into the potential mechanisms through which green banking practices can lead to positive outcomes for private sector banks regarding sustainable environmental performance and profitability.

5.2 Managerial Implications

Green banking policies encourage financial institutions to invest in environmentally friendly and sustainable projects. This can lead to the development of new industries and technologies focused on renewable energy, clean technologies, and resource efficiency, thereby generating economic growth and job opportunities. Additionally, financial institutions that adopt green banking policies may assess environmental risks associated with their investments and lending portfolios more effectively. This can lead to better risk management by avoiding investments in sectors vulnerable to climate change-related risks, ultimately protecting the financial institution from potential losses. Finally, banks that adopt green banking practices can improve their public image by demonstrating a commitment to environmental sustainability. This can attract environmentally conscious customers and investors who prefer to align their values with their financial choices, potentially leading to increased business and customer loyalty.

5.3 Limitations

Every study has limitations, and this study is no exception. The results of this research also possess certain limitations, as follows. The outcome analysis is based on the responses of 102 respondents; for better reliable results, more responses can be collected. It was noticed that some respondents belonged to the same age group, occupation, and education. In addition, some respondents did not pay attention to the questions being asked and just selected the answers without reading them while filling out the questionnaire. Due to this reason, maybe a few errors occurred during the analysis part.

The availability and accuracy of data on green banking practices, environmental performance, and private sector bank profitability may influence the study's findings. Inadequate or inconsistent data may result in distorted results and conclusions. Green banking practices' environmental and financial consequences may not be immediately apparent. The study's time range may not reflect long-term consequences, potentially underestimating the true impact on sustainability and profitability. Macroeconomic swings, legislative changes, and technological improvements can impact environmental performance and profitability. These external influences are outside the study's scope yet may impact the observed results.

6. CONCLUSION

In this research, three variables were considered to recognize the significance of green banking i.e., day-to-day operations, funding in green projects and practices related to bank policy. The demographic factors like gender, age and income of the respondents were also used. However, results have shown that all the variables are related. This research was carried out by collecting responses from employees of private-sector banks. The main motive of this research was to analyze the impact of green banking practices on the sustainable environmental performance of public sector banks in the Indian context.

Therefore, the epilogue drawn from the present analysis is that the variables have a substantial association. It is also noticeable that green banking practices will positively impact the Bank's environmental performance. Much more research must be conducted in the future to prove this fact. Apart from public and private sector banks, both cooperative and rural banks should actively promote and spread awareness amongst the customers about green banking practices in the remote corners of India, as many of the general public are unaware of this concept. This research can be a start for improving society and economic and sustainable growth. The researchers can use this research

paper to understand the significance of green banking practices to get a deep understanding. The influence of green banking practices on private sector banks' long-term environmental performance and profitability varies. Banks may greatly help environmental preservation while increasing their financial status by adopting and encouraging green practices. The synergy between sustainability and profitability calls into question the traditional notion of a trade-off between the two, pointing to a more responsible and resilient banking industry. However, ongoing efforts, regulatory backing, and stakeholder involvement will be required to realize the full potential of green banking in the coming years.

The study's assessment of the impact of green banking practices on private sector banks' sustainable environmental performance and profitability has important economic ramifications. By implementing green banking, banks may improve sustainability, alleviate climate-related hazards, and even save costs. It improves access to green funding and market distinctiveness while improving reputation and compliance with changing requirements. Developing comprehensive green banking norms, promoting environmentally conscious financing, stress testing for climate risks, and standardizing environmental reporting are all recommended solutions. However, research limitations warrant cautious interpretation, including data availability and external influences. Future research should explore longitudinal effects, cross-country comparisons, technological innovations, behavioral factors, and macroeconomic impacts to advance our understanding of this vital intersection of finance, sustainability, and profitability.

6.1 Ideas for Future Research

Future researchers interested in further study can gather data from more respondents to get more reliable results and deeper into the research. The responses for this study were taken only from bank employees, especially from private banks. To get more reliable results, the researchers can take responses from educationists, economists, scholars, bankers from all types of banks, etc. Future scholars can utilize this study for deeper analysis and a better understanding of the topic in direction to accomplish further research.

A comparison of different types of banks (e.g., large vs. small, domestic vs. multinational) could reveal whether the impact of green banking practices changes depending on bank characteristics. Adding qualitative research, such as interviews or case studies, to quantitative data could provide deeper insights into the motives, obstacles, and tactics driving banks' adoption of green practices. Investigating customer behaviour and preferences for green banking services could provide useful insights into the demand for sustainable financial products and services, affecting profitability. The significance of regulatory frameworks and policy incentives in fostering green banking practices and their impact could help policymakers promote sustainability in the banking sector. Extending the study to encompass a broader range of countries and areas would provide a more complete picture of how green banking practices interact with various socioeconomic and regulatory situations.

Future studies could expand on these constraints and investigate other routes to better understand the complicated interactions between sustainability and banking profitability.

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