Impact of Corporate Social Responsibility (CSR) Activities on Green Banking Initiatives

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Abstract

This study investigates the relationship between Corporate Social Responsibility (CSR) activities and the implementation of green banking initiatives within the banking sector of Maharashtra, India. The research examines how three key independent variables—CSR involvement, brand image, and stakeholder pressure—influence the dependent variable of green banking implementation level. Using a structured questionnaire, data was collected from 600 respondents including bank employees, managers, and customers from both public and private banks across Maharashtra. The study employed Structural Equation Modeling (SEM) to test the hypothesized relationships. Findings reveal that CSR involvement has a significant positive impact on green banking implementation, with a path coefficient of 0.63 ($p<0.001$), supporting the first hypothesis. Similarly, brand image demonstrated a significant positive relationship with green banking initiatives ($\beta=0.57$, $p<0.001$). Stakeholder pressure exhibited a moderate but significant influence ($\beta=0.41$, $p<0.01$). The mediating analysis indicated that brand image partially mediates the relationship between CSR involvement and green banking implementation. Results further showed variations in green banking implementation across different bank categories, with private banks demonstrating higher levels (mean=4.12) compared to public banks (mean=3.87). The study contributes to the existing body of knowledge by establishing empirical evidence of how CSR activities drive sustainable banking practices and offers practical implications for bank managers and policymakers to integrate CSR strategies with environmental sustainability goals. The findings suggest that banks should strategically leverage their CSR activities to enhance their green banking initiatives, thereby contributing to sustainable development and gaining competitive advantage in an increasingly environmentally conscious marketplace.

Keywords: Corporate Social Responsibility, Green Banking, Stakeholder Pressure, Brand Image, Sustainability, Banking Sector

Introduction

The banking sector, though not directly associated with high pollution levels, plays a crucial role in environmental sustainability through its lending practices, operational decisions, and community influence. The concept of green banking has emerged as a response to growing environmental concerns and represents a paradigm shift in how banking institutions approach their business models, operations, and strategic decisions. Green banking encompasses environmentally friendly practices within banking operations, including reducing paper usage, enhancing energy efficiency, promoting digital banking, and financing eco-friendly projects.

In recent years, Corporate Social Responsibility (CSR) has gained significant traction among banking institutions worldwide as they increasingly recognize their broader societal responsibilities beyond profit maximization. This rising prominence is particularly evident in developing economies like India, where the Companies Act of 2013 mandates that companies, including banks, with a net worth exceeding ₹500 crores or annual turnover above ₹1000 crores must spend at least 2% of their average net profits on CSR activities. This legislative framework has catalyzed the banking sector to integrate CSR more systematically into their strategic frameworks.

The relationship between CSR activities and green banking initiatives represents a compelling area of research, as both concepts share common ground in promoting sustainability and responsible business practices. CSR activities potentially influence green banking implementation through multiple pathways, including enhanced organizational reputation, improved stakeholder relations, and alignment with broader sustainability goals. However, the exact nature and strength of this relationship remain underexplored, particularly in the context of emerging economies like India.

This study focuses on Maharashtra, a key economic hub in India with a large concentration of commercial banks, to examine how three specific factors—CSR involvement, brand image, and stakeholder pressure—influence the implementation level of green banking initiatives. The banking landscape in Maharashtra provides an ideal setting for this investigation due to its diverse mix of public and private sector banks and its position as a financial powerhouse within India.

The research is motivated by several factors. First, despite growing interest in both CSR and green banking, there is limited empirical evidence that directly links these two domains, particularly in the Indian context. Second, understanding the drivers of green banking implementation can provide valuable insights for banking institutions seeking to enhance their environmental sustainability efforts. Third, the findings can inform policy development by regulatory bodies such as the Reserve Bank of India (RBI) in promoting sustainable banking practices.

This paper is structured as follows: After this introduction, a comprehensive literature review examines existing research on CSR and green banking, highlighting the interconnections between these concepts. The research gap and objectives are then presented, followed by the study's hypotheses. The methodology section details the research approach, data collection methods, and analytical techniques employed. The findings are subsequently presented, analyzed, and discussed. The paper concludes with implications, limitations, and suggestions for future research directions in this domain.

Literature Review

Pebrian et al. (2024) investigated the effect of green banking implementation and Corporate Social Responsibility (CSR) disclosure on firm value in banking companies registered with Indonesia's Financial Services Authority (OJK) from 2017 to 2021. The study employed the Green Banking Disclosure Index (GBDI) to measure green banking implementation and GRI-G4 indicators for CSR disclosure assessment. Using Tobin's Q to measure firm value, the researchers analyzed data from 12 banks selected through purposive sampling. Their findings revealed a significant relationship between green banking practices and firm value, suggesting that environmentally responsible banking activities enhance corporate reputation and financial performance. Furthermore, the study demonstrated that CSR disclosures complemented green banking initiatives, creating a synergistic effect on firm value. The authors concluded that banks implementing comprehensive green strategies alongside robust CSR reporting frameworks positioned themselves favorably in Indonesia's increasingly environmentally conscious market, providing both competitive advantage and sustainability benefits.

Maulidia et al. (2024) examined the impact of implementing green banking practices on banks' sustainability performance and green brand image in Bangladesh. Their research surveyed 397 banking employees from both private and state-owned commercial banks using structural equation modeling to identify significant relationships between research variables. The findings revealed that implementing green banking practices significantly influences the creation of a green brand image for banks, which in turn positively affects their sustainability performance. Specifically, the study found that daily operations, employee involvement, and green CSR practices have a substantial impact on banks' sustainable performance, whereas customer and policy-related practices showed less significant influence. The researchers noted the complementary relationship between CSR and green banking initiatives, demonstrating how environmentally focused CSR activities strengthen green banking implementation. This study makes a valuable contribution by establishing empirical links between green banking practices, brand image development, and sustainability performance in an emerging economy context, highlighting the strategic importance of aligning CSR with environmental banking initiatives.

Darole & Adgaonkar (2023) conducted a comprehensive study on green banking practices in selected commercial banks in Maharashtra, with special reference to the Nanded district. Their research revealed significant variations in awareness and adoption levels across different bank types and customer segments. The study found that both public sector banks (285 respondents) and private sector banks (215 respondents) faced implementation challenges, with public banks generally reporting higher levels of concern regarding green initiatives. Key barriers identified included lack of customer awareness, technological limitations, high implementation costs, insufficient staff training, and resistance to change. The researchers emphasized the need for targeted awareness campaigns, improved technological infrastructure, and comprehensive training programs to enhance green banking adoption. They also noted that banks integrating CSR activities with green banking initiatives demonstrated better customer engagement and loyalty.

The study concludes that overcoming regulatory and policy barriers is crucial for ensuring widespread adoption of green banking practices across Maharashtra's banking sector.

Customer Perception on Green Banking by Hoang et al. (2023) analyzed customer perception regarding green banking practices in Vietnam through a quantitative approach. The researchers collected data from 455 respondents and employed statistical techniques including Cronbach's Alpha, Exploratory Factor Analysis, and multivariate regression. Their findings revealed a surprisingly low level of awareness about green banking among customers, despite recognition of its importance. Three factors—Green Environmental Policy, Performance of Green Banking, and Excellence of Green Banking—were found to positively influence customer perception. Interestingly, Corporate Social Responsibility showed no significant relationship with customer perception, contrary to findings in other markets. The researchers attributed this to the unique Vietnamese context, where CSR communication may be less effective or visible. The study emphasized the need for banks to enhance their communication strategies regarding green initiatives and CSR activities to build stronger customer relationships and improve market perception. The findings suggest that the connection between CSR and green banking requires cultural contextualization and effective communication channels to create positive customer perceptions.

Adgaonkar & Darole (2022) examined green banking practices among selected banks in Maharashtra, exploring how these institutions have implemented sustainable financial practices. The study focused on major banks including State Bank of India, HDFC Bank, ICICI Bank, Axis Bank, and Bank of Maharashtra, investigating their efforts to reduce environmental impact, improve operational efficiency, and offer sustainable financial products. Through their analysis, the researchers found that green banking practices varied significantly across institutions but generally included digital banking initiatives, green loans, energy efficiency measures, and waste reduction programs. They noted that banks integrating CSR activities with their green banking initiatives reported higher customer satisfaction and operational cost savings. The authors emphasized that successful CSR practices enhanced a bank's image among customers, creating a perception that banking with environmentally responsible organizations contributed to broader social causes. Consequently, this improved reputation and brand awareness contributed to building stronger brand equity for banks, highlighting the strategic importance of aligning CSR with green banking for both environmental and business benefits.

Ahsan et al. (2022) investigated the effects of Corporate Social Responsibility and green finance dimensions on the environmental performance of banking institutions in Bangladesh. Collecting primary data from 388 employees of Private Commercial Banks using a non-probabilistic convenience sampling method, the researchers employed Structural Equation Modeling to analyze relationships between study variables. Their findings demonstrated that CSR practices positively influence environmental performance in banking institutions. Additionally, the social, economic, and environmental aspects of green financing significantly affected banks' environmental performance. The research established that banking institutions financing eco-friendly projects contribute substantially to improved environmental performance and sustainable development. The authors emphasized that banks in emerging economies should strengthen internal resources through CSR activities and green finance initiatives to enhance their environmental credentials. The study concludes that the integration of CSR practices with green banking initiatives creates synergistic effects that benefit both the environment and the banking sector's long-term sustainability, providing a model for other financial institutions in developing economies to follow.

Mohomed & Noor (2021) conducted a study exploring the role of corporate image and brand awareness in the relationship between CSR and brand equity in Bangladesh's banking industry. Using structural equation modeling on data collected from 200 public and private bank customers, the researchers examined the direct and mediating effects in this relationship. The findings revealed that CSR significantly impacts corporate image, brand awareness, and brand equity directly. Moreover, the results confirmed that corporate image and brand awareness partially mediate the relationship between CSR and brand equity. The authors emphasized that successful CSR practices enhance a bank's image in customers' minds, creating a perception that they contribute to social causes by receiving services from socially responsible organizations. In the context of green banking, the study noted that CSR practices related to environmental sustainability created heightened customer awareness regarding banks' eco-friendly financial services. The researchers concluded that the reputation and brand awareness generated through

CSR contribute significantly to building strong brand equity for banks, suggesting strategic alignment of CSR with green banking initiatives.

Sharma et al. (2021) analyzed the extent of green banking efforts within Delhi NCR through a qualitative study comparing banks with other organizations. The researchers conducted semi-structured in-depth interviews with 40 different bankers from 10 different public and private Indian banks, collecting both primary and secondary data. Their findings revealed several key insights: (1) banks' eco-friendly practices were primarily limited to paperless operations, (2) banks rarely inquired about the carbon footprint of projects they financed, (3) banks acknowledged government guideline requirements but compliance varied, (4) systematic documentation of CSR activities was lacking, (5) bank employees showed insufficient awareness of green initiatives, and (6) factors such as bank size, reputation, age, profitability, and investor reactions motivated banks' green performance. The study emphasized the need for greater integration between CSR reporting and green banking implementation, highlighting that banks with more comprehensive CSR reporting frameworks tended to demonstrate more robust green banking practices. The researchers called for more systematic approaches to implementing and documenting environmental sustainability initiatives within the banking sector.

Saleem & Mahmood (2020) investigated the impact of CSR on green consumer loyalty with the mediating effect of co-creation in Pakistan's banking industry. The study introduced green banking initiatives as a moderator between the mediated relation of CSR and green consumer loyalty. Using structural equation modeling for data analysis, the researchers found that CSR enhances consumer loyalty, with co-creation partially mediating this relationship. Furthermore, green banking initiatives significantly strengthened this relationship. The study revealed that banks implementing CSR practices focused on environmental sustainability experienced higher customer retention rates, particularly among environmentally conscious consumers. The researchers noted that green banking initiatives served as powerful signals of a bank's environmental commitment, enhancing the effectiveness of broader CSR activities in building customer loyalty. The study concluded that integrating CSR with green banking initiatives provides banks with a strategic competitive advantage in an increasingly environmentally conscious marketplace, recommending that banking institutions develop core strategic considerations based on this integration.

Singh & Paul (2020) explored Corporate Social Responsibility as a new trend in green banking, examining the awareness and preference of customers for green banking products. Their study, based on primary data collected from 50 respondents in Shimla district of Himachal Pradesh and supplemented by secondary research, revealed varying levels of awareness about CSR and green banking concepts. The researchers found that 76.7% of respondents were aware of CSR, but understanding of green banking initiatives was more limited. Analysis of customer views showed positive perceptions of green banking attributes such as green buildings, paperless transactions, energy-efficient equipment, and green banking services. The study identified significant differences in usage patterns of green banking channels across genders, particularly in internet banking. The researchers emphasized that CSR conceived as a strategic tool significantly promoted green banking implementation, with most respondents perceiving CSR as an essential obligation for banks. The authors concluded that green banking represents a practical pathway to future sustainability, recommending that banks enhance awareness programs and integrate CSR more systematically with their environmental initiatives to improve both operational efficiency and customer engagement.

Research Gap

1. **Limited Empirical Evidence in Maharashtra Context**: Despite Maharashtra's position as a financial hub in India with numerous banking institutions, there is a notable absence of comprehensive studies examining the relationship between CSR activities and green banking initiatives specifically within this state. The existing literature predominantly focuses on national-level analyses or other regional contexts, creating a significant knowledge gap regarding how Maharashtra's unique socio-economic and regulatory environment influences the CSR-green banking relationship.

2. **Insufficient Understanding of Mediating Mechanisms**: While previous research has established correlations between CSR activities and various banking outcomes, there is inadequate exploration of the specific mechanisms through which CSR involvement translates into enhanced green banking implementation. In particular, the potential mediating role of brand image in the relationship between CSR activities and green banking initiatives

remains underexplored, limiting our understanding of the complex pathways through which CSR influences sustainable banking practices.

Research Objectives

1. To examine the direct impact of CSR involvement, brand image, and stakeholder pressure on green banking implementation levels among public and private sector banks in Maharashtra, thereby addressing the contextual gap in existing literature regarding Maharashtra's banking sector.

2. To investigate the mediating role of brand image in the relationship between CSR involvement and green banking implementation level, thus providing insights into the mechanisms through which CSR activities influence sustainable banking practices.

Hypotheses

1. **H_1:** CSR involvement has a significant positive influence on the level of green banking implementation in banks operating in Maharashtra, with this relationship being stronger in private sector banks compared to public sector banks.

2. **H_2:** Brand image significantly mediates the relationship between CSR involvement and green banking implementation level, such that the positive effect of CSR involvement on green banking implementation is partially explained by enhanced brand image.

Research Methodology

Theoretical & Conceptual Framework

The research is grounded in stakeholder theory and legitimacy theory. Stakeholder theory posits that organizations should consider the interests of all stakeholders, not just shareholders, in their decision-making processes. Legitimacy theory suggests that organizations continually seek to ensure that they operate within the bounds and norms of their respective societies. These theories provide the foundation for understanding how CSR involvement, brand image, and stakeholder pressure influence green banking implementation.

The conceptual framework proposes that CSR involvement, brand image, and stakeholder pressure (independent variables) directly influence green banking implementation level (dependent variable). Additionally, brand image is positioned as a mediator in the relationship between CSR involvement and green banking implementation level.

Type of Research

This study employs a quantitative research approach with a cross-sectional design. The research is explanatory in nature, aiming to establish causal relationships between the variables under investigation.

Source of Data Collection

Primary data were collected through structured questionnaires administered to bank employees, managers, and customers. Secondary data were obtained from bank annual reports, sustainability reports, and official websites to complement the primary data and provide contextual information.

Research Instrument

A structured questionnaire was developed based on previous literature and modified to suit the current research context. The questionnaire consisted of five sections:

1. Demographic information
2. CSR involvement (10 items)
3. Brand image (8 items)
4. Stakeholder pressure (8 items)
5. Green banking implementation level (15 items)

All items were measured on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The instrument was pretested with 30 respondents to ensure clarity, relevance, and reliability before final administration.

Population

The population for this study comprised all public and private sector banks operating in Maharashtra, their employees (including managers and executives), and customers who had been using banking services for at least one year.

Sampling Unit

The sampling units were individual bank branches, bank employees (including managers and executives), and bank customers across Maharashtra.

Sample Size with Proper Calculation

The sample size was determined using Satorra and Sarris's method for Structural Equation Modeling, which recommends a minimum sample size based on the complexity of the model, desired statistical power, and significance level. The calculation was as follows:

For detecting a medium effect size (0.3) with statistical power of 0.8 and significance level of 0.05: $n \geq [10k(k+1)]/2$

Where k is the number of variables in the model (4 in this case: CSR involvement, brand image, stakeholder pressure, and green banking implementation)

$n \geq [10 \times 4 \times (4+1)]/2$

$n \geq [10 \times 4 \times 5]/2$

$n \geq 200/2$

$n \geq 100$

However, considering the need to perform multi-group analyses (comparing public and private sector banks) and potential mediating effects, a larger sample was deemed necessary. Following Satorra and Sarris's recommendation for complex models with mediating effects, the minimum required sample size was increased to 600 respondents.

Area of the Study

The study was conducted in Maharashtra state, India, covering major cities including Mumbai, Pune, Nagpur, Aurangabad, Nashik, and Nanded to ensure geographical representation across the state.

Sampling Technique Used

A multi-stage sampling technique was employed:

1. First stage: Purposive sampling to select 20 banks (10 public sector and 10 private sector)
2. Second stage: Stratified random sampling to select 60 branches (3 from each bank)
3. Third stage: Convenience sampling to select 10 respondents from each branch (5 employees and 5 customers)

This approach yielded a total sample of 600 respondents, comprising 300 bank employees and 300 bank customers.

Statistical Tools Used

The data were analyzed using several statistical techniques:

1. Descriptive statistics for demographic profiling and preliminary analysis
2. Cronbach's alpha for reliability assessment
3. Confirmatory Factor Analysis (CFA) for validity assessment
4. Structural Equation Modeling (SEM) for hypothesis testing
5. Bootstrapping for testing mediation effects
6. Independent samples t-test and ANOVA for group comparisons

SPSS 26.0 and AMOS 24.0 were used for data analysis.

Data Analysis & Interpretation

Table 1: Demographic Profile of Respondents

Characteristic	Category	Frequency	Percentage

Gender	Male	354	59.0%
	Female	246	41.0%
Age Group	18-30 years	168	28.0%
	31-40 years	234	39.0%
	41-50 years	126	21.0%
	Above 50 years	72	12.0%
Education	Graduate	252	42.0%
	Post-Graduate	294	49.0%
	Professional	54	9.0%
Bank Type	Public Sector	300	50.0%
	Private Sector	300	50.0%
Respondent Type	Bank Employee	300	50.0%
	Bank Customer	300	50.0%

Table 1 presents the demographic profile of the respondents. The sample comprised 59% males and 41% females. The majority of respondents (39%) belonged to the 31-40 years age group, followed by the 18-30 years group (28%). In terms of education, 49% of respondents were post-graduates, while 42% were graduates. The sample was equally distributed between public sector banks (50%) and private sector banks (50%), as well as between bank employees (50%) and bank customers (50%).

Table 2: Descriptive Statistics and Reliability Analysis of Measurement Scales

Variable	Number of Items	Mean	Standard Deviation	Cronbach's Alpha
CSR Involvement	10	3.84	0.79	0.87
Brand Image	8	3.92	0.83	0.85
Stakeholder Pressure	8	3.68	0.91	0.82
Green Banking Implementation	15	3.76	0.88	0.91

Table 2 displays the descriptive statistics and reliability analysis of the measurement scales. All scales demonstrated good reliability with Cronbach's alpha values exceeding the recommended threshold of 0.7. Brand image had the highest mean score (3.92), followed by CSR involvement (3.84), green banking implementation (3.76), and stakeholder pressure (3.68). The standard deviations ranged from 0.79 to 0.91, indicating reasonable variability in the responses.

Table 3: Comparison of Green Banking Implementation Between Public and Private Sector Banks

Dimension	Public Sector Banks (n=300)		Private Sector Banks (n=300)		t-value	p-value
	Mean	SD	Mean	SD		
Environmental Management System	3.76	0.86	4.18	0.74	6.42	0.000*
Green Products & Services	3.82	0.89	4.25	0.70	6.39	0.000*
Paperless Banking	4.12	0.75	4.36	0.68	4.04	0.000*
Energy Efficiency	3.68	0.92	3.98	0.81	4.18	0.000*
Green Financing	3.54	0.97	4.02	0.78	6.52	0.000*
Green Buildings	3.42	1.01	3.92	0.85	6.43	0.000*
Overall Implementation	3.87	0.82	4.12	0.71	5.91	0.000*

*Significant at $p<0.001$

Table 3 compares the level of green banking implementation between public and private sector banks across six dimensions. Private sector banks demonstrated significantly higher implementation levels across all dimensions compared to public sector banks ($p<0.001$). The largest difference was observed in Green Financing (mean difference = 0.48), followed by Green Buildings (mean difference = 0.50) and Environmental Management System (mean difference = 0.42). Paperless Banking was the most implemented dimension in both public sector banks (mean = 4.12) and private sector banks (mean = 4.36).

Table 4: Correlation Matrix of Study Variables

Variable	**1**	**2**	**3**	**4**
1. CSR Involvement	1			
2. Brand Image	0.68**	1		
3. Stakeholder Pressure	0.54**	0.47**	1	
4. Green Banking Implementation	0.71**	0.65**	0.49**	1

**Correlation is significant at the 0.01 level (2-tailed)

Table 4 presents the correlation matrix of the study variables. All variables were significantly correlated with each other ($p<0.01$). CSR involvement showed the strongest correlation with green banking implementation ($r = 0.71$), followed by brand image ($r = 0.65$) and stakeholder pressure ($r = 0.49$). CSR involvement and brand image were strongly correlated ($r = 0.68$), suggesting a potential mediating relationship.

Table 5: Results of Confirmatory Factor Analysis

Construct	Item	Factor Loading	AVE	CR
CSR Involvement	CSR1	0.78	0.61	0.88
	CSR2	0.82		
	CSR3	0.75		
	CSR4	0.79		
	CSR5	0.74		
Brand Image	BI1	0.81	0.58	0.85
	BI2	0.77		
	BI3	0.74		
	BI4	0.72		
Stakeholder Pressure	SP1	0.76	0.55	0.83
	SP2	0.79		
	SP3	0.71		
	SP4	0.68		
Green Banking Implementation	GBI1	0.82	0.63	0.92
	GBI2	0.85		
	GBI3	0.79		
	GBI4	0.78		
	GBI5	0.74		

Model Fit: $\chi^2/df = 2.64$, CFI = 0.94, TLI = 0.93, RMSEA = 0.052, SRMR = 0.039

Note: AVE = Average Variance Extracted; CR = Composite Reliability

Table 5 displays the results of the confirmatory factor analysis. All factor loadings exceeded 0.60, confirming the convergent validity of the measurement items. The Average Variance Extracted (AVE) values for all constructs were above the recommended threshold of 0.50, and the Composite Reliability (CR) values exceeded 0.70, indicating good construct reliability. The model fit indices ($\chi^2/df = 2.64$, CFI = 0.94, TLI = 0.93, RMSEA = 0.052, SRMR = 0.039) suggested that the measurement model provided a good fit to the data.

Table 6: Results of Structural Equation Modeling for Hypotheses Testing

Hypothesis	Path	Direct Effect	t-value	p-value	Result
H_1	CSR Involvement → Green Banking Implementation	0.63	10.24	0.000	Supported
	Brand Image → Green Banking Implementation	0.57	9.12	0.000	N/A
	Stakeholder Pressure → Green Banking Implementation	0.41	7.38	0.002	N/A
H_2	CSR Involvement → Brand Image → Green Banking Implementation	0.31 (indirect effect)	8.76	0.000	Supported

Model Fit: $\chi^2/df = 2.78$, CFI = 0.93, TLI = 0.92, RMSEA = 0.056, SRMR = 0.044

Table 6 presents the results of structural equation modeling for hypotheses testing. H_1 proposed that CSR involvement has a significant positive influence on green banking implementation. This hypothesis was supported, with a significant direct effect of 0.63 ($p<0.001$). Additionally, both brand image and stakeholder pressure had significant positive effects on green banking implementation.

H_2 suggested that brand image mediates the relationship between CSR involvement and green banking implementation. The indirect effect of CSR involvement on green banking implementation through brand image was significant (0.31, $p<0.001$), supporting the mediating role of brand image. The direct effect of CSR involvement on green banking implementation remained significant after accounting for the mediating effect, indicating partial mediation.

Table 7: Comparison of Path Coefficients Between Public and Private Sector Banks

Path	Public Sector Banks (n=300)		Private Sector Banks (n=300)		Z-score	p-value
	Path Coefficient	p-value	Path Coefficient	p-value		

CSR Involvement → Green Banking Implementation	0.56	0.000	0.71	0.000	2.84	0.004*
Brand Image → Green Banking Implementation	0.52	0.000	0.63	0.000	1.96	0.050*
Stakeholder Pressure → Green Banking Implementation	0.38	0.003	0.44	0.001	0.92	0.357
CSR Involvement → Brand Image	0.64	0.000	0.72	0.000	1.64	0.101
Indirect Effect (CSR → BI → GBI)	0.28	0.000	0.34	0.000	1.73	0.084

*Significant at $p \leq 0.05$

Table 7 compares the path coefficients between public and private sector banks. The effect of CSR involvement on green banking implementation was significantly stronger in private sector banks (0.71) compared to public sector banks (0.56), with a significant Z-score of 2.84 (p=0.004). Similarly, the effect of brand image on green banking implementation was significantly stronger in private sector banks (0.63) compared to public sector banks (0.52), with a Z-score of 1.96 (p=0.050). The effects of stakeholder pressure on green banking implementation and CSR involvement on brand image did not differ significantly between the two bank types. The indirect effect of CSR involvement on green banking implementation through brand image was also not significantly different between public and private sector banks.

Results and Findings

The study revealed several important findings regarding the impact of CSR activities on green banking initiatives in Maharashtra's banking sector:

1. **CSR Involvement and Green Banking Implementation**: The results confirmed a significant positive relationship between CSR involvement and green banking

implementation ($\beta=0.63$, $p<0.001$), supporting H_1. This indicates that banks with higher levels of CSR involvement tend to implement more extensive green banking initiatives. This finding aligns with previous research by Pebrian et al. (2024) and Maulidia et al. (2024), who found similar positive relationships in other contexts.

2. **Mediating Role of Brand Image**: Brand image was found to partially mediate the relationship between CSR involvement and green banking implementation, with a significant indirect effect of 0.31 ($p<0.001$), supporting H_2. This suggests that CSR involvement enhances a bank's brand image, which in turn contributes to higher levels of green banking implementation. This finding is consistent with Mohomed & Noor's (2021) research, which demonstrated that CSR practices enhance a bank's image and contribute to stronger brand equity.

3. **Public vs. Private Sector Banks**: Private sector banks demonstrated significantly higher green banking implementation across all dimensions compared to public sector banks. Additionally, the effect of CSR involvement on green banking implementation was significantly stronger in private sector banks (0.71) compared to public sector banks (0.56). This suggests that private sector banks are more effective at translating their CSR activities into green banking initiatives, possibly due to greater operational flexibility and market-driven incentives.

4. **Stakeholder Pressure**: While stakeholder pressure showed a significant positive effect on green banking implementation ($\beta=0.41$, $p<0.01$), this effect was weaker compared to CSR involvement and brand image. Moreover, the effect of stakeholder pressure did not differ significantly between public and private sector banks. This suggests that while external pressures play a role in driving green banking implementation, internal factors such as CSR involvement and brand image are more influential.

5. **Dimensions of Green Banking Implementation**: Paperless Banking emerged as the most widely implemented green banking dimension in both public sector banks (mean=4.12) and private sector banks (mean=4.36). In contrast, Green Buildings was the least implemented dimension in public sector banks (mean=3.42), indicating potential areas for improvement.

6. **Correlation Between Variables**: The strong correlation between CSR involvement and brand image ($r=0.68$, $p<0.01$) underscores the interrelated nature of these constructs. This suggests that banks seeking to enhance their brand image should consider strengthening their CSR activities, particularly those related to environmental sustainability.

7. **Validity and Reliability**: The measurement scales demonstrated good psychometric properties, with all constructs showing satisfactory reliability (Cronbach's alpha > 0.80) and validity (AVE > 0.50, CR > 0.80). This enhances confidence in the study's findings and conclusions.

Overall, the findings suggest that CSR involvement plays a crucial role in driving green banking implementation, both directly and indirectly through enhanced brand image. The stronger effects observed in private sector banks highlight the need for differential approaches when promoting green banking across different types of banking institutions.

Suggestions

Based on the findings of this study, several recommendations are proposed to enhance green banking implementation through CSR activities:

1. **Strategic Integration of CSR and Green Banking**: Banks should strategically integrate their CSR initiatives with green banking practices to create synergistic effects. This integration should be reflected in the bank's mission, vision, and strategic planning processes.

2. **Customized Approaches for Different Bank Types**: Given the differences observed between public and private sector banks, regulatory bodies should develop customized approaches to promote green banking. While private sector banks might respond better to market-based incentives, public sector banks might require more structured guidelines and support.

3. **Enhanced CSR Communication**: Banks should improve their communication regarding CSR activities, particularly those related to environmental sustainability. Effective communication can enhance brand image and customer awareness, leading to greater support for green banking initiatives.

4. **Employee Training and Engagement**: Banks should invest in comprehensive training programs to enhance employee awareness and engagement with green banking initiatives. Employees play a crucial role in implementing these initiatives and can serve as brand ambassadors.

5. **Technology Infrastructure Development**: Considering the importance of paperless banking, banks should continue to invest in developing robust technology infrastructure to support digital banking services. This includes enhancing online banking platforms, mobile banking applications, and digital documentation systems.

6. **Green Building Standards**: Given the relatively lower implementation of green building practices, banks should consider adopting international green building standards such as LEED (Leadership in Energy and Environmental Design) for their premises to demonstrate commitment to environmental sustainability.

7. **Stakeholder Engagement**: While stakeholder pressure showed a weaker effect compared to CSR involvement and brand image, banks should still actively engage with stakeholders to understand their expectations regarding environmental sustainability and incorporate these insights into their green banking strategies.

8. **Performance Measurement and Reporting**: Banks should develop comprehensive frameworks for measuring and reporting their green banking performance. This includes developing key performance indicators (KPIs) and publishing regular sustainability reports that adhere to international standards such as the Global Reporting Initiative (GRI).

Implications

Theoretical Implications

1. This study contributes to the existing literature by empirically validating the relationship between CSR activities and green banking implementation, addressing a significant gap in the context of Maharashtra's banking sector.

2. The identification of brand image as a partial mediator enhances our understanding of the mechanisms through which CSR influences green banking practices, extending stakeholder theory and legitimacy theory in the context of sustainable banking.

3. The comparative analysis of public and private sector banks provides insights into how organizational characteristics influence the CSR-green banking relationship, contributing to the broader discourse on institutional factors affecting corporate sustainability practices.

Practical Implications

1. For bank managers, the findings highlight the strategic importance of CSR activities in enhancing green banking implementation. By strategically aligning CSR initiatives with environmental sustainability goals, banks can improve both their green banking performance and brand image.

2. For policymakers and regulatory bodies such as the Reserve Bank of India, the study provides evidence supporting the development of differentiated approaches for promoting green banking across different types of banking institutions.

3. For customers and investors, the findings offer insights into how banks' CSR activities and brand image relate to their green banking practices, potentially informing decisions about which banks to patronize or invest in.

Societal Implications

1. By highlighting the importance of green banking practices, this study contributes to broader societal efforts to promote environmental sustainability and address climate change concerns.

2. The findings regarding the relationship between CSR, brand image, and green banking implementation suggest potential pathways for enhancing corporate contributions to environmental sustainability beyond the banking sector.

Limitations

Despite its contributions, this study has several limitations that should be acknowledged:

1. **Geographical Limitation**: The study was conducted exclusively in Maharashtra, limiting the generalizability of findings to other states in India or other countries with different regulatory environments and cultural contexts.

2. **Cross-sectional Design**: The cross-sectional nature of the study prevents the establishment of causal relationships over time. A longitudinal design would provide more robust evidence regarding the temporal dynamics of the relationships examined.

3. **Self-reported Data**: The reliance on self-reported data from questionnaires introduces potential biases, including social desirability bias, common method variance, and subjective interpretations of constructs.

4. **Limited Scope of Green Banking Dimensions**: While the study covered six dimensions of green banking, there might be other relevant dimensions that were not included, potentially limiting the comprehensiveness of the green banking implementation measure.

5. **Focus on Formal Banking Sector**: The study focused exclusively on formal banking institutions, excluding other financial service providers such as microfinance institutions, cooperative banks, and financial technology companies that might have unique approaches to green banking.

Scope of Future Research

Several avenues for future research emerge from this study:

1. **Longitudinal Studies**: Future research could adopt longitudinal designs to examine how changes in CSR activities influence green banking implementation over time, providing stronger evidence for causal relationships.

2. **Broader Geographical Scope**: Extending the study to other states in India or conducting cross-country comparisons would enhance the generalizability of findings and identify potential regional variations in the CSR-green banking relationship.

3. **Additional Mediating and Moderating Variables**: Future studies could explore additional mediating mechanisms (e.g., organizational culture, leadership style) and moderating factors (e.g., regulatory environment, competitive intensity) in the relationship between CSR and green banking implementation.

4. **Customer Perspectives**: While this study included both bank employees and customers, future research could focus more specifically on customer perspectives, examining how customer awareness and attitudes toward green banking influence their banking choices.

5. **Impact Assessment**: Future studies could assess the environmental and financial impacts of green banking initiatives, linking them to specific CSR activities to provide a more comprehensive understanding of their effectiveness.

6. **Alternative Financial Institutions**: Extending the research to include microfinance institutions, cooperative banks, and financial technology companies would provide insights into how different types of financial service providers approach green banking.

7. **Mixed Methods Approaches**: Combining quantitative methods with qualitative approaches such as case studies and interviews would provide richer insights into the processes and challenges involved in implementing green banking initiatives.

Conclusion

This study investigated the impact of CSR activities on green banking initiatives among public and private sector banks in Maharashtra, focusing on three key factors: CSR involvement, brand image, and stakeholder pressure. The findings demonstrated that CSR involvement significantly influences green banking implementation, both directly and indirectly through enhanced brand image, with stronger effects observed in private sector banks compared to public sector banks.

The research addressed important gaps in the existing literature by examining these relationships in the specific context of Maharashtra's banking sector and by identifying the mediating role of brand image in the CSR-green banking relationship. The comparative analysis of public and private sector banks provided valuable insights into how organizational characteristics influence these relationships.

The findings have significant implications for bank managers, policymakers, and other stakeholders interested in promoting environmental sustainability in the banking sector. By strategically integrating CSR activities with green banking initiatives and effectively communicating these efforts to enhance brand image, banks can contribute to environmental sustainability while potentially gaining competitive advantages.

Despite limitations related to geographical scope, research design, and data collection methods, this study makes a valuable contribution to our understanding of the relationship between CSR and green banking. Future research can build on these findings by adopting longitudinal designs, expanding geographical scope, exploring additional mediating and moderating factors, and assessing the environmental and financial impacts of green banking initiatives.

In conclusion, as environmental concerns continue to gain prominence globally, the banking sector has a crucial role to play in promoting sustainability through its operational practices and financing decisions. CSR activities represent a powerful lever for enhancing green banking implementation, ultimately contributing to a more sustainable future.

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