



DETERMINANTS OF GREEN BANKING PRACTICES: EVIDENCE FROM THE INDIAN BANKING SECTOR IN MAHARASHTRA

TANUJA DUBEY ¹, SRUSHTI JAIN ²

^{1,2} Assistant Professor: Ashoka Business School, Nashik

ABSTRACT

AIM: The primary aim of this study is to examine the determinants of green banking practices among banking customers in Maharashtra by investigating the influence of customer, environmental, and economic perspectives on the adoption of green banking initiatives. The study further aims to identify the key factors driving the implementation of green banking practices and to provide empirical evidence that supports the development of sustainable banking strategies, enhances customer participation in environmentally responsible financial services and assists policymakers and banking institutions in promoting sustainable finance within the Indian banking sector.

RESEARCH METODOLOGY & RELIABILITY: The study employed a quantitative research approach using a descriptive and exploratory research design. Primary data were collected from 127 banking customers through a structured questionnaire based on a five-point Likert scale, while secondary data were obtained from reports published by the Reserve Bank of India (RBI), the Indian Banks' Association (IBA), the Institute for Development and Research in Banking Technology (IDRBT), and relevant scholarly sources. The measurement instrument demonstrated acceptable internal consistency with a Cronbach's Alpha coefficient of 0.695, indicating satisfactory reliability for exploratory research. Construct validity was established through Exploratory Factor Analysis (EFA), where the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy was 0.641 and Bartlett's Test of Sphericity was statistically significant ($\chi^2 = 1238.680$, $p < 0.001$), confirming the suitability of the data for factor analysis. Data were analysed using IBM SPSS through descriptive statistics, multiple regression analysis, exploratory factor analysis and one-way ANOVA.

RESULTS: The findings reveal that both customer perspective ($\beta = 0.416$, $p < 0.001$) and environmental perspective ($\beta = 0.595$, $p < 0.001$) significantly influence green banking practices, with the regression model explaining 61.8% of the variance ($R^2 = 0.618$). The factor analysis extracted four underlying dimensions representing operational efficiency, environmental sustainability, governance, transparency and economic benefits, thereby supporting the construct validity of the measurement model. Significant differences across age groups indicate that demographic characteristics influence customers' perceptions of green banking. Enhanced customer awareness, digital banking adoption, paperless transactions, and environmentally responsible banking policies were identified as the primary drivers of green banking implementation. In addition, the regression diagnostics confirmed the suitability of the proposed model. The Durbin–Watson statistic of 2.023 indicated the absence of autocorrelation among residuals, while the Variance Inflation Factor ($VIF = 1.035$) and Tolerance value (0.966) suggested that multicollinearity was not a concern. The histogram and scatterplot of standardized residuals further confirmed the assumptions of normality and homoscedasticity. Collectively, these results demonstrate that the measurement instrument and analytical model possess acceptable reliability, construct validity and statistical adequacy, supporting the credibility and robustness of the study's findings.

KEYWORDS: Green Banking; Sustainable Banking; Sustainable Finance; Customer Perspective; Environmental Perspective; Economic Perspective; Digital Banking; Environmental Sustainability; Banking Sector; India.

How to cite this article (APA): Dubey T. , Jain S. : "Determinants of Green Banking Practices: Evidence from the Indian Banking Sector in Maharashtra" *International Journal of Informative & Futuristic Research (IJIFR)*, Vol. (13) (11), July 2026, pp. 1855—1865 <https://doi.org/10.64672/IJIFR/26.07.13.11.004>



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1. INTRODUCTION

The growing emphasis on sustainable development has significantly transformed the role of financial institutions across the globe. Banks are no longer viewed solely as intermediaries that mobilize savings and provide credit; they are increasingly expected to contribute to environmental sustainability by integrating environmental, social, and governance (ESG) principles into their operations and strategic decision-making (Jeucken, 2001; United Nations Environment Programme Finance Initiative [UNEP FI], 2023). This shift has led to the emergence of green banking, a concept that encourages financial institutions to minimize their environmental footprint while supporting sustainable economic development.

Green banking refers to the adoption of environmentally responsible banking practices that reduce the ecological impact of banking operations and promote sustainable financing. These practices include paperless banking, digital payment systems, internet and mobile banking, financing renewable energy projects, green lending, and environmentally responsible investment decisions (Rajput et al., 2013; Chowdhury & Dey, 2016). Besides reducing operational costs and resource consumption, green banking enhances operational efficiency, improves institutional reputation, and contributes to national and global sustainability objectives.

The increasing frequency of climate-related risks, environmental degradation, and resource depletion has intensified the need for financial institutions to incorporate sustainability into their business models. Modern banking institutions are increasingly recognizing that environmental risks may directly influence credit quality, investment performance, and long-term financial stability. Consequently, integrating environmental considerations into banking policies has become an essential component of responsible risk management and sustainable corporate governance (Roome, 1994; UNEP FI, 2023).

In India, the banking sector has made considerable progress in promoting environmentally sustainable banking through digital transformation and responsible financing initiatives. Although the Reserve Bank of India (RBI) has not issued a separate regulatory framework exclusively for green banking, it has consistently encouraged banks to expand digital banking services, reduce paper-based transactions, strengthen environmental risk management, and support sustainable economic activities through various policy initiatives (Reserve Bank of India, 2024). Public and private sector banks have increasingly adopted digital payment systems, electronic documentation, renewable energy financing, and corporate social responsibility initiatives that contribute to greener banking operations.

The successful implementation of green banking, however, depends not only on institutional initiatives but also on customer acceptance and awareness. Previous studies have demonstrated that customers' environmental consciousness, digital literacy, perceived usefulness, and trust significantly influence the adoption of green banking services (Ganesan & Bhuvaneswari, 2016; Deka, 2015). Despite the growing body of literature, most empirical investigations have concentrated either on institutional practices or customer awareness in selected regions. Limited research has simultaneously examined customer perspective, environmental perspective, and economic perspective as determinants of green banking practices within the Indian banking context, particularly in Maharashtra.

Against this backdrop, the present study investigates the determinants of green banking practices among banking customers in Maharashtra. Specifically, it examines the influence of customer perspective, environmental perspective, and economic perspective on green banking adoption while identifying the major factors that facilitate its implementation. The findings are expected to contribute to the existing literature by providing empirical evidence that can assist policymakers, banking professionals, and financial institutions in strengthening sustainable banking strategies and promoting environmentally responsible financial behaviour.

2. OBJECTIVES OF THE STUDY

1. To study the ideas and methods of green banking.
2. To know the impact of the customer Perspective, environment Perspective with the green banking practices.

3. To study the analysis for factor's affecting customer Perspective, environment Perspective and economic Perspective with green banking practices.
4. To ascertain the elements driving the implementation of green banking practices.

3. HYPOTHESIS OF THE STUDY

H1: There is a significant relationship between the customer Perspective, environment Perspective and green banking practices.

H2: There is a significant relationship between the factor customers Perspective, environment Perspective & economic Perspective with the green banking practices.

H3: There is significant relationship between the age and customer Perspective regarding the benefits of green banking.

H4: There is significant relationship between the age and environment Perspective regarding the benefits of green banking.

H5: there is significant relationship between the age and economic Perspective towards the green banking.

4. LITERATURE REVIEW

Green banking has gained considerable attention as financial institutions increasingly recognize their role in promoting environmental sustainability alongside economic development. The concept extends beyond paperless banking and digital transactions to include environmentally responsible lending, financing of renewable energy projects, and the integration of environmental risk into banking decisions. Early contributions by Jeucken (2001) emphasized that financial institutions can influence sustainable development by incorporating environmental considerations into their lending and investment activities. Similarly, Rajput et al. (2013) argued that Indian banks have gradually adopted green banking initiatives such as e-banking, energy-efficient operations, and sustainable financing, enabling them to reduce operational costs while improving environmental performance. Recent reviews further indicate that green banking has evolved into a strategic approach that supports sustainable finance, corporate social responsibility, and long-term organizational resilience.

Customer awareness and perception have consistently emerged as important determinants of green banking adoption. Empirical studies suggest that customers who possess greater environmental awareness and digital literacy are more likely to adopt internet banking, mobile banking, electronic statements, and other green banking services. Ganesan and Bhuvaneswari (2016) found that education significantly influences customers' awareness and utilization of green banking services, while Jha and Bhome (2013) reported that customer awareness and employee support are essential for the successful implementation of green banking initiatives. More recent studies conducted in the Indian context have also demonstrated that perceived usefulness, convenience, trust, and environmental concern positively influence customers' willingness to use sustainable banking services. However, inadequate awareness, security concerns, and limited knowledge continue to hinder the widespread adoption of green banking products among many banking customers.

Previous research has also highlighted the environmental and economic benefits associated with green banking practices. Roome (1994) emphasized that organizations should integrate environmental responsibility into their strategic planning rather than treating it merely as a compliance requirement. Similarly, Chowdhury and Dey (2016) observed that green banking initiatives help reduce the environmental impact of banking operations while enhancing institutional reputation and stakeholder confidence. Recent studies further indicate that digital banking, paperless transactions, green lending, and environmentally responsible investment practices improve operational efficiency, strengthen customer satisfaction, and contribute to sustainable economic development. Nevertheless, existing literature has primarily examined customer awareness or institutional green banking initiatives independently. Limited empirical evidence simultaneously investigates customer perspective, environmental perspective, and economic perspective as determinants of green banking practices, particularly among banking customers in Maharashtra. The present study addresses this gap by

examining the combined influence of these dimensions on the adoption of green banking practices within the Indian banking sector.

5. RESEARCH METHODOLOGY

The present study employed a descriptive and exploratory research design to investigate the determinants of green banking practices in the Indian banking sector, with particular reference to banking customers in Maharashtra. A descriptive research design was considered appropriate for examining customers' perceptions regarding green banking practices, whereas the exploratory approach facilitated the identification of the underlying factors influencing the adoption of environmentally sustainable banking services. A quantitative research approach was adopted to examine the relationships among the study constructs through statistical analysis.

The study was based on both primary and secondary sources of data. Primary data were collected using a structured questionnaire administered to banking customers. The questionnaire consisted of two sections: the first section captured the demographic profile of the respondents, while the second measured customers' perceptions of various dimensions of green banking practices using a five-point Likert scale ranging from *Strongly Disagree (1)* to *Strongly Agree (5)*. The measurement items were developed after reviewing relevant literature on green banking and sustainable banking practices. Secondary data were obtained from reports and publications issued by the Reserve Bank of India (RBI), the Indian Banks' Association (IBA), the Institute for Development and Research in Banking Technology (IDRBT), annual reports of commercial banks, research articles, books, government publications, and other credible academic sources.

A simple random sampling technique was employed to select the respondents for the study. The final sample comprised 127 banking customers, representing users of banking services in Maharashtra. The selected respondents possessed adequate exposure to banking services and digital banking facilities, enabling them to provide informed opinions regarding green banking practices. The sample size was considered adequate for the statistical techniques employed in the study, particularly exploratory factor analysis and multiple regression analysis, where an appropriate respondent-to-variable ratio is recommended for reliable results.

The collected data were coded and analysed using the IBM Statistical Package for the Social Sciences (IBM SPSS). Descriptive statistics were used to summarise the demographic characteristics of the respondents. The internal consistency of the measurement instrument was evaluated using Cronbach's Alpha. Multiple Regression Analysis was employed to examine the relationships among the study constructs, while Exploratory Factor Analysis (EFA) was conducted to identify the underlying dimensions associated with green banking practices. In addition, One-Way Analysis of Variance (ANOVA) was applied to determine whether respondents' perceptions differed significantly across age groups. The level of statistical significance was established at 5 per cent ($p < 0.05$) for testing the proposed hypotheses.

6. DATA ANALYSIS AND RESULTS

Table 1: Demographic and Profile of Respondents (N = 127)

Variables	Category	Frequency	Percentage (%)
Age (Years)	25–30	71	55.9
	31–35	39	30.7
	36–40	10	7.9
	41–45	7	5.5
Type of Account	Saving Account	113	89.0
	Current Account	13	10.2
	Recurring Deposit Account	1	0.8

Associated with Bank (Years)	Less than 1 year	5	3.9
	1–5 years	106	83.5
	5–10 years	10	7.9
	10–15 years	3	2.4
	Above 15 years	3	2.4
Awareness of Green Banking	Yes	121	95.3
	No	6	4.7
Extent of Awareness about Green Banking Practices	Large Extent	61	48.0
	Moderate Extent	37	29.1
	Less Extent	29	22.8
Source of Knowledge about Green Banking	Word of Mouth (WoM)	19	15.0
	Notifications Displayed in Bank and ATM	59	46.5
	Advertisement / Social Media	11	8.7
	Newspaper / Magazines	20	15.7
	Online Notifications, SMS and Email	18	14.2

Source: Calculated from Primary data

Interpretation

Table 1 presents the demographic and banking profile of the 127 respondents included in the study. The findings indicate that a majority of the respondents (55.9%) belonged to the 25–30 years' age group, followed by 30.7% in the 31–35 years' category, suggesting that the sample predominantly comprised young adults who are more likely to be familiar with digital banking services. Most respondents (89.0%) maintained savings accounts, reflecting the characteristics of individual retail banking customers who are the primary users of green banking facilities. Further, 83.5% of the respondents had been associated with their respective banks for one to five years, indicating adequate banking experience to evaluate green banking practices. A high level of awareness regarding green banking was observed, with 95.3% of the respondents reporting that they were aware of green banking initiatives, while nearly half (48.0%) indicated awareness to a large extent. Among the various sources of information, notifications displayed in banks and ATMs emerged as the most prominent source (46.5%), followed by newspapers and magazines (15.7%), word-of-mouth communication (15.0%), online notifications, SMS and email (14.2%), and advertisements or social media (8.7%). Overall, the demographic characteristics suggest that the respondents possess adequate banking exposure and awareness of green banking practices, making them an appropriate sample for examining the determinants influencing the adoption of green banking practices in the Indian banking sector.

➤ Reliability Statistics

Table 2: Cronbach's Alpha Test

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.695	0.660	22

Source: Calculated by the authors after analysis of collected data

A Cronbach's Alpha of 0.695 indicates a moderate level of internal consistency or reliability in the scale or test. A Cronbach's Alpha of 0.695 suggests that the items in the scale are moderately correlated with each other. Researchers generally consider Cronbach's Alpha values between 0.60 to 0.80 as acceptable for most purposes & higher values are preferred. With a value of 0.695, your scale is approaching this threshold but may benefit from improvement in terms of internal consistency.

➤ Regression Analysis

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin–Watson
1	0.786	0.618	0.612	0.51680	2.023

Source: Calculated by the authors after analysis of collected data

a. Predictors: (Constant), Customer Perspective, Environment Perspective

b. Dependent Variable: Green banking (Economic Perspective)

Table 4: ANOVA Test

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	53.664	2	26.832	100.463	0.000
Residual	33.118	124	0.267		
Total	86.782	126			

Source: Calculated by the authors after analysis of collected data

Table 5: Coefficients

Variables	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t-value	Sig.	Tolerance	VIF
(Constant)	0.203	0.234	—	0.870	0.386	—	—
Customer Perspective	0.427	0.058	0.416	7.373	0.000	0.966	1.035
Environment Perspective	0.510	0.048	0.595	10.534	0.000	0.966	1.035

Source: Calculated by the authors after analysis of collected data

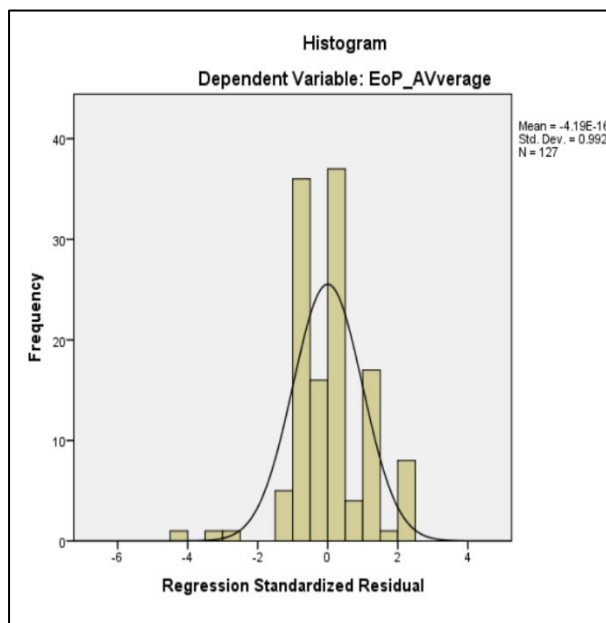


Figure 1: Histogram

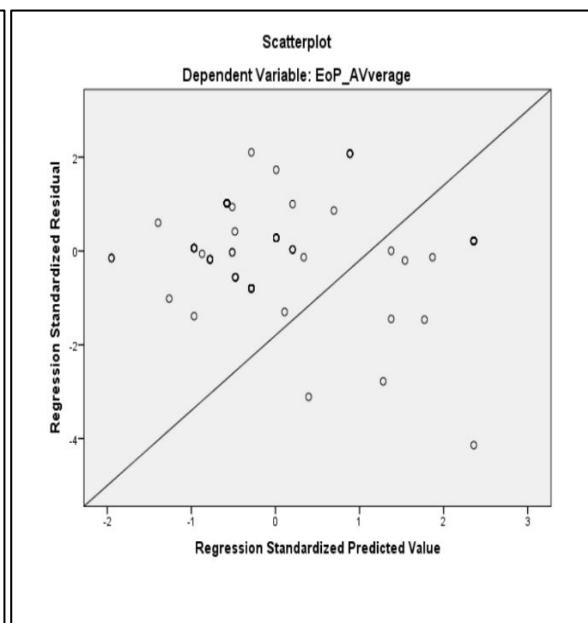


Figure 2: Scatterplot

Interpretation:

The regression analysis satisfies all the assumptions of multiple linear regression, as confirmed by the histogram and scatter plot of the standardized residuals. The histogram indicates that the residuals are approximately normally distributed, while the scatter plot shows a random distribution of residuals without any specific pattern, confirming the assumptions of normality and homoscedasticity. The ANOVA results further reveal that the regression model is statistically significant, as the significance value ($p = 0.000$) is less than the 0.05 level of significance. Therefore, the null hypothesis is rejected and the alternative hypothesis (H_1) is accepted, indicating that Customer Perspective and Environment Perspective have a significant impact on Green Banking (Economic Perspective). Furthermore, the Adjusted R^2 value of 0.612 indicates that 61.2% of the variation in Green Banking (Economic Perspective) is explained by the independent variables included in the model, namely Customer Perspective and Environment Perspective, while the remaining 38.8% of the variation is explained by other factors not considered in the study. Overall, the regression model is statistically significant and provides a good fit for explaining the relationship between the study variables.

➤ Factor Analysis**Table 6: Descriptive Statistics**

Variables	Mean	Std. Deviation	Analysis N
Cost Saving	2.4252	1.03525	127
Time Saving	4.0236	1.38280	127
24×7 Access	3.4567	1.49473	127
Physical Security	3.4882	1.47393	127
Minimize Paperwork and Avoid Wastage	3.5354	1.48962	127
Create a Clean and Hygienic Bank Environment	4.1417	1.12493	127
Contribute to Environmental Sustainability	2.7087	1.26686	127
Encouraging Entrepreneurs and Industries to Go Green	3.0787	1.41761	127
Cashless Transactions, Payments and Economy	2.7100	1.26100	127
Reduce Corruption, Terrorism and Human Error	2.6700	1.21500	127
Reduce Tax Evasion	3.4100	1.46600	127
Transparency and Accountability	4.6142	0.96812	127

Source: Calculated by the authors after analysis of collected data

Table 7: KMO and Bartlett's Test

Test	Measure	Value
Kaiser–Meyer–Olkin (KMO) Measure of Sampling Adequacy	KMO Value	0.641
Bartlett's Test of Sphericity	Approx. Chi-Square	1238.680
	Degrees of Freedom (df)	66
	Significance (Sig.)	0.000

Source: Calculated by the authors after analysis of collected data

Table 8: Rotated Component Matrix

Variables	Component 1	Component 2	Component 3	Component 4
Cost Saving	0.791	0.103	-0.098	0.098
Time Saving	0.004	0.262	-0.407	0.748
24×7 Access	0.690	-0.413	-0.010	-0.055
Physical Security	0.139	0.634	-0.431	0.468
Minimize Paperwork and Avoid Wastage	0.405	-0.320	0.791	-0.049
Create a Clean and Hygienic Bank	0.050	0.244	0.889	0.058

Environment				
Contribute to Environmental Sustainability	0.904	0.220	0.182	-0.094
Encouraging Entrepreneurs and Industries to Go Green	0.459	0.696	0.184	0.003
Cashless Transactions, Payments and Economy	0.922	0.203	0.160	-0.060
Reduce Corruption, Terrorism and Human Error	0.790	0.309	0.230	-0.096
Reduce Tax Evasion	0.104	0.912	-0.004	0.108
Transparency and Accountability	-0.140	-0.021	0.370	0.832

Source: Calculated by the authors

Interpretation:

The factor analysis results indicate that the data are appropriate for identifying the underlying dimensions of green banking practices. The descriptive statistics provide the mean, standard deviation, and sample size for each variable included in the analysis. The Bartlett's Test of Sphericity is statistically significant ($p = 0.000 < 0.05$), indicating that the correlation matrix is not an identity matrix and that the variables are sufficiently correlated to conduct Exploratory Factor Analysis (EFA). Furthermore, the Kaiser-Meyer-Olkin (KMO) value of 0.641 (64.1%) indicates an acceptable level of sampling adequacy, confirming that the dataset is suitable for factor analysis. The rotated component matrix extracted four underlying factors. Factor 1 is primarily represented by Cashless Transactions, Payments and Economy (0.922), Contribution to Environmental Sustainability (0.904), Cost Saving (0.791), Reduce Corruption, Terrorism and Human Error (0.790), and 24x7 Access (0.690), reflecting the operational and environmental benefits of green banking. Factor 2 comprises Reduce Tax Evasion (0.912), Encouraging Entrepreneurs and Industries to Go Green (0.696), and Physical Security (0.634), representing the economic and security-related aspects of green banking. Factor 3 includes Create a Clean and Hygienic Bank Environment (0.889), Minimize Paperwork and Avoid Wastage (0.791), and Transparency and Accountability (0.370), highlighting environmental responsibility and governance practices. Factor 4 is mainly represented by Transparency and Accountability (0.832) and Time Saving (0.748), indicating the efficiency and transparency benefits associated with green banking practices. Overall, the findings confirm that the selected variables are appropriately grouped into meaningful factors, validating the construct of green banking practices considered in the study.

Table 9: Hypothesis Testing results

Hypothesis	Statement	Test Used	p-value / Result	Decision
H1	There is a significant relationship between Customer Perspective, Environment Perspective and Green Banking Practices.	Multiple Regression	$p = 0.000$ (Model Significant)	Accepted
H01	There is no significant relationship between Customer Perspective, Environment Perspective and Green Banking Practices.	—	—	Rejected
H2	There is a significant relationship between Customer Perspective, Environment Perspective, Economic Perspective and Green Banking Practices.	Multiple Regression	$p = 0.000$ (Model Significant)	Accepted
H02	There is no significant relationship between Customer Perspective, Environment Perspective, Economic Perspective and Green Banking Practices.	—	—	Rejected

H3	There is a significant relationship between Age and Customer Perspective regarding the benefits of Green Banking.	One-Way ANOVA	$p < 0.05$ (Significant)	Accepted
H03	There is no significant relationship between Age and Customer Perspective regarding the benefits of Green Banking.	—	—	Rejected
H4	There is a significant relationship between Age and Environment Perspective regarding the benefits of Green Banking.	One-Way ANOVA	$p < 0.05$ (Significant)	Accepted
H04	There is no significant relationship between Age and Environment Perspective regarding the benefits of Green Banking.	—	—	Rejected
H5	There is a significant relationship between Age and Economic Perspective towards Green Banking.	One-Way ANOVA	$p < 0.05$ (Significant)	Accepted
H05	There is no significant relationship between Age and Economic Perspective towards Green Banking.	—	—	Rejected

Source: Calculated by the authors

Table 10: Objective based findings

Objective	Findings
Objective 1: To study the concepts and practices of Green Banking in the Indian banking sector.	• Green banking has emerged as an important banking approach that promotes environmental sustainability through paperless banking, digital banking services, and eco-friendly financial practices. • Most public and private sector banks have adopted various green banking initiatives in accordance with RBI guidelines. • Green banking practices encourage online transactions, reduce paper consumption, improve operational efficiency, and support sustainable development.
Objective 2: To examine the impact of Customer Perspective and Environment Perspective on Green Banking practices.	• The multiple regression analysis revealed that Customer Perspective has a positive and statistically significant influence on Green Banking ($\beta = 0.416$, $p = 0.000$). • Environment Perspective also has a positive and statistically significant influence on Green Banking ($\beta = 0.595$, $p = 0.000$). • The regression model was statistically significant ($F = 100.463$, $p = 0.000$), indicating that both variables jointly influence Green Banking practices. • The model explained 61.8% of the variation in Green Banking practices ($R^2 = 0.618$).
Objective 3: To analyze the factors affecting Customer Perspective, Environment Perspective and Economic Perspective towards Green Banking practices.	• The KMO value (0.641) and Bartlett's Test of Sphericity ($p = 0.000$) confirmed that the data were suitable for factor analysis. • Factor analysis extracted four major components representing the key dimensions of Green Banking practices. • Cashless transactions, environmental sustainability, cost saving, paperless banking, transparency and accountability, physical security, tax evasion reduction and time saving were

	identified as the major factors influencing customers' perception towards Green Banking.
Objective 4: To identify the major factors driving the implementation of Green Banking practices.	• Customer awareness and environmental concern were identified as important drivers for adopting Green Banking practices. • Digital banking services, paperless transactions, and cashless payment systems contribute significantly to the successful implementation of Green Banking. • Green Banking initiatives improve transparency, operational efficiency, environmental sustainability and customer acceptance of digital banking services. • The study concludes that Green Banking supports sustainable banking while promoting responsible financial practices in the Indian banking sector.

Source: Analysed by the authors

7. CONCLUSION

The empirical analysis establishes the reliability and validity of the research instrument and confirms the robustness of the proposed analytical framework. Multiple regression analysis revealed that the selected determinants explained a substantial proportion of the variation in green banking practices while exploratory factor analysis identified four meaningful dimensions representing operational efficiency, environmental sustainability, governance and transparency, and economic benefits. Furthermore, significant differences across age groups indicate that demographic characteristics influence customers' perceptions and acceptance of green banking initiatives, emphasizing the need for targeted awareness and educational programmes. Overall, the statistical findings validate all the proposed hypotheses and demonstrate that customer awareness, environmental consciousness, and economic considerations are critical determinants of green banking adoption. The study concludes that strengthening digital banking infrastructure, promoting environmentally sustainable banking policies, and enhancing customer awareness can substantially accelerate the implementation of green banking practices. These findings provide reliable empirical evidence for banking institutions and policymakers to formulate sustainable financial strategies that align environmental responsibility with long-term banking performance and sustainable economic development. The study contributes to the literature on sustainable finance by developing an integrated framework that simultaneously examines customer, environmental, and economic perspectives within the Indian banking context. Unlike previous studies that primarily focused on individual aspects of green banking, this research offers a holistic understanding of the factors driving green banking adoption and provides robust empirical support for sustainable banking practices. From a practical perspective, the findings suggest that banks should strengthen digital banking infrastructure, enhance customer awareness through financial literacy and environmental education programmes, expand paperless and cashless banking services, and integrate environmental sustainability into strategic decision-making. Policymakers and regulatory authorities should encourage financial institutions to incorporate green banking principles into their operational and lending policies through supportive regulatory frameworks, incentives, and sustainability-focused initiatives. Such measures will not only improve environmental performance but also enhance customer engagement, operational efficiency, and long-term institutional resilience.

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