#### **Impact of Environmental Awareness on Adoption of Green Banking Practices**

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#### Abstract

This research paper investigates the relationship between environmental awareness and the adoption of green banking practices in Mumbai, Maharashtra. The study specifically examines how environmental awareness, eco-consciousness, and educational background influence customers' adoption of green banking services. Using a structured questionnaire, data was collected from 450 respondents across Mumbai through stratified random sampling. The theoretical framework was built upon the Theory of Change, which helps explain the causal links between stakeholders' pressure and outcomes in the green transformation of the banking sector. The study employed multiple statistical techniques including correlation analysis, multiple regression, and moderation analysis to test the proposed hypotheses. Findings revealed a significant positive relationship between environmental awareness and green banking adoption (r=0.73, p<0.01), with educational background serving as a significant moderator in this relationship. The study uncovered that respondents with higher levels of environmental awareness were 3.2 times more likely to adopt green banking practices compared to those with lower awareness levels. Additionally, eco-consciousness was found to have a strong mediating effect between educational background and green banking adoption. The research contributes to the existing literature by filling gaps regarding the specific role of environmental awareness in driving green banking adoption in metropolitan areas. The findings provide valuable insights for banks, policymakers, and environmental advocates to design targeted strategies that enhance environmental awareness among customers, thereby accelerating the transition toward sustainable banking practices. This study recommends educational campaigns, incentive programs, and policy frameworks to foster greater environmental awareness and subsequently increase green banking adoption.

**Keywords:** Environmental awareness, Green banking, Eco-consciousness, Educational background, Sustainable banking

### Introduction

Environmental sustainability has emerged as a critical global concern in recent decades, compelling various sectors, including banking, to reconsider their operational models and adopt eco-friendly practices. Green banking represents a paradigm shift in the financial industry's approach to environmental responsibility, integrating ecological considerations into traditional banking functions. As defined by Sabarinath (2018), "Green Banking is an umbrella term referring to practices and guidelines that make banks sustainable in economic environment and social dimensions." This concept has gained significant momentum as financial institutions recognize their pivotal role in fostering sustainable development.

Green banking encompasses a wide range of practices designed to minimize environmental impact while maximizing positive contributions to ecological sustainability. These include paperless transactions, green financing for environmentally friendly projects, energy-efficient branch operations, and products specifically designed to promote sustainability. According to recent research, the banking sector's adoption of green practices not only contributes to environmental conservation but also enhances bank reputation and profitability in the long term.

Environmental awareness—the consciousness and knowledge about environmental issues and the willingness to address them—is theorized to be a significant driver of green banking adoption. As individuals become more environmentally conscious, they increasingly seek services and products that align with their values, potentially driving demand for green banking options. This relationship, however, remains insufficiently explored in existing literature, particularly in developing economies like India where the concept of green banking is still evolving.

The transition toward green banking is influenced by multiple factors, including regulatory frameworks, stakeholder pressure, and consumer demand. Among these factors, consumer environmental awareness potentially plays a crucial role in determining the pace and extent of green banking adoption. As noted by Rehman (2021), "The devastating effects of recent flooding, droughts and extreme temperatures that several people all over the world have experienced

Conference Proceedings International Conference on Sustainable Development Goals-Challenges, Issues & Practices by TMIMT- College of Management, Teerthanker Mahaveer University, Moradabad 25th & 26th April 2025. TMIMT International Journal (ISSN: 2348-988X) compelled everyone to begin thinking about global warming and its consequences." This heightened awareness may translate into changed consumer behavior, including banking choices.

Educational background serves as another potentially significant variable in this relationship. Higher education levels may correlate with greater environmental awareness and, consequently, with increased adoption of green banking practices. However, this relationship is complex and requires further investigation to understand how educational attainment interacts with ecoconsciousness to influence banking behavior.

Despite the growing importance of green banking, there remains a significant research gap in understanding how environmental awareness translates into actual adoption of green banking practices. This study aims to bridge this gap by examining the relationship between environmental awareness, eco-consciousness, educational background, and green banking adoption in Mumbai, Maharashtra—a major financial hub in India. By investigating these relationships, this research contributes to the growing body of literature on sustainable banking and provides practical insights for financial institutions seeking to enhance their green banking initiatives.

As climate concerns intensify and sustainable development becomes increasingly central to global economic planning, understanding the drivers of green banking adoption becomes crucial for banks, policymakers, and environmental advocates alike. This research provides valuable insights into how environmental awareness can be leveraged to accelerate the transition toward more sustainable banking practices, ultimately contributing to broader environmental goals.

## **Literature Review**

**Sidiqi and Ahmad (2024)** conducted a comprehensive study on the impact of green banking awareness on green FinTech adoption and its subsequent effects on environmental, social, and governance investments. Employing a quantitative approach with partial least squares-structural equation modeling (PLS-SEM), they analyzed data from 196 FinTech users in North India. The researchers identified a significant positive relationship between green banking awareness and green FinTech adoption, suggesting that heightened awareness of environmental issues positively influences the adoption of sustainable financial technology solutions. Their findings emphasized that green FinTech adoption was positively associated with increased ESG investments, perceived

Conference Proceedings International Conference on Sustainable Development Goals-Challenges, Issues & Practices by TMIMT- College of Management, Teerthanker Mahaveer University, Moradabad 25th & 26th April 2025. TMIMT International Journal (ISSN: 2348-988X) profitability, and sustainability of personal investment portfolios. The study highlighted the potential of green FinTech adoption to drive both financial empowerment and environmental responsibility. The authors concluded that financial institutions should prioritize raising awareness about green banking options to encourage adoption of environmentally responsible financial technologies, which would contribute to sustainable development goals while also enhancing customer satisfaction and loyalty in an increasingly environmentally conscious marketplace.

Kamath and Rao (2024) assessed the impact of customer awareness on green banking practices in public and private sector banks in Karnataka, India. Using a quantitative survey methodology, they collected data from 400 customers and 40 bank managers across both banking sectors. Their findings revealed that customer awareness significantly drives green banking adoption across both public and private banks. However, private sector banks demonstrated a stronger correlation between customer awareness and the adoption of green practices compared to public sector banks. The researchers attributed this difference to private banks' higher technological innovation and customer-centric approaches. Conversely, they found that public sector banks, with their broader reach, had greater potential to lead the green banking movement, particularly in rural areas, despite facing challenges related to legacy systems and resource limitations. The study concluded that enhancing customer awareness and engagement is crucial for advancing green banking practices, and banks prioritizing sustainability communication gain a competitive advantage. The authors recommended targeted awareness campaigns, seamless integration of green features into existing banking services, and collaboration between public and private sectors to leverage their respective strengths in promoting sustainable banking.

**Burhanudin, Basuki, and Fernando (2023)** explored the relationship between green banking practices, bank reputation, and environmental awareness in Islamic banks within a developing economy. Their study gathered data from 390 employees of Islamic banks through a survey and analyzed it using structural equation modeling via Smart-PLS. The research focused on four aspects of green banking: employees-related practices, daily operations-related practices, customers-related practices, and financing and investment practices. The findings revealed that adopting green banking initiatives significantly enhanced bank reputation among both customers and employees. Moreover, environmental awareness among bank employees moderated this

Conference Proceedings International Conference on Sustainable Development Goals-Challenges, Issues & Practices by TMIMT- College of Management, Teerthanker Mahaveer University, Moradabad 25th & 26th April 2025. TMIMT International Journal (ISSN: 2348-988X) relationship, amplifying the positive effect of green practices on reputation. The authors emphasized that Islamic banks could leverage green banking as a strategic approach to improve their market position while contributing to environmental sustainability. They recommended comprehensive training programs to raise environmental awareness among bank staff, arguing that environmentally conscious employees not only implemented green practices more effectively but also served as ambassadors for sustainable banking to customers, creating a multiplier effect in promoting green banking adoption throughout the community.

**Natarajan and Kumar** (2023) conducted an in-depth examination of customer awareness regarding green banking in Ahmedabad, India. Using a sample of 100 respondents and employing descriptive statistics, their study revealed varying levels of awareness across different demographic segments. The researchers found that while general awareness about the concept of green banking existed among 67% of respondents, detailed knowledge about specific green banking products and services was significantly lower at 38%. Their analysis showed a positive correlation between environmental consciousness and the usage of green banking services, with environmentally aware customers 2.3 times more likely to utilize paperless banking options. Interestingly, the study also highlighted that awareness did not always translate into adoption, with 42% of respondents indicating that despite being aware of green banking options, they continued to use traditional banking methods due to perceived convenience and habit. The authors concluded that banks should create more comprehensive awareness campaigns and develop creative, innovative approaches to green banking that demonstrate tangible benefits to society. They emphasized that customer education would be crucial in bridging the gap between awareness and actual adoption of green banking practices, ultimately contributing to environmental sustainability.

Alam and Rahman (2022) conducted a comprehensive review of green banking and sustainability literature from 2012 to 2022, analyzing 45 research publications. Using bibliometric and thematic analysis through NVivo and Biblioshiny, they identified significant trends in green banking research. The authors discovered that interest in green banking increased substantially during the COVID-19 pandemic, with approximately 12.5% of the literature emerging shortly after the first wave of the crisis. Their analysis divided green banking articles into two major clusters and one minor cluster, with most studies covering topics like "sustainable," "sustainable development," and

Conference Proceedings International Conference on Sustainable Development Goals-Challenges, Issues & Practices by TMIMT- College of Management, Teerthanker Mahaveer University, Moradabad 25th & 26th April 2025. TMIMT International Journal (ISSN: 2348-988X) "sustainability." The researchers identified a significant gap in theoretical frameworks for green banking, noting that aside from legitimacy and stakeholder theories, few clear frameworks had been established in the field. Their geographical analysis revealed China as the leader in green banking publications with 17 articles, followed by Malaysia with 11, and both Australia and India with 9 each. The authors concluded that despite growing interest, green banking remains an underdeveloped field requiring more rigorous theoretical foundations and emphasized the need for policymakers and academics to address identified research gaps to advance sustainable banking practices globally.

Nizam and Usmani (2022) examined green banking practices and their contribution to environmental sustainability through a comprehensive literature review and website analysis of various financial institutions including SBI (State Bank of India) and MayBank (Malaysia). Their research highlighted that the devastating effects of extreme weather events worldwide have compelled various stakeholders to address global warming through sustainable practices. The authors found that banks play a vital role in developing robust low-carbon economies by incorporating environmental data into credit extension and investment decisions. Their analysis revealed that businesses with larger carbon footprints were increasingly viewed as riskier investments, with banks becoming more reluctant to finance such enterprises in favor of innovative technologies that reduce carbon emissions. The researchers emphasized that green banking is becoming essential for sustainable development, providing benefits not only to banks but also to industries and the environment. The study concluded that financial institutions should proactively improve their environmental performance through green banking initiatives, as this would add long-term value to their operations while contributing to global sustainability goals. The authors recommended developing comprehensive frameworks for measuring and reporting the environmental impact of banking activities to standardize green banking practices across the industry.

**Rehman and Zhang (2021)** investigated the adoption of green banking practices and their relationship to environmental performance using data from 352 banking employees. Employing structural equation modeling, they found that green banking operations had a substantial positive influence on both the environmental performance of banks and the green funding sources available

to them. The researchers identified several barriers to green banking implementation, including lack of customer awareness, high investment costs, technological challenges, and insufficient staff expertise. Their analysis revealed that banks implementing comprehensive green practices reported a 27% improvement in environmental performance metrics over a two-year period. Additionally, they found that banks with formalized green banking policies attracted 34% more environmentally conscious customers compared to banks without such policies. The authors recommended several strategies to overcome adoption barriers, including reducing long-term costs, facilitating online banking accessibility, reducing carbon emissions, and enhancing knowledge of environmental responsibility. They concluded that banks should offer special loan conditions to businesses that have adopted green practices to encourage further sustainability initiatives across multiple sectors, creating a positive feedback loop for environmental conservation efforts.

Maheswari and Rajeswari (2021) conducted quantitative research on green banking practices in Tamil Nadu, India, collecting data from 200 banking employees across public and private sector banks including Corporation Bank, Indian Overseas Bank, State Bank of India, Indian Bank, and Canara Bank. Using purposive sampling, they investigated factors affecting green banking implementation and its impacts. Their statistical analysis revealed that 78% of respondents considered environmental risk assessment crucial for lending decisions, while 65% reported that their institutions had established formal green banking policies. The researchers found significant differences in green banking adoption between public and private sector banks, with private banks showing more innovative approaches but public banks demonstrating stronger policy frameworks. Interestingly, they discovered that employee environmental awareness significantly predicted green banking implementation success, with banks investing in employee environmental education reporting 42% higher green practice adoption rates. The authors emphasized that the transition to green banking requires a systematic approach involving all stakeholders, including bank employees, management, customers, and regulators. They concluded that banks should develop comprehensive training programs to enhance environmental awareness among employees, as this awareness serves as a foundation for successful green banking implementation and customer education about sustainable financial practices.

Linh and Anh (2020) examined the relationship between environmental awareness and green banking adoption in Southeast Asian emerging economies. Their mixed-methods study combined quantitative surveys of 315 bank customers with qualitative interviews of 28 banking executives across Vietnam, Thailand, and Malaysia. Their findings revealed that environmental awareness was the strongest predictor of green banking adoption ( $\beta$ =0.68, p<0.001), followed by perceived ease of use ( $\beta$ =0.45, p<0.01) and social influence ( $\beta$ =0.39, p<0.01). The researchers identified four levels of green banking adoption: non-adoption, partial adoption, substantial adoption, and full integration, with most customers (57%) falling into the partial adoption category. Their analysis showed that customers with high environmental awareness were 3.7 times more likely to move beyond partial adoption compared to those with low awareness. The bank executive interviews revealed that institutions were increasingly viewing environmental awareness as a strategic factor in product development and marketing. The authors concluded that banks should invest in raising environmental awareness not just as a corporate social responsibility initiative but as a core business strategy to drive green banking adoption. They recommended targeted educational campaigns highlighting the connection between individual banking choices and broader environmental impacts to accelerate the transition toward sustainable banking in emerging economies.

Sun, Wang, and Zhang (2020) conducted a comprehensive study on the role of environmental awareness in driving green banking initiatives across developing economies. Through a mixedmethods approach combining survey data from 428 banking customers and interviews with 35 banking executives, they explored the multidimensional nature of environmental awareness and its impact on banking behaviors. Their research identified three distinct components of environmental awareness: cognitive (knowledge about environmental issues), affective (emotional connection to nature), and conative (willingness to act on environmental concerns). The findings revealed that the conative component had the strongest relationship with green banking adoption (r=0.72), followed by affective (r=0.58) and cognitive (r=0.43) components. Furthermore, the researchers found that environmental awareness explained approximately 64% of the variance in green banking adoption, making it the most influential factor among those studied. Their analysis also revealed significant differences in how environmental awareness translated to banking behavior across age groups, with younger customers (18-35) showing stronger correlation between Conference Proceedings International Conference on Sustainable Development Goals-Challenges, Issues & Practices by TMIMT- College of Management, Teerthanker Mahaveer University, Moradabad 25th & 26th April 2025. TMIMT International Journal (ISSN: 2348-988X) awareness and adoption compared to older customers. The authors concluded that banks should develop nuanced strategies addressing all three components of environmental awareness to effectively promote green banking adoption, with particular emphasis on converting environmental knowledge and concern into actual willingness to change banking behaviors.

#### **Research Gap**

Despite the growing body of literature on green banking, this review reveals two significant gaps that warrant further investigation:

- Limited empirical research examining the specific relationship between environmental awareness and green banking adoption in metropolitan financial hubs like Mumbai. While studies have explored this relationship in other contexts, the unique demographic, economic, and environmental characteristics of Mumbai—India's financial capital—present a distinctive scenario that remains underexplored. This gap is significant considering Mumbai's pivotal role in shaping India's banking trends and sustainability initiatives.
- 2. Insufficient investigation into how educational background moderates the relationship between environmental awareness and green banking adoption. Existing research has primarily treated educational background as a demographic variable rather than exploring its interactive effects with environmental awareness in influencing banking behavior. Understanding this moderating relationship is crucial for developing targeted strategies to promote green banking across diverse educational segments.

### **Research Objectives**

Based on the identified research gaps, this study aims to fulfill the following objectives:

- **1.** To examine the impact of environmental awareness and eco-consciousness on the adoption of green banking practices among bank customers in Mumbai, Maharashtra.
- 2. To analyze how educational background moderates the relationship between environmental awareness and green banking adoption, particularly in the context of a rapidly developing metropolitan financial center.

## Hypotheses

In alignment with the research objectives, this study proposes the following hypotheses:

H<sub>1</sub>: There is a significant positive relationship between environmental awareness and the adoption of green banking practices among bank customers in Mumbai.

H<sub>2</sub>: Educational background significantly moderates the relationship between eco-consciousness and green banking adoption, with the relationship being stronger for individuals with higher educational attainment.

## **Research Methodology**

## **Theoretical & Conceptual Framework**

This study employs the Theory of Change (ToC) as its primary theoretical framework, which helps explain "how and why an initiative works" (Ibe-enwo et al., 2019). As described in the literature, ToC is particularly valuable for navigating "how an initiative—such as a policy, a strategy, a program, or a project—contributes through a chain of early and intermediate outcomes to the intended result" (Sun et al., 2020). In the context of green banking, ToC provides a strategic framework to demonstrate the connection between changes in environmental awareness and corporate behaviors as well as the broader economic shift toward green growth.

The conceptual framework illustrates the relationships between the independent variables (environmental awareness, eco-consciousness, educational background) and the dependent variable (adoption of green banking). Environmental awareness and eco-consciousness are hypothesized to have direct positive effects on green banking adoption, while educational background is proposed to moderate these relationships.

# **Type of Research**

This study employs a quantitative research design with descriptive and explanatory components. The descriptive aspect helps in profiling respondents' environmental awareness levels and green banking adoption patterns, while the explanatory component examines the causal relationships between the variables.

### **Source of Data Collection**

Primary data was collected through structured questionnaires administered to bank customers in Mumbai. Secondary data from academic journals, banks' annual reports, and environmental publications was used to develop the research instrument and contextualize the findings.

### **Research Instrument**

A structured questionnaire was developed based on previous validated scales. The questionnaire consists of five sections:

- 1. Demographic information (including educational background)
- 2. Environmental awareness measurement scale (15 items)
- **3.** Eco-consciousness assessment (12 items)
- 4. Green banking adoption measurement (18 items)
- **5.** Open-ended questions for additional insights

Each scale used a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The instrument was pilot-tested with 30 respondents to ensure reliability and validity before the main data collection.

## Population

The population for this study consists of all bank customers aged 18 years and above residing in Mumbai, Maharashtra, who have active bank accounts in either public or private sector banks.

# Sampling Unit

The sampling unit is an individual bank customer with at least one active bank account in Mumbai.

# Sample Size with Proper Calculation

The sample size was determined using the following formula:

 $n = (z^2 p q)/e^2$ 

Where:

- n = sample size
- z = confidence level value (1.96 for 95% confidence level)
- p = estimated proportion of the population (0.5 for maximum variability)
- q = 1 p(0.5)
- e = margin of error (0.046 or 4.6%)

 $n = (1.96^2 \times 0.5 \times 0.5)/0.046^2$ 

 $n = (3.8416 \times 0.25)/0.002116$ 

n = 0.9604/0.002116

n = 453.87

Therefore, the sample size was rounded to 450 respondents.

# Area of the Study

The study was conducted in Mumbai, Maharashtra, India's financial capital, covering all six administrative zones to ensure comprehensive geographical representation.

# Sampling Technique Used

Stratified random sampling was employed to ensure proportional representation across:

- **1.** Age groups (18-25, 26-35, 36-45, 46-55, above 55)
- 2. Banking sector preferences (public, private, or both)
- 3. Educational levels (high school, undergraduate, postgraduate, professional)
- 4. Geographical zones within Mumbai

# Statistical Tools Used

The following statistical tools were used for data analysis:

- 1. Descriptive statistics (means, frequencies, percentages)
- **2.** Reliability analysis (Cronbach's alpha)
- **3.** Correlation analysis
- **4.** Multiple regression analysis
- 5. Moderation analysis
- **6.** Factor analysis
- 7. ANOVA and t-tests for group comparisons

IBM SPSS version 26 and AMOS version 24 were used for statistical analysis.

### **Data Analysis & Interpretation**

Demographic Variable	Category	Frequency	Percentage (%)
	Male	247	54.9
Gender	Female	198	44.0
	Prefer not to say	5	1.1
	18-25 years	98	21.8
	26-35 years	152	33.8
Age	36-45 years	118	26.2
	46-55 years	54	12.0
	Above 55 years	28	6.2
	High School	36	8.0
Educational Background	Undergraduate	187	41.6
Luucational Dackground	Postgraduate	176	39.1
	Professional Degree	51	11.3
	Public Sector Banks	167	37.1
Bank Type Preference	Private Sector Banks	198	44.0
	Both Types	85	18.9

### Table 1: Demographic Profile of Respondents

Monthly Income	Below ₹25,000	78	17.3
	₹25,001-₹50,000	164	36.4
	₹50,001-₹75,000	128	28.4
	₹75,001-₹100,000	53	11.8
	Above ₹100,000	27	6.0

Interpretation: Table 1 presents the demographic profile of the 450 respondents. The sample had a fairly balanced gender distribution with a slightly higher proportion of males (54.9%) compared to females (44.0%). The majority of respondents (33.8%) were in the 26-35 age group, followed by the 36-45 age group (26.2%). Regarding educational background, most respondents had undergraduate (41.6%) or postgraduate (39.1%) degrees. In terms of bank preferences, 44.0% primarily used private sector banks, while 37.1% preferred public sector banks. The monthly income distribution showed that the majority of respondents (36.4%) earned between ₹25,001 and ₹50,000, followed by those earning between ₹50,001 and ₹75,000 (28.4%).

 Table 2: Environmental Awareness Levels Among Respondents

Environmental Awareness Level	Frequency	Percentage (%)
Very Low (1.00-1.80)	23	5.1
Low (1.81-2.60)	57	12.7
Moderate (2.61-3.40)	142	31.6
High (3.41-4.20)	168	37.3
Very High (4.21-5.00)	60	13.3
Total	450	100.0
Mean Score: 3.47	Standard Deviation: 0.86	

Interpretation: Table 2 illustrates the distribution of environmental awareness levels among respondents. The mean environmental awareness score was 3.47 on a 5-point scale, indicating a generally high level of environmental awareness. The largest group of respondents (37.3%) demonstrated high environmental awareness, followed by those with moderate awareness (31.6%). Only 5.1% of respondents showed very low environmental awareness, while 13.3% exhibited very

high awareness. These findings suggest that a significant proportion of bank customers in Mumbai possess substantial knowledge and concern about environmental issues, which may influence their banking choices.

Green Banking Practice	Never Used (%)	Rarely Used (%)	Sometimes Used (%)	Frequently Used (%)	Always Used (%)	Mean Score
Paperless banking/e- statements	7.1	12.4	21.8	30.2	28.5	3.61
Mobile banking applications	3.3	8.7	15.6	32.4	40.0	3.97
Online bill payments	4.2	9.8	17.3	29.8	38.9	3.89
Green loans/financing	32.4	26.7	23.1	11.6	6.2	2.33
Sustainable investment products	29.8	28.4	24.9	10.7	6.2	2.35
Eco-friendly credit cards	24.2	25.8	27.6	14.0	8.4	2.57
Overall Green Banking Adoption	16.8	18.6	21.7	21.5	21.4	3.12

**Table 3: Adoption Levels of Green Banking Practices** 

Interpretation: Table 3 shows the adoption levels of various green banking practices among respondents. Digital banking services show the highest adoption rates, with mobile banking applications (mean score = 3.97) being the most widely adopted, followed by online bill payments (3.89) and paperless banking/e-statements (3.61). In contrast, specialized green financial products like green loans/financing (2.33), sustainable investment products (2.35), and eco-friendly credit

Conference Proceedings International Conference on Sustainable Development Goals-Challenges, Issues & Practices by TMIMT- College of Management, Teerthanker Mahaveer University, Moradabad 25th & 26th April 2025. TMIMT International Journal (ISSN: 2348-988X) cards (2.57) have significantly lower adoption rates. This disparity suggests that while respondents are comfortable with digital banking that indirectly contributes to environmental conservation (by reducing paper usage and physical branch visits), they are less engaged with financial products explicitly designed for environmental impact.

Variables	Environmental Awareness	Eco- consciousness	Educational Background	Green Banking Adoption
Environmental Awareness	1	0.68**	0.39**	0.73**
Eco- consciousness	0.68**	1	0.42**	0.67**
Educational Background	0.39**	0.42**	1	0.51**
Green Banking Adoption	0.73**	0.67**	0.51**	1

 Table 4: Correlation Matrix Between Main Variables

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

Interpretation: Table 4 presents the correlation matrix between the main variables in this study. Environmental awareness shows a strong positive correlation with green banking adoption (r = 0.73, p < 0.01), supporting H1. Eco-consciousness also demonstrates a strong positive relationship with green banking adoption (r = 0.67, p < 0.01). Educational background displays a moderate positive correlation with green banking adoption (r = 0.51, p < 0.01). Additionally, environmental awareness and eco-consciousness are strongly correlated (r = 0.68, p < 0.01), suggesting some conceptual overlap between these constructs. All correlations are statistically significant at the 0.01 level, indicating that these relationships are unlikely to be due to chance.

## Table 5: Multiple Regression Analysis for Predictors of Green Banking Adoption

Predictor Variable	Unstandardized	Beta	Standardized	t	Sig.
	Coefficients		Coefficients		
(Constant)	0.487	0.158		3.082	0.002
Environmental	0.512	0.054	0.487	9.481	0.000
Awareness					
Eco-consciousness	0.325	0.053	0.312	6.132	0.000
Educational Background	0.178	0.042	0.174	4.238	0.000

#### $R = 0.794, R^2 = 0.630, Adjusted R^2 = 0.624, F = 201.457, p < 0.001$

Interpretation: Table 5 presents the results of multiple regression analysis with green banking adoption as the dependent variable. The overall model is statistically significant (F = 201.457, p < 0.001) and explains 63.0% of the variance in green banking adoption (R<sup>2</sup> = 0.630). Environmental awareness emerges as the strongest predictor of green banking adoption ( $\beta$  = 0.487, p < 0.001), followed by eco-consciousness ( $\beta$  = 0.312, p < 0.001) and educational background ( $\beta$  = 0.174, p < 0.001). All three predictor variables have significant positive effects on green banking adoption, with environmental awareness having the largest impact. These findings provide strong support for H1, confirming that environmental awareness significantly influences green banking adoption.

Predictor Variables	Model 1	Model 2	Model 3
Environmental Awareness (EA)	0.512***	0.493***	0.475***
Educational Background (EB)	0.178***	0.165***	0.156***
Eco-consciousness (EC)	0.325***	0.318***	0.309***
$EA \times EB$		0.147***	0.139***
$EC \times EB$			0.125***
R <sup>2</sup>	0.630	0.649	0.662
$\Delta R^2$		0.019	0.013
F for $\Delta R^2$		22.64***	16.27***

Table 6: Moder	ation Analysis -	<b>Educational</b>	Background as	Moderator

<sup>\*</sup>p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001

Conference Proceedings International Conference on Sustainable Development Goals-Challenges, Issues & Practices by TMIMT- College of Management, Teerthanker Mahaveer University, Moradabad 25th & 26th April 2025. TMIMT International Journal (ISSN: 2348-988X) Interpretation: Table 6 examines the moderating effect of educational background on the relationships between environmental awareness, eco-consciousness, and green banking adoption. Model 1 replicates the main effects from the previous regression analysis. Model 2 adds the interaction term between environmental awareness and educational background, which is significant ( $\beta = 0.147$ , p < 0.001) and increases the explained variance by 1.9% ( $\Delta R^2 = 0.019$ ). Model 3 further adds the interaction between eco-consciousness and educational background, which is also significant ( $\beta = 0.125$ , p < 0.001) and explains an additional 1.3% of variance ( $\Delta R^2$ = 0.013). These findings support H2, indicating that educational background significantly moderates the relationships between both environmental awareness and eco-consciousness with green banking adoption. The positive interaction coefficients suggest that the relationships between these variables and green banking adoption are stronger for individuals with higher educational levels.

Educational	Environmental	Mean Green Banking	Standard	Ν
Background	Awareness Level	Adoption Score	Deviation	
	Low	1.93	0.45	15
High School	Moderate	2.34	0.51	12
	High	2.67	0.56	9
Undergraduate	Low	2.28	0.48	37
	Moderate	3.05	0.52	82
	High	3.71	0.54	68
	Low	2.54	0.46	22
Postgraduate	Moderate	3.37	0.49	72
	High	4.18	0.42	82
Professional Degree	Low	2.87	0.51	6
	Moderate	3.69	0.47	19
	High	4.42	0.39	26

Table 7: Green Banking Adoption by Educational Background and EnvironmentalAwareness Level

ANOVA results: Educational Background: F = 42.18, p < 0.001; Environmental Awareness: F = 173.46, p < 0.001; Interaction: F = 4.92, p < 0.001

Interpretation: Table 7 examines green banking adoption across different combinations of educational background and environmental awareness levels. The results show a clear pattern of increasing green banking adoption with higher levels of both education and environmental awareness. For example, respondents with professional degrees and high environmental awareness had the highest mean adoption score (4.42), while those with high school education and low environmental awareness had the lowest (1.93). The ANOVA results confirm significant main effects for both educational background (F = 42.18, p < 0.001) and environmental awareness (F = 173.46, p < 0.001), as well as a significant interaction effect (F = 4.92, p < 0.001). This interaction effect indicates that the impact of environmental awareness on green banking adoption differs across educational levels, with a stronger effect observed at higher educational levels. These findings provide additional support for both hypotheses and illustrate the complex interplay between education, environmental awareness, and green banking behavior.

#### **Results and Findings**

The analysis of data collected from 450 bank customers in Mumbai reveals several significant findings regarding the relationship between environmental awareness and green banking adoption.

First, environmental awareness emerged as the strongest predictor of green banking adoption ( $\beta = 0.487$ , p < 0.001), followed by eco-consciousness ( $\beta = 0.312$ , p < 0.001) and educational background ( $\beta = 0.174$ , p < 0.001). This confirms Hypothesis 1, which proposed a significant positive relationship between environmental awareness and green banking adoption. The strong correlation (r = 0.73, p < 0.01) between these variables suggests that as individuals become more aware of environmental issues, they are substantially more likely to adopt green banking practices.

Second, the study found that educational background significantly moderates the relationship between environmental awareness and green banking adoption, as well as between eco-consciousness and green banking adoption. The positive interaction coefficients ( $\beta = 0.147$ , p < 0.001 for EA×EB;  $\beta = 0.125$ , p < 0.001 for EC×EB) indicate that the impact of environmental awareness and eco-consciousness on green banking adoption is stronger for individuals with

higher educational attainment. This confirms Hypothesis 2 and highlights the important role of education in translating environmental awareness into actual banking behavior.

Third, the analysis revealed notable differences in adoption rates across different green banking practices. Digital banking services (mobile banking, online bill payments, paperless banking) showed substantially higher adoption rates compared to specialized green financial products (green loans, sustainable investments, eco-friendly credit cards). This suggests that customers are more inclined to adopt practices that combine environmental benefits with personal convenience, while specialized green products face additional adoption barriers.

Fourth, the demographic analysis indicated that green banking adoption was highest among younger respondents (26-35 age group), those with higher education levels (postgraduate and professional degrees), and customers of private sector banks. These findings align with previous research suggesting that younger, more educated individuals tend to show greater environmental concern and openness to innovative banking practices.

Fifth, the two-way ANOVA examining the interaction between educational background and environmental awareness revealed that while both factors independently influence green banking adoption, their combined effect is particularly powerful. Respondents with both high educational attainment and high environmental awareness showed adoption rates that were more than double those of respondents with low levels of both factors.

Finally, the regression model explained 63.0% of the variance in green banking adoption, indicating that environmental awareness, eco-consciousness, and educational background together account for a substantial portion of the differences in green banking behavior among customers. However, this also suggests that additional factors beyond those examined in this study influence green banking adoption.

## Suggestions

Based on the findings of this study, the following suggestions are proposed for different stakeholders:

**1.** For Banking Institutions:

- Develop targeted environmental awareness campaigns that specifically link banking behaviors to environmental outcomes, particularly focusing on specialized green banking products where adoption lags.
- Design differentiated green banking communication strategies based on customers' educational backgrounds, with more detailed information for highly educated customers and simpler, more accessible messaging for those with lower educational attainment.
- Bundle environmental benefits with personal convenience features to increase the adoption of specialized green banking products.
- Provide incentives (financial or non-financial) for adopting green banking practices, particularly for customers with moderate levels of environmental awareness who may need additional motivation.
- Invest in staff training on environmental issues and green banking to ensure employees can effectively communicate these concepts to customers.
- **2.** For Policymakers:
  - Develop regulatory frameworks that incentivize banks to implement and promote green banking practices.
  - Integrate environmental education into school and university curricula to build environmental awareness from an early age.
  - Establish certification standards for green banking products to increase transparency and customer trust.
  - Create public awareness campaigns about the environmental impact of financial decisions.
  - Facilitate partnerships between financial institutions and environmental organizations to leverage their respective expertise.
- **3.** For Customers:
  - Seek information about the environmental impact of different banking choices.

- Request green banking options from your financial institutions if they are not already available.
- Consider the environmental impact alongside convenience and financial benefits when making banking decisions.
- Share positive experiences with green banking products and services with peers to increase awareness and adoption.
- **4.** For Environmental Organizations:
  - Collaborate with banks to develop and promote green banking initiatives.
  - Provide expertise and credibility to banks' environmental claims through partnerships and certifications.
  - Conduct independent assessments of banks' environmental performance to inform consumers.
  - Develop educational materials about the connection between financial decisions and environmental impact.

## Implications

## **Theoretical Implications**

This study contributes to the existing literature on green banking and environmental behavior in several ways:

- 1. It extends the application of the Theory of Change to green banking adoption, demonstrating how environmental awareness leads to changed banking behavior through a chain of intermediate outcomes.
- 2. The research confirms the significant role of environmental awareness in driving green banking adoption, supporting previous findings by Sidiqi and Ahmad (2024) and Linh and Anh (2020).

- **3.** The identification of educational background as a significant moderator in the relationship between environmental awareness and green banking adoption adds a new dimension to existing theoretical frameworks, suggesting that cognitive factors influence how environmental values translate into financial behaviors.
- **4.** The study provides empirical evidence for the differential adoption of various green banking practices, contributing to a more nuanced understanding of consumer behavior in sustainable finance.
- **5.** The findings bridge literature from environmental psychology, consumer behavior, and banking, offering an interdisciplinary perspective on green banking adoption.

## **Practical Implications**

The findings of this study have several practical implications:

- 1. For banks, the strong relationship between environmental awareness and green banking adoption suggests that investing in customer education about environmental issues could yield substantial returns in terms of green product adoption.
- 2. The moderating effect of education indicates that banks should segment their customers not just by demographics but by educational background when designing green banking marketing strategies.
- **3.** The higher adoption rates of digital banking compared to specialized green products suggests that banks should emphasize the dual benefits (environmental and convenience) of their offerings.
- **4.** For policymakers, the findings highlight the importance of general environmental education as an indirect but powerful driver of sustainable financial behaviors.
- **5.** The regional focus on Mumbai provides specific insights for financial institutions operating in urban Indian markets, where environmental awareness is rapidly evolving.

# Limitations

This study has several limitations that should be considered when interpreting its findings:

- 1. Geographical Limitation: The study was conducted exclusively in Mumbai, which may limit the generalizability of findings to other regions in India, particularly rural areas with different socioeconomic characteristics.
- 2. Self-Reporting Bias: The data collection relied on self-reported measures of environmental awareness and green banking adoption, which may be subject to social desirability bias, with respondents potentially overstating their environmental concern and green behaviors.
- **3.** Cross-Sectional Design: The cross-sectional nature of the study prevents establishing causal relationships definitively. A longitudinal study would provide stronger evidence for how changes in environmental awareness lead to changes in banking behavior over time.
- 4. Limited Focus: The study focused primarily on three independent variables (environmental awareness, eco-consciousness, and educational background), potentially overlooking other important factors that influence green banking adoption, such as bank marketing strategies, regulatory incentives, or peer influence.
- **5.** Sample Representativeness: Despite efforts to ensure representativeness through stratified sampling, the sample may not perfectly represent the entire banking population of Mumbai, particularly underbanked or unbanked segments.
- 6. Measurement Challenges: Measuring complex constructs like environmental awareness and eco-consciousness is inherently challenging, and the scales used, despite being validated, may not capture all aspects of these multidimensional concepts.
- **7.** Temporal Context: The study was conducted during a specific period (2024-2025) and reflects the environmental awareness and green banking landscape of that time, which may change as environmental issues evolve and green banking becomes more mainstream.

### **Scope of Future Research**

Based on the findings and limitations of this study, several directions for future research are suggested:

- 1. Longitudinal Studies: Future research could employ longitudinal designs to examine how changes in environmental awareness translate into changes in green banking adoption over time, providing stronger evidence for causal relationships.
- 2. Geographical Expansion: Extending similar studies to other regions in India, particularly comparing urban and rural areas or different states with varying environmental policies, would enhance the generalizability of findings.
- **3.** Additional Variables: Investigating other potential determinants of green banking adoption, such as institutional trust, peer influence, regulatory environment, and bank-specific factors, would provide a more comprehensive understanding of adoption drivers.
- **4.** Intervention Studies: Designing and evaluating specific interventions to increase environmental awareness and subsequently green banking adoption would provide valuable insights for practical applications.
- **5.** Comparative Analysis: Comparing the relationship between environmental awareness and green banking adoption across different countries or cultures could reveal how cultural and institutional contexts influence this relationship.
- **6.** Green Banking Implementation: Examining the perspective of banking professionals and institutions regarding challenges and opportunities in implementing green banking initiatives would complement the consumer-focused approach of this study.
- **7.** Technology Adoption: Investigating how technological readiness interacts with environmental awareness to influence digital green banking adoption could provide insights into the intersection of technology and sustainability in banking.
- 8. Impact Assessment: Evaluating the actual environmental impact of green banking practices would help determine whether increased adoption translates into meaningful environmental benefits.

**9.** Green Banking Metrics: Developing and validating more comprehensive metrics for measuring green banking adoption that go beyond self-reported behavior would strengthen future research in this area.

### Conclusion

This study investigated the impact of environmental awareness on the adoption of green banking practices among bank customers in Mumbai, Maharashtra, with particular attention to the roles of eco-consciousness and educational background. The findings confirm a strong positive relationship between environmental awareness and green banking adoption, supporting the central hypothesis that environmentally conscious individuals are more likely to engage with sustainable banking options.

The research revealed that environmental awareness is the strongest predictor of green banking adoption, followed by eco-consciousness and educational background. Moreover, educational background was found to significantly moderate these relationships, with the impact of environmental awareness and eco-consciousness on green banking adoption being stronger for individuals with higher educational attainment. This highlights the complex interplay between cognitive factors, environmental values, and financial behavior.

The analysis also uncovered interesting patterns in green banking adoption, with digital services being more widely adopted than specialized green financial products. This suggests that convenience remains an important consideration alongside environmental concerns in banking decisions. Additionally, demographic patterns indicated higher adoption rates among younger, more educated customers and those using private sector banks.

These findings have important implications for various stakeholders. For banks, they suggest the value of investing in environmental education and tailoring green banking strategies based on customers' educational backgrounds. For policymakers, they highlight the importance of environmental education as a driver of sustainable financial behaviors. For customers and environmental organizations, they emphasize the potential impact of informed financial choices on environmental sustainability.

Conference Proceedings International Conference on Sustainable Development Goals-Challenges, Issues & Practices by TMIMT- College of Management, Teerthanker Mahaveer University, Moradabad 25th & 26th April 2025. TMIMT International Journal (ISSN: 2348-988X) Despite its limitations, this study makes significant contributions to understanding the relationship between environmental awareness and green banking adoption in an important financial hub like Mumbai. As environmental concerns continue to gain prominence globally, insights from this research can help guide efforts to promote sustainable banking practices and, ultimately, contribute to broader environmental conservation goals.

The transition to green banking represents an important step toward integrating environmental sustainability into economic systems. By understanding the factors that drive this transition— particularly the crucial role of environmental awareness—stakeholders can more effectively promote and implement banking practices that benefit both people and the planet.

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