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GREEN BANKING AWARENESS AND ADOPTION OF CONSUMERS: A STUDY IN KERALA

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ABSTRACT

With the growing emphasis on environmental sustainability, green banking has emerged as a crucial initiative in promoting eco-friendly financial practices. This descriptive research study aims to examine the awareness and adoption of green banking practices among consumers in Kerala. A convenience sampling method was employed to collect data from a diverse range of consumers across the state. A structured questionnaire was designed to assess consumers' knowledge of green banking, their attitudes toward eco-friendly financial products and services, and their intention to adopt such practices. The study also explores factors influencing the adoption of green banking, including environmental consciousness, financial incentives, and the role of banking institutions in promoting sustainable banking practices. Statistical analysis, including univariate and multivariate techniques, was used to evaluate the data and gain insights into the relationship between consumer awareness and adoption behaviour. The findings reveal a growing awareness of green banking among consumers, with a positive correlation between awareness and the intention to adopt green banking practices. The study also highlights barriers to adoption, such as a lack of information and the perceived complexity of green banking services. The results contribute to a better understanding of the factors that drive or hinder the adoption of green banking in Kerala, providing valuable insights for policymakers and financial institutions to design effective strategies to promote sustainable banking practices among consumers.

KEYWORDS: Green Banking, Consumer Awareness, Adoption Behaviour, Sustainable Banking Practices, Environmental Consciousness.

1. INTRODUCTION

In recent decades, environmental sustainability has become a global priority, impacting every sector, including finance. The banking sector, seen primarily as a service provider and economic developer, is now embracing practices that support sustainable development goals. This change, known as green banking, focuses on environmentally responsible banking operations and services that reduce ecological footprints while encouraging eco-friendly practices among consumers. Green banking goes beyond traditional methods by incorporating environmental concerns into financial decisions, promoting paperless transactions, online banking, green loans, energy-efficient branches, and investments in sustainable projects.

India, as a developing economy, has seen an increased focus on green initiatives due to challenges like climate change, resource depletion, and pollution. The Reserve Bank of India (RBI) and other regulatory bodies have urged banks to implement sustainable practices. Within this context, Kerala stands out due to its high literacy rates, strong social awareness, and forward-thinking consumer base. These factors make Kerala an ideal place to study the awareness and adoption of green banking practices.

Despite having access to green products like e-statements, mobile banking, and online fund transfers, consumer awareness and actual use often remain low. Many customers still depend on traditional banking methods, often due to a lack of knowledge, reluctance to use technology, or perceived risks. Understanding how aware consumers are and what influences their adoption in Kerala is essential for boosting the reach and effectiveness of green banking initiatives.

This study aims to explore consumer awareness of green banking practices and assess how widely these practices are adopted in Kerala. It will highlight not only consumer attitudes and behaviors but also the role of banks in supporting environmental sustainability. The findings are expected to offer valuable insights for policymakers, bankers, and consumers to improve the adoption of green banking, thus contributing to a more sustainable future.

2. LITERATURE REVIEW

Green banking — generally understood as banking products, services and policies lowering the environmental impact of financial services and promoting sustainable investment — has

emerged as an increasingly active area of empirical and theoretical studies as banks and regulators face climate risks and sustainability objectives. Scholars have studied consumers' knowledge, attitudes, confidence and actual usage of green banking products like paperless banking, environmentally friendly loans, green deposits and web-based transaction platforms.

Theoretical frameworks often employed in the explanation of adoption behaviour are the Technology Acceptance Model (TAM), the Theory of Planned Behavior (TPB), and extensions like UTAUT. TAM focuses on perceived usefulness and perceived ease of use as proximal determinants of adoption; TPB emphasizes attitudinal beliefs, subjective norms and perceived behavioural control. Green banking studies typically supplement these frameworks with constructs like environmental concern and perceived financial incentives to explain normative and instrumental drivers of action.

Empirical evidence identifies a range of repeated drivers and barriers. Knowledge of green banking services and ideas is always cited as a condition for uptake: consumers with knowledge about product characteristics and green benefits are more inclined to experiment and utilize green services (see below-cited regional studies). Perceived convenience and ease of use (electronic friendliness) are also good predictors, particularly where paperless and internet-based platforms replace time-consuming offline processes. Economic incentives (lowered charges, cashback or special rates) are often concrete inducements which are able to turn positive attitudes into real actions. Banks' trust and the trust in "green" claims is the key factor because perceived risk or distrust of greenwashing can inhibit take-up.

Demographic factors have been used to moderate such relationships. Some regional analyses in India and elsewhere indicate that younger generations and those with more education or living in urban areas are more receptive to green banking. Differences are noted in some studies by gender, although direction and extent of difference differ across context. Literature thus indicates that demographic types influence awareness as well as the expression of attitude into behaviour.

But evidence is not entirely consistent. Some results indicate a strong positive association between pro-environmental attitude and adoption, whereas others suggest attitude is insufficient without tools like incentives, trust-building initiatives or usability enhancements. Trust has a complex association: it minimizes perceived risk but fails to directly predict behavioural adoption except if mediated through perceived usefulness or awareness. These

discrepancies typically stem from variations in methods between studies — measurement scales, operational definitions of "adoption" (intent vs. present behaviour), sample composition and analytical methods (e.g., simple correlations vs. structural models).

Regional Indian empirical research has contributed to this evidence base. Current research included in this manuscript (Choedon & C., 2025; Chandran et al., 2024; Sasidharan & Venkatakrishnan, 2024; Ellahi et al., 2021; David et al., 2023) indicate that awareness campaigns, ease of electronic channels and incentive targeting are effective drivers for enhanced adoption of green banking products in the Indian scenario. These studies all stress the value of complementing information interventions (for raising awareness) with usability design and economic incentives to get users from positive attitudes to actual use.

There is progress, yet there are gaps. First, most studies are based on convenience samples of students or urban internet users and therefore exclude generalizability. Second, measurement of "adoption" is highly variable; it is important to separate actual transaction activity from expressed willingness. Third, interaction effects (e.g., whether incentives are more effective for low-awareness groups) have been under-examined. Lastly, the literature could use more longitudinal and mixed-method designs to capture if initial adoption does indeed lead to sustained green behaviour.

3. Research Methodology

The study employed a descriptive research design using a structured survey to investigate the green banking adoption among consumers in Kerala. Convenience sampling was used, with primary data collected through an online questionnaire and secondary data gathered from journals and reports. The sample size included 114 respondents from Kerala, India, from students across the region. Data was collected via Google Forms, with sections focused on demographics and general survey on Green Banking among the target population. The second part focused on the questions with 5-point LIKERT Scale options from Strongly Disagree to Strongly Agree and these questions were specifically measuring consumer attitude, trust, awareness and adoption of Green Banking. The reliability of the scale used to measure green purchase intention and behaviour was assessed using Cronbach's Alpha. The result yielded a Cronbach's Alpha value of 0.912, indicating excellent internal consistency for the 15 items included in the scale. Descriptive statistics, inferential statistics like Chi-square tests and multivariate analysis of Correlation and Regression.

4. RESULTS AND DISCUSSION

4.1 Demographic characteristics and general survey on Green Banking among consumers

Table 1: Demographic Characteristics

Demographic Characteristics	Percentage
Age Group (Years)	
Below 20	25
21-30	40
21-40	15
Above 40	20
Gender	
Male	28.1
Female	71.9
Place of Residence	
Rural	10.5
Semi Urban	7.9
Urban	81.6
Note: Sample size=114	

The demographic characteristics of the sample were examined (N = 114). The majority of respondents were aged between 21 and 30 years, representing 40% of the sample, followed by 25% of respondents being below 20 years. A smaller portion, 20%, was above 40 years, and 15% fell within the 21-40 years category. Regarding gender, a significant majority of the respondents were female (71.9%), with males comprising 28.1% of the sample. In terms of place of residence, most respondents lived in urban areas (81.6%), while 10.5% resided in rural areas and 7.9% in semi-urban areas. These findings suggest a predominance of younger, urban, and female respondents in the sample.

A.Belief in Green Banking Contribution to Environmental Sustainability:

The majority of respondents (43.9%) agreed that green banking can contribute to environmental sustainability, with 29.8% strongly agreeing. However, 26.3% remained neutral on the issue. These results suggest a general consensus among respondents that green banking is perceived as beneficial for sustainability.

Table 2: Belief in Green Banking Contribution to Environmental Sustainability

Response	Percent (%)
Neutral	26.3
Agree	43.9
Strongly Agree	29.8

B. Awareness of Green Banking

More than half of the respondents (55.3%) had not heard of green banking, while 44.7% were familiar with the concept. This indicates a significant gap in awareness, with a larger portion of the sample lacking knowledge about green banking.

Table 3: Awareness of Green Banking

Response	Percent (%)
No	55.3
Yes	44.7

C. Current Use of Green Banking Services

A majority (64.0%) of respondents currently use green banking services, such as paperless banking and online banking, while 36.0% do not. This suggests that while adoption of green banking services is high, there is still room for further penetration.

Table 4: Current Use of Green Banking Services

Response	Percent (%)
No	36.0
Yes	64.0

D. Familiarity with Green Banking Services

Approximately 46.5% of respondents were not familiar at all with green banking services, while 43.0% were somewhat familiar. Only 10.5% reported being very familiar with green

banking services. These findings suggest that while there is some familiarity with these services, awareness is still limited.

Table 5: Familiarity with Green Banking Services

Response	Percent (%)
Not familiar at all	46.5
Somewhat familiar	43.0
Very familiar	10.5

E. Importance of Environmental Sustainability in Banking Services

Half of the respondents (50.9%) considered environmental sustainability somewhat important when choosing banking services, with 40.4% viewing it as very important. Only 8.8% did not consider it important. This indicates that sustainability plays a significant role in consumers' banking decisions.

Table 6: Importance of Environmental Sustainability in Banking Services

Response	Percent (%)
Not important	8.8
Somewhat important	50.9
Very important	40.4

F. Factors Influencing Adoption of Green Banking Practices

The most significant factor influencing the adoption of green banking was ease of use and convenience, with 55.3% of respondents citing it as a key reason. Financial incentives (21.9%) and trust in the bank (11.4%) also played important roles, while environmental consciousness (2.6%) and lack of information (8.8%) were less influential.

Table 7: Factors Influencing Adoption of Green Banking Practices

Response	Percent (%)
Ease of use/Convenience	55.3
Environmental consciousness	2.6
Financial incentives	21.9

Response	Percent (%)
Lack of information	8.8
Trust in the bank	11.4

G. Willingness to Adopt More Green Banking Practices with Incentives

A strong majority (91.2%) of respondents indicated that they would be willing to adopt more green banking practices if offered incentives such as reduced service charges, while 8.8% were not willing to do so.

Table 8: Willingness to Adopt More Green Banking Practices with Incentives

Response	Percent (%)
No	8.8
Yes	91.2

H. Frequency of Engagement in Paperless Banking

The frequency of paperless banking usage varied among respondents. The largest group (41.2%) engaged in paperless banking occasionally, followed by 32.5% who always used paperless banking. Smaller percentages reported using it frequently (23.7%) or never (2.6%).

Table 9: Frequency of Engagement in Paperless Banking

Response	Percent (%)
Always	32.5
Frequently	23.7
Never	2.6
Occasionally	41.2

4.2 Chi- Square Test

Hypotheses

- **Null Hypothesis (H_0)**: There is no significant relationship between demographic variables (age, gender) and consumer attitudes/awareness toward green banking.
- **Alternative Hypothesis (H_1)**: There is a significant relationship between demographic variables (age, gender) and consumer attitudes/awareness toward green banking.

Table 10: Age vs Consumer Attitude towards Green Banking

Age	. Consumer Attitude Toward Green Banking			Total
	Low(5 to 9)	Medium(10 to 16)	High(Above 16)	
Above 40	3	3	5	29
31-40	3	3	5	45
21-30	5	7	15	17
Below 20	2	8	56	23
Total	13	21	68	114

In general, younger age groups (below 20 and 21-30) have a stronger positive attitude toward green banking, while older age groups (31-40 and above 40) display more varied attitudes. This suggests that age influences consumer attitudes toward green banking, with younger individuals being more supportive.

Table 11: Gender Vs Consumer Awareness of Green Banking.

Gender	. Consumer Awareness of Green Banking			Total
	Low (7 to 13)	Medium (14 to 20)	High (Above 20)	
Female	29	23	30	82
Male	12	14	6	32
Total	41	37	36	114

These findings suggest that females generally exhibit higher awareness and engagement with green banking compared to males. This indicates that gender plays a role in the level of awareness toward green banking, with females being more likely to be aware of green banking initiatives.

Table 12: Chi-Square Summary.

Demographic Variable	Factor	Chi-Square Value	df	p	Significant or Not significant
Gender	Consumer Awareness of Green Banking	47.85	2	0	Significant
Age	Consumer Attitude Toward Green Banking	23.1	6	0.01	Significant

For Age vs. Consumer Attitude Toward Green Banking: The test resulted in a Chi-square value of 23.1 with df = 6 and a p-value of 0.01. This is statistically significant, indicating that age has a significant effect on consumer attitudes toward green banking. Similar result was published in some research where demographics like age had impact on Green Banking adoption (David et al, 2023).

For Gender vs. Consumer Awareness of Green Banking: The test resulted in a Chi-square value of 47.85 with df = 2 and a p-value of 0, which is also statistically significant, indicating that gender significantly influences consumer awareness of green banking. Related results were also sighted in previous literature (Ellahi et al, 2021).

4.3 Correlation Analysis of *Consumer Awareness, Attitude, Trust, and Adoption of Green Banking*

Table 13: Correlations: Consumer Awareness, Attitude, Trust, and Adoption of Green Banking.

Variables	**n**	**M**	**SD**	**1**	**2**	**3**	**4**
1. Consumer Awareness of Green Banking	114	16.63	5.39	1	.584**	.390**	-0.02
2.Consumer Attitude Toward Green Banking	114	18.56	5.16	.584**	1	.610**	-.356**
3.Trust in Green Banking Initiatives	114	12.81	2.88	.390**	.610**	1	-.198*
4. Adoption of Green	114	6.08	1.35	-0.02	-.356**	-.198*	1

Note : M and SD stands for mean and Standard deviation. Sample size =114. ** indicate p<.05. 1= Consumer Awareness of Green Banking,2= Consumer Attitude Toward Green Banking,3=Trust in Green Banking Initiatives,4= Adoption of Green Banking by Consumers.

A Pearson correlation analysis was conducted to examine the relationships between consumer awareness, attitude, trust, and adoption of green banking (Table 13). The Adoption of Green Banking variable combines multiple factors to give a comprehensive picture of consumer behaviour regarding environmentally sustainable banking practices. By considering current usage, willingness to adopt further practices, and engagement frequency, this variable helps in understanding the factors that drive or hinder the adoption of green banking. The inclusion of financial incentives as a potential motivator suggests that consumers may be more inclined to adopt these practices when provided with tangible economic benefits. Results indicated

significant positive correlations between consumer awareness and consumer attitude (r = .584, p<.05), as well as between consumer awareness and trust in green banking (r = .390, p<.05). A strong positive correlation was also found between consumer attitude and trust in green banking (r = .610, p<.05). However, a negative correlation was observed between consumer attitude and adoption of green banking (r = -.356, p<.05), indicating that as consumers' attitudes toward green banking became more favourable, their likelihood of adopting green banking practices decreased. A weaker negative correlation was found between trust in green banking initiatives and adoption of green banking (r = -.198, p<.05), suggesting that higher trust in green banking did not strongly predict the adoption of such services. Previous studies say that trust plays a crucial role in reducing perceived risks and enhancing customer willingness to adopt green banking services. Additionally, environmental consciousness significantly influences customer attitudes and behaviours towards sustainable banking practices (Sasidharan & Venkatakrishnan, 2024).

4.4 Regression: *Predictors of Adoption of Green Banking by Consumers*

A multiple regression analysis was conducted to examine the predictors of adoption of green banking by consumers. The dependent variable was the adoption of green banking, and the independent variables included consumer awareness, attitude toward green banking, and trust in green banking initiatives. The model was statistically significant, F(3,110) = 88.08, p<.05, and accounted for 18.2% of the variance in the adoption of green banking (R^2 = .182).

Table 14: Regression analysis summary for Adoption of Green Banking by consumers

Variable	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	***p***
	B	**SE**	**Beta (ß)**		
Constant	7.384	0.561		13.167	0
Trust in Green Banking Initiatives	0.007	0.051	0.015	0.14	0.889
Consumer Attitude Toward Green Banking	-0.139	0.032	-0.532	-4.297	0.000
Consumer Awareness of Green Banking	0.071	0.027	0.284	2.67	0.009

Note: Constant = -7.384, F(3,110)= 88.08, *p*<.05, R^2= .182, Dependent=Adoption of Green Banking by consumers.

The analysis revealed that consumer attitude toward green banking was a significant negative predictor of adoption (β = -0.532, p = 0.000), indicating that a more negative attitude toward green banking was associated with lower adoption. In contrast, consumer awareness of green banking was a significant positive predictor (β = 0.284, p = 0.009), suggesting that higher consumer awareness of green banking practices is associated with greater adoption. Trust in green banking initiatives, however, was not a significant predictor (β = 0.015, p = 0.889). Previous studies had sighted that consumer awareness and adoption of Green Banking are related as mentioned in this research (Choedon & C, 2025). Some studies also hinted that as customers become more informed about green banking practices, their likelihood of adopting such services increases (Chandran et al., 2024).

CONCLUSION

The study highlights several key findings regarding consumer attitudes and behaviours toward green banking. Age and gender significantly influenced consumer attitudes and awareness, with younger individuals showing more favourable attitudes and females demonstrating higher awareness of green banking services. Consumer awareness emerged as a positive predictor of green banking adoption, while negative attitudes toward green banking were associated with lower adoption rates. Interestingly, trust in green banking did not significantly impact adoption, suggesting that other factors, such as convenience and financial incentives, play a more critical role in driving the adoption of green banking practices.

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