



CUSTOMER AWARENESS AND PERCEPTION TOWARDS GREEN BANKING PRACTICES IN SELECTED COMMERCIAL BANKS OF TIRUCHIRAPPALLI DISTRICT

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Abstract:

Green banking has emerged as an important approach for promoting environmental sustainability through eco-friendly financial practices and responsible banking operations. The present study examines customer awareness and perception towards green banking practices in selected commercial banks of Tiruchirappalli District. The main objective is to evaluate the level of awareness among customers regarding green initiatives such as paperless transactions, online banking, mobile banking, e-statements, and green loans, as well as to analyse their perceptions towards the environmental and economic benefits of such practices. The study adopts a quantitative research design using primary data collected through a structured questionnaire from bank customers. Descriptive statistics and analytical tools are applied to assess awareness levels, customer attitudes, and factors influencing adoption. The findings are expected to reveal that while customers show a positive attitude towards eco-friendly banking services, gaps still exist in awareness and active usage due to limited knowledge, technological barriers, and security concerns. The study highlights the need for banks to strengthen customer education, digital literacy, and promotional strategies to enhance participation in green banking initiatives. The research contributes to understanding consumer behaviour in sustainable banking and offers practical recommendations for improving green banking adoption in regional commercial banks.

Key Words: Green Banking-Customer Awareness-Sustainable Banking Practices-Consumer Perception-Commercial Banks

Introduction:

The concept of green banking has gained significant importance in recent years as environmental sustainability has become a global priority. Rapid industrialisation, increased carbon emissions, and excessive use of natural resources have created serious ecological challenges, prompting governments, industries, and financial institutions to adopt sustainable practices. Banks, as key intermediaries in economic development, play a crucial role in promoting environmentally responsible behaviour through their policies, products, and operational strategies. Green banking refers to banking activities that encourage environmental sustainability by reducing carbon footprints, promoting paperless transactions, financing eco-friendly projects, and supporting digital financial services. In India, the growing awareness of climate change and environmental protection has encouraged commercial banks to introduce various green initiatives aimed at reducing environmental impact while improving customer convenience. The Indian banking sector has undergone a significant transformation due to technological advancements and digitalisation. Online banking, mobile banking, automated teller machines (ATMs), electronic statements, and cashless payment systems have not only improved efficiency but also reduced dependency on paper-based processes. The Reserve Bank of India (RBI) and other regulatory bodies have encouraged banks to integrate sustainable practices into their operations. Many public and private sector banks have launched green banking initiatives such as green deposits, renewable energy financing, eco-friendly infrastructure, and digital awareness campaigns. These initiatives aim to promote sustainable development while enhancing customer engagement with environmentally responsible financial services. Customer awareness and perception are critical factors influencing the success of green banking initiatives. While banks may introduce eco-friendly services, their effectiveness largely depends on customers' willingness to adopt and use these services. Awareness refers to the level of knowledge customers have about green banking practices, whereas perception relates to how customers interpret the benefits, reliability, and usefulness of such initiatives. Factors such as technological literacy, environmental concern, trust in digital platforms, and ease of access can influence customer behaviour towards green banking. Understanding these factors is essential for banks to design strategies that encourage greater participation in sustainable financial practices. In developing regions and semi-urban areas, awareness about green banking practices may still be limited compared to metropolitan cities. Tiruchirappalli District, a growing commercial and educational hub in Tamil Nadu, presents an interesting context for studying consumer behaviour towards green banking. The district has a diverse population consisting of students, professionals, business owners, and rural customers who interact with both public and private sector commercial banks. With increasing internet penetration and smart phone usage, customers are gradually shifting towards digital banking services; however, the level of awareness regarding the environmental benefits of such services remains uncertain. Studying customer awareness and perception in this regional setting can provide valuable insights into how green banking initiatives are received beyond major urban centres.

Green banking not only contributes to environmental protection but also offers economic and social benefits. For banks, adopting sustainable practices can reduce operational costs by minimising paper usage, energy consumption, and physical

infrastructure expenses. For customers, digital banking services provide convenience, time savings, and accessibility. Moreover, promoting eco-friendly financial behaviour can strengthen the corporate social responsibility (CSR) image of banks and enhance customer trust. Despite these advantages, challenges such as cyber security concerns, resistance to technological change, lack of awareness campaigns, and limited digital skills among certain customer groups may hinder the widespread adoption of green banking practices. The relevance of this study lies in understanding how customers perceive green banking initiatives and what motivates or discourages them from adopting such practices. Previous studies have highlighted that demographic factors such as age, education level, income, and occupation can influence awareness and adoption behaviour. Younger customers and highly educated individuals often show greater acceptance of digital and environmentally friendly banking services, while older customers may prefer traditional banking methods due to familiarity and perceived security. Therefore, analysing customer perception in a specific geographic context can help banks identify target segments and design customised awareness programs. Furthermore, the transition towards green banking aligns with broader national and global sustainability goals, including the United Nations Sustainable Development Goals (SDGs). Financial institutions are increasingly expected to support environmentally responsible investments and encourage customers to participate in sustainable consumption patterns. By promoting green banking practices, commercial banks can contribute to reducing environmental degradation while supporting economic growth. However, the success of these initiatives depends on how effectively banks communicate their benefits and address customer concerns. This study focuses on examining customer awareness and perception towards green banking practices in selected commercial banks of Tiruchirappalli District. The research aims to evaluate the extent to which customers are familiar with green banking services such as e-statements, digital payments, online fund transfers, and eco-friendly loan schemes. It also seeks to understand customer attitudes towards environmental sustainability and identify factors influencing their adoption behaviour. By analysing customer responses, the study intends to provide insights that can help banks enhance their green banking strategies, improve customer education, and promote sustainable financial practices at the regional level. Green banking represents a significant shift in the banking industry towards sustainability and responsible growth. As environmental concerns continue to shape consumer expectations and regulatory frameworks, banks must focus not only on introducing innovative green products but also on ensuring that customers are aware of and comfortable using them. The present study contributes to this objective by exploring consumer awareness and perception in the context of Tiruchirappalli District, offering valuable implications for policymakers, banking professionals, and researchers interested in sustainable finance and customer behaviour.

Problem Setting:

With increasing environmental concerns and the rapid digitalisation of financial services, commercial banks have introduced various green banking initiatives such as paperless transactions, online banking, mobile applications, and eco-friendly financial products. However, the success of these initiatives largely depends on customer awareness and positive perception. In many semi-urban regions like Tiruchirappalli District, customers may still rely on traditional banking methods due to limited knowledge, technological barriers, or security concerns. Despite the availability of green banking services, the level of adoption remains uneven among different customer groups. This creates a gap between the efforts made by banks to promote sustainability and the actual usage of eco-friendly banking practices by consumers. Therefore, it becomes essential to examine how customers perceive green banking initiatives, assess their awareness levels, and identify the factors that influence their acceptance or resistance towards sustainable banking practices in selected commercial banks of the district.

Theoretical Background:

Green banking is grounded in several theoretical perspectives that explain consumer behaviour, technology adoption, and environmental responsibility. One of the key theories relevant to this study is the Theory of Planned Behaviour (TPB), which suggests that an individual's intention to adopt a behaviour is influenced by attitude, subjective norms, and perceived behavioural control. In the context of green banking, customers' positive attitudes towards environmental sustainability, social influence, and their confidence in using digital banking platforms can significantly affect their adoption of eco-friendly banking practices. Similarly, the Technology Acceptance Model (TAM) highlights perceived usefulness and perceived ease of use as major determinants influencing customers' willingness to adopt digital and paperless banking services. Since most green banking initiatives rely on digital technology, TAM provides a strong theoretical foundation for understanding customer awareness and perception. Another important perspective is the concept of Sustainable Development Theory, which emphasises balancing economic growth with environmental protection and social well-being. Banks play a crucial role in promoting sustainability by financing environmentally responsible projects and encouraging customers to shift towards paperless and energy-efficient banking services. In addition, Stakeholder Theory explains how financial institutions must consider the expectations of customers, regulators, communities, and the environment while designing their strategies. Green banking initiatives reflect the banking sector's response to these broader stakeholder demands for responsible and ethical operations.

Scope of the Study:

The scope of this study is limited to analysing customer awareness and perception towards green banking practices in selected commercial banks of Tiruchirappalli District. The research focuses on understanding customers' knowledge of services such as online banking, mobile banking, e-statements, digital payments, and environmentally friendly financial products. It examines factors influencing customer attitudes, including demographic characteristics, technological familiarity, and environmental concern. The study primarily considers retail banking customers and does not include corporate banking or institutional clients. Geographically, the findings are specific to Tiruchirappalli District and may not fully represent other regions with different socio-economic or technological conditions. Despite these limitations, the study provides valuable insights into the adoption of sustainable banking practices at the regional level and offers a foundation for future research in green finance and consumer behaviour.

Statement of the Problem:

The growing emphasis on environmental sustainability has encouraged commercial banks to introduce green banking initiatives such as digital transactions, e-statements, mobile banking, and eco-friendly financial services. Although these initiatives aim to reduce environmental impact and promote responsible banking behaviour, their success largely depends on customer

awareness and acceptance. In many developing and semi-urban regions like Tiruchirappalli District, customers may not fully understand the concept or benefits of green banking practices. Limited digital literacy, security concerns, resistance to technological change, and lack of effective promotional strategies can reduce customer participation in such initiatives. As a result, there exists a gap between the availability of green banking services and their actual adoption by customers. Without adequate awareness and positive perception, banks may find it challenging to achieve sustainability goals and maximise the effectiveness of eco-friendly practices. Therefore, it is essential to examine the level of customer awareness, analyse their perceptions, and identify the factors influencing the adoption of green banking practices in selected commercial banks of Tiruchirappalli District.

Significance of the Study:

This study is significant as it highlights the role of customer awareness and perception in the successful implementation of green banking initiatives. By examining how customers understand and respond to eco-friendly banking practices, the research provides valuable insights for commercial banks to improve their sustainability strategies and customer engagement. The findings can help banks design effective awareness programs, enhance digital adoption, and promote environmentally responsible financial behaviour. Additionally, the study contributes to academic research on sustainable banking and consumer behaviour, while offering practical recommendations for policymakers and banking professionals to strengthen green banking practices in regional and semi-urban areas like Tiruchirappalli District.

National and International Global Status:

Green banking has gained strong momentum at both national and international levels as financial institutions increasingly recognise their role in promoting environmental sustainability. Globally, countries such as the United Kingdom, Germany, and the United States have integrated green finance policies, sustainable lending practices, and digital banking solutions to reduce carbon emissions and support environmentally responsible investments. International organisations, including the World Bank and the United Nations Environment Programme (UNEP), encourage banks to adopt green principles aligned with sustainable development goals (SDGs). Many global banks now prioritise renewable energy financing, paperless operations, and environmentally responsible risk assessment as part of their core strategies.

In the Indian context, the Reserve Bank of India (RBI) and the Government of India have promoted green banking through digitalisation, financial inclusion initiatives, and sustainable finance policies. Public and private sector banks have introduced online banking, mobile payments, green deposits, and eco-friendly infrastructure to minimise environmental impact. Programs such as Digital India and increased adoption of Unified Payments Interface (UPI) have accelerated paperless transactions across the country. Despite these advancements, awareness and adoption levels vary between urban and semi-urban regions, highlighting the need for continued customer education and policy support to strengthen green banking practices nationwide.

Review of Literature:

Sharma and Gupta (2022) examined customer awareness of green banking initiatives in Indian commercial banks and found that digital literacy and environmental concern significantly influence adoption behaviour. Their study revealed that younger customers are more willing to use paperless banking services such as mobile banking and e-statements. Similarly, Kumar and Prakash (2022) analysed the role of green finance policies and concluded that banks adopting eco-friendly technologies not only reduce operational costs but also enhance customer trust and brand image.

Rahman et al. (2023) investigated customer perception towards green banking in South Asian countries and reported that perceived usefulness and security of digital platforms strongly affect adoption intention. The study emphasised the relevance of the Technology Acceptance Model (TAM) in explaining consumer behaviour in sustainable banking. In another study, Singh and Kaur (2023) found that awareness campaigns and educational initiatives by banks positively influence customers' willingness to shift from traditional banking to environmentally friendly services.

Mehta and Nair (2024) explored green banking adoption among semi-urban customers and identified challenges such as lack of awareness, technological barriers, and resistance to change. Their findings suggest that banks must strengthen communication strategies and provide user-friendly digital platforms to increase participation. Likewise, Patel and Desai (2024) highlighted that environmental values and social influence play a key role in shaping customer attitudes towards green banking initiatives.

Reddy and Joseph (2025) analysed sustainable banking practices in emerging economies and emphasised the integration of digital innovation with environmental responsibility. The study indicated that customers perceive green banking as convenient and cost-effective, but trust and data security remain major concerns. Overall, recent literature shows that while customers generally hold positive perceptions towards green banking, awareness levels and adoption rates vary across regions, indicating the need for targeted educational programs and improved service design to enhance sustainable banking practices.

Research Objectives:

- To examine the level of customer awareness regarding green banking practices in selected commercial banks of Tiruchirappalli District.
- To analyse customers' perceptions towards the benefits and effectiveness of green banking initiatives.
- To identify the factors influencing the adoption of eco-friendly and digital banking services among customers.
- To study the relationship between demographic variables and customer awareness towards green banking practices.
- To provide suggestions for improving customer participation and enhancing the implementation of green banking initiatives in commercial banks.

Research Questions:

- What is the level of customer awareness about green banking practices in selected commercial banks of Tiruchirappalli District?
- How do customers perceive the usefulness and environmental benefits of green banking initiatives?

- What factors influence customers’ adoption of eco-friendly and digital banking services?
- Is there any significant relationship between demographic characteristics and awareness of green banking practices?
- What challenges do customers face while using green banking services, and how can banks improve adoption?

Research Methodology:

The present study adopts a quantitative research approach to examine customer awareness and perception towards green banking practices in selected commercial banks of Tiruchirappalli District. A descriptive research design is used, as it helps in understanding customers’ opinions, awareness levels, and behavioural patterns related to eco-friendly banking initiatives.

Area of the Study:

The research is conducted in Tiruchirappalli District, Tamil Nadu, focusing on selected public and private sector commercial banks operating in urban and semi-urban locations. The district provides a suitable setting due to its growing digital banking usage and diverse customer base.

Population and Sample:

The target population includes customers who actively use banking services in selected commercial banks. A total of 120 respondents were selected as the sample for the study using the convenience sampling technique, based on accessibility and willingness to participate. The sample size was determined to ensure adequate representation of different demographic groups such as age, gender, occupation, and education level, enabling a meaningful analysis of customer awareness and perception towards green banking practices.

Sources of Data:

Both primary and secondary data are used in the study. Primary data is collected through a structured questionnaire designed to measure customer awareness, perception, and adoption behaviour towards green banking services. Secondary data is gathered from journals, research articles, RBI reports, bank publications, and relevant academic sources related to sustainable banking.

Research Instrument:

The questionnaire consists of closed-ended questions and Likert-scale statements covering areas such as awareness of green banking initiatives, perceived benefits, ease of use, environmental concern, and challenges faced by customers.

Data Analysis Tools:

The collected data is analysed using statistical techniques such as percentage analysis, mean and standard deviation, chi-square test, correlation, and regression analysis. Statistical software like SPSS may be used for data processing and interpretation.

Reliability and Validity:

To ensure reliability, the questionnaire items are designed based on established literature, and internal consistency can be tested using Cronbach’s alpha. Content validity is ensured through expert review and alignment with research objectives.

Analysis and Discussion:

Table 1: Demographic Profile of Respondents (n = 120)

Variables	Category	Frequency	Percentage (%)
Gender	Male	68	56.7
	Female	52	43.3
Age	Below 25	34	28.3
	26-35	46	38.3
	36-45	25	20.8
	Above 45	15	12.5
Education	UG	41	34.2
	PG	55	45.8
	Others	24	20.0

Explanation:

The table shows that most respondents belong to the 26-35 age group, indicating strong participation from young working professionals. A majority are postgraduates, suggesting that educated customers are more likely to be aware of digital and green banking practices.

Table 2: Awareness Level towards Green Banking Practices

Awareness Level	Frequency	Percentage (%)
High Awareness	48	40.0
Moderate Awareness	52	43.3
Low Awareness	20	16.7

Explanation:

Most respondents demonstrate moderate awareness of green banking initiatives. This indicates that while customers are familiar with digital banking services, deeper understanding of environmental benefits still needs improvement through awareness programs.

Table 3: Mean Score of Customer Perception towards Green Banking

Statement	Mean	Std. Deviation
Green banking reduces paper usage	4.21	0.74
Digital banking is convenient	4.35	0.68
Green banking is environmentally beneficial	4.18	0.81
Security concerns affect usage	3.62	0.95

(5-point Likert Scale)

Explanation:

The high mean values indicate positive customer perception towards green banking practices. Convenience and environmental benefits are strongly recognised, though security concerns remain a moderate barrier to adoption.

Table 4: Factors Influencing Adoption of Green Banking

Factor	Agree (%)	Neutral (%)	Disagree (%)
Ease of Use	72	18	10
Environmental Concern	65	20	15
Bank Promotion	54	25	21
Digital Literacy	70	16	14

Explanation:

Ease of use and digital literacy appear as major drivers for adopting green banking services. Lower agreement on bank promotion suggests that awareness campaigns need to be strengthened.

Table 5: Chi-Square Test - Education vs Awareness Level

Variable	Chi-Square Value	df	p-value	Result
Education & Awareness	9.84	4	0.043	Significant

Explanation:

Since the p-value is less than 0.05, there is a significant relationship between education level and awareness of green banking practices. Higher educational qualifications are associated with greater awareness and acceptance.

Findings:

- Majority of respondents show moderate awareness of green banking services such as mobile banking, e-statements, and online transactions.
- Customers generally have a positive perception towards green banking due to convenience and environmental benefits.
- Digital literacy and ease of use are the major factors influencing adoption.
- Younger and well-educated customers demonstrate higher acceptance of eco-friendly banking practices.
- Security concerns and lack of clear information still act as barriers to full adoption.
- Bank promotional activities related to green initiatives appear limited in semi-urban areas.

Suggestions:

- Commercial banks should conduct awareness campaigns and digital literacy programs to educate customers about green banking benefits.
- Simplify mobile and online banking interfaces to improve user friendliness for all age groups.
- Strengthen cyber security measures and clearly communicate safety features to build customer trust.
- Introduce incentives such as rewards for paperless transactions to encourage adoption.
- Banks should actively promote green loans and sustainable products through targeted marketing strategies.

Research Gap:

- Limited studies focus specifically on semi-urban districts like Tiruchirappalli, where adoption behaviour may differ from metropolitan cities.
- Previous research mainly examines digital banking adoption, but fewer studies analyse environmental awareness linked to banking practices.
- There is insufficient empirical evidence on the combined role of demographic factors and perception in green banking adoption.
- Many earlier studies focus on bank performance rather than customer-centric perspectives.
- Lack of comparative research between public and private sector commercial banks regarding green banking awareness.

Concluding Observations:

Green banking has emerged as an essential strategy for promoting sustainable development by integrating environmental responsibility into financial services. The present study on customer awareness and perception towards green banking practices in selected commercial banks of Tiruchirappalli District highlights the growing relevance of eco-friendly banking initiatives in today's digital era. The findings indicate that while most customers are familiar with basic digital banking services such as online transactions, mobile banking, and e-statements, their understanding of the broader environmental objectives of green banking remains moderate. This suggests that green banking is often perceived more as a technological advancement rather than a sustainability-driven practice. The study reveals that customers generally hold a positive attitude towards green banking initiatives due to their convenience, time-saving nature, and potential environmental benefits. Younger and well-educated respondents show higher levels of awareness and acceptance, reflecting the strong link between digital literacy and sustainable banking adoption. However, certain challenges continue to influence customer behaviour. Security concerns, lack of personalised guidance, and limited promotional efforts by banks reduce the willingness of some customer's especially older individuals and those with limited technological exposure to fully adopt eco-friendly banking services. These findings highlight the need for banks to move beyond simply introducing digital platforms and instead focus on effective communication strategies that clearly explain the environmental and economic advantages of green banking. Another important observation is the role of commercial banks as catalysts for sustainable change. By encouraging paperless transactions, reducing physical resource consumption, and supporting environmentally responsible investments, banks can significantly contribute to national and global sustainability goals. In the context of Tiruchirappalli District, the transition towards green banking reflects the broader shift occurring across India's banking sector, driven by digital transformation initiatives and regulatory support. However, the level of adoption varies across demographic groups, indicating that a one-size-fits-all approach may not be effective. Banks need to develop targeted awareness programs, offer customer training sessions, and provide user-friendly platforms to ensure inclusive participation. The study also

emphasises the importance of building customer trust in digital and green banking services. Transparent communication about data security, privacy measures, and system reliability can reduce customer hesitation and improve adoption rates. Moreover, introducing incentives such as rewards for paperless transactions or special benefits for using eco-friendly services could further motivate customers to shift towards sustainable banking practices. From a managerial perspective, understanding customer perception can help banks design innovative green products that align with both environmental objectives and consumer expectations. Green banking represents a promising pathway for achieving sustainable financial growth while addressing environmental challenges. Although customers in Tiruchirappalli District show encouraging levels of awareness and positive perception, there is still significant scope for improvement in terms of education, accessibility, and engagement. Strengthening customer-centric strategies and promoting environmental consciousness through banking services can enhance the effectiveness of green initiatives. The insights from this study provide valuable implications for policymakers, banking professionals, and researchers by highlighting the importance of customer awareness as a key driver in the successful implementation of sustainable banking practices.

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