



**GREEN BANKING AWARENESS AND CUSTOMER ADOPTION PATTERNS : INSIGHTS FROM
RAJASTHAN'S BANKING SECTOR**

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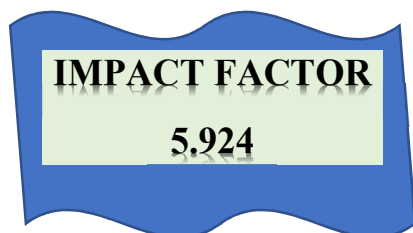
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ABSTRACT

The increasing environmental concerns and the global push toward sustainable development have prompted the banking industry to adopt eco-friendly practices under the umbrella of "green banking." This research paper investigates the level of awareness and adoption patterns of green banking initiatives among customers in the banking sector of Rajasthan. The study explores the extent to which customers are informed about green banking products and services, such as paperless transactions, online banking, green loans, and energy-efficient branches, and examines their willingness and behavioral trends in adopting these services.

A mixed-method approach has been employed, combining quantitative surveys from a sample of 500 customers across public and private sector banks in key cities of Rajasthan, including Jaipur, Udaipur, Jodhpur, and Kota, along with qualitative interviews of bank officials. The findings reveal a moderate level of awareness among customers, with higher awareness in urban areas and among younger, tech-savvy users. However, the actual adoption rate of green banking practices remains relatively low due to factors such as lack of information, perceived complexity, and limited promotional efforts by banks.

The study highlights the gap between awareness and adoption and identifies key drivers and barriers influencing customer behavior. It also provides recommendations for banks to design targeted awareness campaigns, invest in user-friendly digital platforms, and integrate environmental education into customer engagement strategies. The insights from this research contribute to policy formulation and the development of more sustainable and inclusive green banking frameworks in Rajasthan and beyond.



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Key words: Green Banking, Customer Awareness, Sustainable Finance, Banking Sector, Environmental Sustainability, Digital Banking, Customer Adoption Patterns, Public and Private Sector Banks, Rajasthan, Eco-Friendly Banking Practices.

INTRODUCTION

In recent years, the global financial sector has witnessed a significant transformation with the emergence of environmentally responsible banking practices, commonly referred to as green banking. As environmental degradation and climate change have become pressing global issues, the role of financial institutions in promoting sustainable development has gained substantial importance. Green banking refers to initiatives undertaken by banks to promote eco-friendly practices, reduce their carbon footprint, and support sustainable economic growth through green products and services such as paperless banking, energy-efficient infrastructure, online banking, green loans, and support for environmentally responsible projects.

India, being a rapidly growing economy with a diverse banking sector, has embraced the concept of green banking through both regulatory encouragement and voluntary adoption. Institutions like the Reserve Bank of India (RBI) and Indian Banks' Association (IBA) have played key roles in promoting sustainable finance. However, the success of such initiatives largely depends on customer awareness, acceptance, and usage patterns. Without sufficient knowledge and motivation among customers, green banking may remain underutilized, especially in semi-urban and rural regions.

Rajasthan, as one of India's largest and most diverse states in terms of geography, demography, and economic activity, presents a unique context to study the awareness and adoption of green banking. With the presence of both public and private sector banks, and a mix of urban and rural customers, Rajasthan offers a representative landscape to analyze how customers perceive and adopt eco-friendly banking services.

This research aims to evaluate the level of awareness among customers regarding green banking initiatives and to examine their behavioral patterns in adopting such services. The study investigates differences in awareness and adoption across demographic groups, analyzes the role



of banks in promoting green initiatives, and identifies key factors that encourage or hinder the adoption of green banking in Rajasthan. The findings of this study are expected to provide valuable insights to banks, policymakers, and environmental advocates in designing more effective strategies for the promotion and implementation of green banking practices.

REVIEW LITERATURE

Jeucken (2001) have defined green banking as an initiative by financial institutions to consider environmental and social factors in their business operations. The World Bank and UNEP-FI (United Nations Environment Programme – Finance Initiative) have also emphasized the role of financial institutions in driving green growth and sustainable development. Studies from developed countries highlight that banks in Europe and North America have proactively integrated green banking practices into their lending portfolios and operations, often motivated by stricter environmental regulations and a socially responsible consumer base.

According to Indian Banks' Association (IBA, 2014), green banking aims to make banking processes, services, and customer habits more environmentally sustainable. Singh and Singh (2012) conducted a study revealing that many Indian banks have started offering green products such as green loans, e-statements, mobile banking, and online fund transfers to reduce paper usage and carbon emissions. However, the study also indicated that the adoption of green practices among banks remained limited to Tier-1 cities.

Kumar and Shekhar (2015) analyzed green banking practices in public and private banks in India and found that while private banks were more aggressive in adopting green initiatives, public banks lagged behind due to operational constraints and limited customer awareness. They emphasized the need for proper training of staff and public outreach to popularize green banking.

Jain and Jain (2017) studied customer perception of green banking in urban India and found that while most customers were aware of online banking and e-statements, they lacked knowledge about green loans or sustainable investment options. The study showed that younger customers and those with higher education levels were more inclined toward green banking services.

Nandini (2019) conducted a survey across rural and urban banks in South India and reported that customer adoption was influenced by the ease of use, perceived benefits, and promotional



strategies by banks. The study highlighted a significant awareness-adoption gap and called for more proactive communication strategies by banks.

Sharma and Meena (2020) conducted a study in Jaipur and Jodhpur and found that while customers were using digital banking services, they did not associate them with environmental benefits. The study identified a lack of promotional efforts and insufficient bank staff training as major barriers.

Rathore (2021) noted that private banks in Rajasthan, especially in cities like Jaipur and Udaipur, were more successful in creating awareness through digital campaigns and customer engagement programs. However, in rural areas, public sector banks had greater customer outreach but failed to promote green banking effectively due to technological and infrastructural limitations.

RESEARCH METHODOLOGY

The present research on Green Banking Awareness and Customer Adoption Patterns: Insights from Rajasthan Banking Sector adopts a mixed-method approach, combining both quantitative and qualitative techniques to provide a comprehensive understanding of the subject. The study is descriptive in nature, aimed at assessing the current level of awareness among banking customers and analyzing their behavioral patterns regarding the adoption of green banking services. The research was carried out across five major cities of Rajasthan—Jaipur, Jodhpur, Udaipur, Kota, and Ajmer—chosen for their diverse economic activities and representation of both public and private banking clientele.

The sampling method used was stratified random sampling, allowing equal representation of customers from public and private sector banks. A total of 500 respondents participated in the survey, equally distributed between public banks like SBI, PNB, and Bank of Baroda, and private banks like HDFC, ICICI, and Axis Bank. To enrich the findings, 10 in-depth interviews were conducted with branch managers and officers responsible for green banking initiatives in selected banks. Primary data was collected using a structured questionnaire comprising closed-ended questions and Likert-scale items designed to capture customer awareness, usage frequency, satisfaction, and perceived barriers to green banking. The interviews provided qualitative insights into institutional strategies and operational challenges.

Secondary data sources included official reports from the Reserve Bank of India (RBI), Indian Banks' Association (IBA), sustainability disclosures of selected banks, and peer-reviewed journal



articles on green banking. Data analysis was conducted using SPSS software. Descriptive statistics such as frequencies, means, and percentages were used to summarize responses, while chi-square tests and cross-tabulations were employed to analyze relationships between variables like age, gender, and bank type. Qualitative data from interviews were analyzed thematically to identify recurring patterns, managerial perspectives, and suggestions for improvement.

Ethical considerations were strictly adhered to throughout the research process. Participation was voluntary, informed consent was obtained, and confidentiality of responses was maintained. The methodology thus ensures reliability, validity, and ethical integrity in studying green banking awareness and adoption among customers in Rajasthan.

GREEN BANKING INITIATIVES IN PUBLIC AND PRIVATE SECTOR BANKS

In India, both public and private sector banks have recognized the importance of integrating environmental sustainability into their operations and services. Green banking initiatives aim to reduce the carbon footprint of banking activities, encourage environmentally responsible behavior among customers, and support green financing projects. While the core principles of green banking remain the same across the sector, the approach and intensity of implementation often differ between public and private banks.

Public Sector Banks

Public sector banks (PSBs), such as State Bank of India (SBI), Punjab National Bank (PNB), and Bank of Baroda, have initiated several eco-friendly practices in recent years. These include the promotion of digital banking to reduce paper usage, installation of solar-powered ATMs, green home loans for energy-efficient housing, and e-statements instead of printed passbooks. SBI has been a frontrunner among PSBs, introducing the Green Channel Counter to encourage paperless transactions and launching the Green Home Loan scheme that offers incentives for buying environmentally sustainable homes.

Moreover, PSBs have adopted Core Banking Solutions (CBS) and mobile applications to reduce branch-based transactions, thereby decreasing electricity and fuel consumption. These banks also participate in government and regulatory initiatives related to green finance, including funding renewable energy projects, afforestation programs, and water conservation initiatives. However, the implementation speed and customer engagement in green practices are often slower in public



banks due to bureaucratic procedures, infrastructure limitations, and lower digital literacy among rural customers.

Private Sector Banks

Private banks such as HDFC Bank, ICICI Bank, Axis Bank, and Yes Bank have been more proactive and aggressive in implementing green banking practices. These banks have not only adopted internal environmental policies but also promote sustainable finance as a strategic priority. For instance, Yes Bank was one of the first Indian banks to publish a sustainability report in line with the Global Reporting Initiative (GRI) and actively fund renewable energy projects, green infrastructure, and climate-related innovations.

Private sector banks have also invested heavily in digital infrastructure to reduce dependency on physical branches. Initiatives such as e-wallets, mobile banking, net banking, and green fixed deposits are commonly promoted through digital marketing campaigns. Axis Bank, for example, has launched Green Banking services that reward customers for using digital channels, while HDFC Bank has supported environmental NGOs and awareness campaigns under its CSR initiatives.

Additionally, private banks often collaborate with international financial institutions for climate finance and adopt international sustainability frameworks such as the Equator Principles and UN Sustainable Development Goals (SDGs). Their operational flexibility, technological edge, and competitive environment allow them to implement green banking innovations more swiftly compared to public banks.

Comparative Insights

While both public and private sector banks contribute to green banking, private banks generally lead in terms of innovation, speed, and visibility of green initiatives. Public banks, on the other hand, have a wider reach, especially in rural and semi-urban areas, which gives them a unique advantage in spreading awareness and promoting green practices at the grassroots level. A collaborative approach, leveraging the strengths of both sectors, is essential to accelerate the adoption of green banking across the Indian banking ecosystem.



In conclusion, green banking in India is gaining momentum, but its success depends on a balanced integration of policy support, institutional commitment, technological investment, and customer awareness—elements that both public and private sector banks must actively pursue.

CUSTOMER AWARENESS AND PERCEPTION

Customer awareness and perception play a pivotal role in determining the success of green banking initiatives. While banks can introduce eco-friendly practices and promote sustainable products, the actual impact depends on how well these initiatives are understood, accepted, and utilized by customers. In the context of Rajasthan, a state with both urban and rural populations, varying literacy levels, and socio-economic diversity, customer awareness of green banking services shows a mixed pattern.

The study reveals that customer awareness regarding green banking is moderate overall but unevenly distributed across demographic segments. Urban customers, especially younger individuals (aged 18–35), and those with higher education levels, demonstrate significantly more awareness about green banking services such as mobile banking, internet banking, e-statements, and green home loans. Many of these customers associate such services with convenience, speed, and digital literacy rather than environmental sustainability. For example, users often adopt e-statements or mobile banking primarily to avoid visiting branches rather than to reduce paper consumption or carbon emissions.

On the other hand, in semi-urban and rural areas of Rajasthan, awareness levels are considerably lower. Many customers are not familiar with the term "green banking" and are unaware of its environmental benefits. They often consider traditional banking (such as using passbooks, physical forms, and cheque books) as more reliable. Limited access to digital infrastructure, low digital literacy, and language barriers further restrict the spread of green banking practices in these regions.

The perception of green banking is also influenced by trust, usability, and perceived risk. Customers who are digitally active and environmentally conscious view green banking positively and believe that it contributes to both personal convenience and ecological well-being. However, a significant number of customers, particularly the elderly and those from non-urban backgrounds, perceive green banking as complex, impersonal, and insecure due to concerns over cyber fraud and technical failures.



Interestingly, the study found that awareness campaigns by private banks, including app-based tutorials, SMS alerts, and digital marketing, were more effective in shaping positive perceptions among customers compared to public banks, which rely more on in-branch communication. Many public sector customers reported that they were unaware of green banking services until prompted during this survey, indicating a lack of proactive promotion.

In conclusion, customer awareness and perception of green banking in Rajasthan are shaped by demographic factors, digital exposure, bank communication strategies, and personal attitudes toward environmental responsibility. Bridging the awareness-adoption gap will require targeted outreach, multilingual promotional efforts, and simplified digital tools that cater to diverse customer groups. Only by aligning customer perception with the environmental goals of green banking can banks fully leverage the potential of sustainable finance in the region.

ADOPTION PATTERNS AND BEHAVIOR

Understanding customer adoption patterns and behavior is essential to evaluate the real-world impact of green banking initiatives. While awareness forms the foundation, actual usage—or adoption—of green banking services reflects the effectiveness of these initiatives in driving environmentally sustainable financial behavior. The study conducted across various districts in Rajasthan reveals important trends and insights into how customers interact with green banking services, what influences their adoption, and what barriers they face.

The analysis indicates that green banking adoption is growing, but it is more convenience-driven than environment-driven. Customers in urban areas, particularly those between the ages of 20–40, show a higher tendency to adopt digital banking services such as mobile banking apps, internet banking, UPI payments, e-wallets, and e-statements. However, most of them perceive these services as tools for saving time, reducing physical visits to the bank, and improving financial control—not as an effort toward environmental protection. Thus, while the adoption is high among this group, the environmental consciousness behind the usage is often incidental.

In contrast, customers in semi-urban and rural areas display lower adoption rates. Many continue to rely on traditional banking channels such as passbooks, cheques, cash deposits, and in-person transactions. Reasons include lack of digital literacy, fear of online fraud, irregular internet access, and mistrust in digital systems. Among these customers, the adoption of green banking practices is slow and often limited to SMS banking or ATM usage.



Another observation is that private sector bank customers are more likely to adopt green banking services than public sector bank customers. Private banks invest more in mobile apps, digital awareness campaigns, and seamless online interfaces, which encourage higher engagement. Public sector banks, while having broader reach in rural areas, often lack the digital infrastructure or customer education programs necessary for encouraging widespread adoption.

Behavioral analysis also shows that peer influence, educational background, and bank encouragement significantly impact adoption. Customers who were personally guided by bank staff or friends in using digital or green services were more likely to continue using them. Moreover, the presence of loyalty rewards or incentives (such as cashback for using e-statements or digital wallets) also motivated repeat usage.

- * Despite these advances, several barriers hinder full-scale adoption. These include:
- * Lack of awareness about the environmental benefits of green banking
- * Poor technical support or app glitches
- * Fear of online fraud or data privacy issues
- * Language barriers in app usage
- * Limited banking infrastructure in remote areas

In conclusion, adoption of green banking services in Rajasthan is influenced by a combination of demographic, technological, and institutional factors. While urban, younger, and digitally literate customers show higher adoption, rural and elderly populations lag due to infrastructural and perceptual barriers. To promote consistent and sustainable adoption behavior, banks must address these challenges through targeted digital inclusion programs, localized communication strategies, user-friendly platforms, and education that ties digital practices to environmental responsibility.

DATA ANALYSIS AND INTERPRETATION

To understand the trends in customer awareness and adoption of green banking services, data was collected from 500 respondents across five major cities of Rajasthan. The responses were categorized by age groups and location (urban vs. rural) to analyze demographic variations in green banking behavior.

Table – 1 Awareness and Adoption by Age Group

Age Group	Awareness (%)	Adoption (%)
18-25	75%	68%
26-35	82%	74%
36-45	65%	58%
46-60	48%	40%
60+	32%	25%

Interpretation:

The age group 26–35 showed the highest awareness (82%) and adoption (74%) of green banking services, indicating that young, working-age individuals are the most engaged demographic. This can be attributed to higher digital literacy, professional exposure, and familiarity with online platforms. The adoption rate steadily declines in higher age brackets, with only 25% of customers aged 60+ adopting green banking services. This highlights a clear digital divide and resistance to change among the older population.

Table – 2 : Urban vs. Rural Adoption Trends

Age Group	Urban Adoption (%)	Rural Adoption (%)
18-25	80%	60%
26-35	85%	65%
36-45	70%	55%
46-60	50%	45%
60+	35%	20%



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Interpretation:

Urban customers consistently show higher adoption levels than their rural counterparts across all age groups. The urban-rural gap is most pronounced in the 26–35 and 60+ categories. While urban areas benefit from better infrastructure, internet access, and frequent exposure to digital campaigns, rural areas face constraints like lack of awareness, digital illiteracy, and poor connectivity. Only 20% of rural respondents aged 60+ adopted green banking, indicating that rural elderly are largely excluded from digital banking benefits.

General Observations and Patterns

- * A positive correlation exists between age and digital comfort: younger users adopt green banking more readily.
- * Public sector bank customers reported slower adoption compared to private sector customers due to less aggressive promotion and outdated digital platforms.
- * Mobile banking and e-statements were the most widely used green services, while green loans and paperless onboarding were less known.
- * Adoption is more convenience-driven than environmentally motivated—users prefer online banking for ease, not for sustainability.

CONCLUSIONS FROM DATA ANALYSIS

- * Awareness does not always translate into adoption—some aware customers still hesitate to use green banking due to fear of fraud or technical challenges.
- * Banks must focus on rural outreach, especially targeting older customers, to reduce the adoption gap.
- * Personalized guidance, user-friendly apps, and multilingual customer education will be essential for improving adoption rates.
- * Green banking adoption can be significantly boosted if customers are made more aware of its environmental benefits, not just convenience.



FINDINGS AND DISCUSSION

The study reveals that customer awareness regarding green banking practices in Rajasthan is moderate but unevenly distributed across age groups, regions, and types of banks. Awareness is notably higher among younger, urban customers aged 18–35, who are more digitally literate and engaged with online banking services. In contrast, awareness significantly declines among customers aged 46 and above, particularly in rural areas, where limited access to digital infrastructure, lack of exposure, and low technological familiarity remain key barriers.

One of the most significant findings is the presence of a clear gap between awareness and actual adoption. While a large number of customers were aware of services like e-statements, ATM usage, and internet banking, a smaller proportion regularly used these services with an environmentally conscious mindset. The primary motivation for adopting green banking practices was convenience and time-saving, rather than concern for environmental sustainability. This indicates that the concept of “green” in green banking remains abstract or misunderstood by a large portion of the customer base, especially in non-urban regions.

The study also highlights that private sector banks are more proactive in promoting green banking initiatives compared to public sector banks. Private banks have invested in modern digital platforms, run targeted awareness campaigns, and often link green practices with financial incentives. As a result, customers of private banks show higher engagement and a more favorable attitude toward green banking. Public sector banks, despite having a larger rural customer base and deeper reach, lag behind due to outdated digital systems, limited promotional efforts, and lack of personalized guidance for customers unfamiliar with digital platforms.

Furthermore, behavioral analysis suggests that demographic variables such as age, education level, and occupation significantly influence adoption patterns. Younger and professionally active individuals, particularly in urban areas, are more open to using mobile apps, online fund transfers, and opting for paperless communication. On the other hand, elderly users often express distrust in digital channels, fear of cyber fraud, and preference for physical documentation.

The findings also align with previous studies that point toward a growing reliance on digital banking tools in urban India, but a persistent awareness-adoption gap in semi-urban and rural regions. While some bank officials reported efforts to organize customer awareness programs and



“digital literacy” campaigns, their effectiveness remains limited due to language barriers, low turnout, and insufficient follow-up.

In conclusion, the study underlines that while green banking adoption is gradually increasing in Rajasthan, it is largely being driven by urban youth who associate it with convenience rather than environmental responsibility. There remains a pressing need to reframe green banking not just as a digital service but as a collective environmental responsibility. For this, banks must implement structured awareness campaigns in regional languages, simplify user interfaces, and offer hands-on assistance to first-time users, especially in rural areas. Only with such inclusive and targeted strategies can the full potential of green banking as a tool for environmental sustainability be realized.

CONCLUSION

The present study aimed to evaluate customer awareness and adoption behavior regarding green banking initiatives in the public and private banking sectors of Rajasthan. The findings clearly highlight a growing but uneven understanding of green banking among customers, with adoption patterns largely influenced by demographic factors such as age, location, education level, and digital literacy. While younger and urban customers have shown relatively high levels of awareness and adoption—primarily driven by convenience and digital familiarity—there remains a substantial gap in engagement among older populations and rural customers, who often lack access, guidance, or confidence in digital platforms.

Private sector banks have emerged as early adopters and effective promoters of green banking services, with strategic investments in digital infrastructure and customer-centric communication. In contrast, public sector banks, despite their deeper rural penetration, continue to lag in promoting eco-friendly practices due to limited innovation and outreach. The study also found that customer behavior is driven more by personal utility than environmental responsibility, suggesting a disconnect between the functional use of green services and their intended ecological purpose.

To address this, banks must adopt a dual approach: first, to strengthen digital literacy and accessibility across all customer segments—especially in rural areas—and second, to frame green banking within the larger context of environmental consciousness through targeted educational campaigns. Simplified interfaces, multilingual support, personalized assistance, and incentivized adoption schemes can further accelerate green banking engagement.



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In conclusion, green banking in Rajasthan holds significant potential to contribute to both financial inclusion and environmental sustainability. However, its success will depend on bridging the awareness-adoption gap, fostering trust in digital systems, and aligning customer behavior with sustainable values. With coordinated efforts from banks, regulators, and civil society, green banking can evolve from a niche initiative to a mainstream financial and ecological movement.

REFERENCES

1. Awasthi, A., & Bedi, R. (2019). Green banking in India: A study of customer awareness and perception. *International Journal of Management Studies*, 6(1), 45–53.
2. Indian Banks' Association. (2014). IBA green banking initiatives. Retrieved from <https://www.iba.org.in/green-banking>
3. Jain, P., & Jain, R. (2017). Customer perception and adoption of green banking: An empirical study in India. *International Journal of Applied Business and Economic Research*, 15(10), 253–262.
4. Jeucken, M. (2001). *Sustainable finance and banking: The financial sector and the future of the planet*. Earthscan Publications.
5. Kumar, S., & Shekhar, R. (2015). Green banking in India: An overview. *Global Journal for Research Analysis*, 4(11), 154–156.
6. Nandini, V. (2019). Green banking awareness: A comparative study between rural and urban customers in South India. *Journal of Commerce and Accounting Research*, 8(3), 12–20.
7. Reserve Bank of India. (2021). Report on trend and progress of banking in India 2020–21. <https://rbi.org.in/Scripts/PublicationsView.aspx?id=20574>
8. Rathore, M. (2021). Comparative study of green banking practices in private and public sector banks in Rajasthan. *International Journal of Finance and Management*, 13(2), 78–85.
9. Sharma, L., & Meena, R. (2020). A study of awareness of green banking initiatives in Rajasthan. *Journal of Management Research and Analysis*, 7(4), 127–133. <https://doi.org/10.18231/j.jmra.2020.027>