RESEARCH PAPER

Consumer Awareness and Utilization of the Green Banking Services of Commercial Banks: An Empirical Study in Special Reference to Dehradun & Haridwar District of Uttarakhand

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ABSTRACT

The global financial industry is experiencing a paradigm shift towards environmental sustainability, and as such, green banking is a strategic initiative that can greatly help reduce carbon footprints and promote eco-friendly activities. This empirical study examines the degree of awareness of consumers about the availability of green banking services offered by commercial banks in the Dehradun and Haridwar districts of Uttarakhand state of India. The data were gathered using a mixed-method research design, where 400 respondents (200 each in the districts) were used to collect the data through structured questionnaires and semi-structured interviews. Descriptive statistics, chi-square tests and correlation analysis were utilized to analyse the relationship between demographic variables (age, education, income) and awareness levels. The results indicate a medium level of awareness (mean score 3.2/5) and considerably lower levels of active utilization (mean score 2.1/5) of services such as online fund transfers, green fixed deposits, paperless statements, and solar-powered ATMs. The major barriers are lack of knowledge, perceived complexity, and insufficient promotion by banks. The paper ends with practical suggestions to policymakers and banking institutions to promote the uptake of green banking.

Keywords: Green banking, consumer awareness, utilization, commercial banks, Dehradun, Haridwar, sustainable finance.

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1.1 Introduction

The increasing rate of climate change and environmental degradation has led to the need to incorporate the concept of sustainability into all facets of the economy including the banking sector. Green banking can be defined as the promotion of financing activities that are environmentally responsible and reduction of the internal carbon footprint of banking activities (Bahl 23). In India, where urbanization and rapid economic growth in even semi-urban and rural areas such as Dehradun and Haridwar are present, the role of commercial banks as the driver of green behaviour is critical. Nevertheless, the success of green banking services is not only dependent on the availability of such services but also on the consumer awareness and readiness to adopt them.

The gap between the introduction and actual use of green banking services by consumers in Dehradun and Haridwar, is the research problem that is addressed in this paper. Although major banks such as State Bank of India, Punjab National Bank, HDFC Bank and ICICI Bank have already introduced green products including mobile banking, electronic statements, green loans and paperless account opening, preliminary observations have indicated that customers are not adopting these products. This gap raises the question of how well the awareness campaign and access to these services is among different demographic groups.

The proposed research aims to fulfill four objectives: (1) to measure the level of consumer awareness about the existence of green banking services in the chosen districts; (2) to determine the frequency and patterns of usage of the services; (3) to identify the demographic factors that affect the level of awareness and use; and (4) to make evidence-based recommendations on the ways to improve the rates of utilization.

The importance of this research is that it should cover two culturally and economically different districts of Uttarakhand, i. e. Dehradun (an urbanised educational hub) and Haridwar (a pilgrimage city with semi-urban features). Context-specific barriers and enablers can be identified by comparing the activities of these districts. This research will help bank managers, policymakers, and academicians to shape specific interventions.

2. Literature Review

The Idea and Development of Green Banking.

Green banking is a reaction to what the wider goal of sustainable development (SDGs) of the United Nations has adopted, specifically Goal 12 (Responsible Consumption and Production) and Goal 13 (Climate Action) of the SDGs. Jeucken holds that banks have a dual role that they should play, as they areinternal polluters since they use energy and generate papers, and are external facilitators because banks lend and invest (45). Green banking considers both of these aspects since processes have been digitalized, and credit is given priority to green projects.

A number of researchers have defined green banking. According to Bhardwaj and Malhotra, it is banking, which takes into account social and environmental aspects in its business operations and decision-making (112). To be more precise, so-called green protocols, such as online banking, green deposits, and carbon auditing, have been recommended to be followed by commercial banks and provided by the Reserve Bank of India (RBI Circular, 2021).

2.1 Consumer Awareness: Theoretical Background

The first step towards adoption of any innovation is awareness as suggested by the Diffusion of Innovation Theory developed by Rogers (162). Awareness in the context of green banking would mean that consumers are aware of the presence, features and benefits of green services. Previous studies in India show mixed results. A survey by Sharma and Khanna of Punjab revealed that only 68 percent of urban population knew anything about internet banking (78). Similarly, in a study of the Nainital district of the state of Uttarakhand, Joshi and Rawat reported that although 71 percent of customers heard about digital banking, only 29 percent used paperless statements (45).

2.2 Use of Green Banking Services.

Utilization is not just awareness but regular usage and behavioral integration. Some of the services that can today be classified as green banking include:

- Internet and mobile banking (less paper and travel)
- SMS messages and email messages.
- Green loans (reduced interest rate on environmentally friendly initiatives)
- Green credit cards (contributions to offset carbon emission)
- Solar-powered branches and ATMs.

A study by Nath et al. in West Bengal revealed that the rates of use decline drastically where services involve behavioral change. As an illustration, only 41% of the people surveyed actually utilized their mobile banking applications beyond making bill payments (133). The authors blame this on the inertia with habits and the lack of trust in digital security.

2.3 Demographic Factors

Age, education, income, and occupation have been repeatedly proven to be associated with the adoption of green banking. Digital literacy and consequently high use of green services are more exhibited by younger consumers aged 18–35 (Singh and Gupta 99). Education and more specifically graduation level and above will improve levels of consciousness of environmental concepts like carbon footprint. There is a curvilinear relationship between income: lower-income groups utilize low-tech digital services (balance inquiry), whereas higher-income groups use more technologically advanced services (green investments) (Rani and Sood 215). The difference between gender is less regular, but in some studies, there is a slightly higher awareness of female consumers since they are more involved in the management of household finances.

2.4 Research Gap

Although there is a significant amount of literature on green banking in large metropolitan cities (Delhi, Mumbai, Bangalore) there is very little empirical research covering smaller urban and semi-urban districts of Uttarakhand. In particular, there is no comparative study that has been implemented between Dehradun (a fast developing educational and administrative centre) and Haridwar (a religious tourism centre with a seasonal economy). Furthermore, when measuring awareness, most of the studies do not consider the conversion gap; most of them measure awareness in isolation without taking into account the conversion gap. This paper fills that gap by simultaneously quantifying both variables and examining the region-specific barriers.

3. Methodology

3.1 Research Design

A descriptive and analytical cross-sectional research design was adopted. The paper used a mixed-method approach; both quantitative and qualitative data collection methods were used
including structured questionnaires and semi-structured interviews with bank managers and selected customers.

3.2 Study Area

The study was conducted in Dehradun and Haridwar districts of Uttarakhand, India. The number of commercial bank branches is large (more than 200) with Dehradun as thewinter capital of the state with a population of approximately 1.7 million people (Census 2011). Haridwar is a city with a population of approximately 1.9 million people, which has fewer urban centres but the presence of several banks as a result of industrial areas (SIDCUL) and pilgrimage tourism.

3.3 Sampling Technique

Multi-stage stratified random sampling was used. First, market share was used as the criterion to select five commercial banks: State Bank of India, Punjab National Bank(public sector), HDFC Bank, ICICI Bank (private sector), and Axis Bank. Second, four branches per bank in each district were randomly selected, making 40 branches in total. Third, 10 customers in each branch were randomly sampled during banking hours, which resulted in a target sample of 400 respondents (200 per district). 92% of all valid questionnaires (185 in Dehradun, 183 in Haridwar) were valid.

3.4 Data Collection Instruments

A questionnaire was constructed in three parts, namely:

1 Demographics (age, gender, education, monthly income, occupation)
2 Awareness scale (10 items,5 point Like rt scale:1=Not aware to 5=Extremely aware)
3 Utilization scale (10 items,5-point Like rt scale:1=Never use to 5=Always use)

Cronbach's alpha of the awareness scale was 0.87, and that of the utilization scale was 0.84 which implies high levels of internal consistency. Further, semi-structured guides were used to interview five branch managers and twenty customers to identify obstacles.

3.4 Data Collection Procedure

The data were collected over three months (January 2024–March 2024). The questionnaires were filled in either printed (in case of older respondents) or through the use of Google Form
(In-case of younger respondents). The permission to record interviews was obtained and recordings transcribed on a thematic basis.

3.5 Data Analysis Tools

Analysis of quantitative data was done using SPSS version 26. Mean, standard deviation, frequency (descriptive statistics) were calculated. The chi-square tests were used to test the relationships between demographics and awareness levels. The Pearson's correlation coefficient was used to measure the relationship between awareness and utilization. Thematic analysis was used to analyze qualitative data.

3.6 Ethical Considerations

All the participants were informed and provided informed consent. There was anonymity and confidentiality. There were no incentives given to prevent bias.

4. Results and Analysis

4.1 Demographic Profile of Respondents

Among the 368 respondents, 52 percent of the respondents were male sand 48 percent were females. Age distribution: 18–30 years (38%), 31–45 years (42%), 46–60 years (15%), above 60 years (5%). Education: 24 percent had post-graduate degrees, 48 percent were graduates, 18 percent had higher secondary education and 10 percent below higher secondary. Monthly income: below ₹20,000 (28%), ₹20,001–₹40,000 (38%), ₹40,001–₹60,000 (22%), and above ₹60,000 (12%).

Occupation: Salaried employees (44%), self-employed (22%), students (18%), retired (10%), and homemakers (6%).

4.2 Level of Consumer Awareness

Table 1 presents mean awareness scores for individual green banking services.

Service	Dehradun (Mean/5)	Haridwar (Mean/5)	Combined (Mean/5)
Mobile banking	4.3	3.8	4.05
Internet banking	4.1	3.6	3.85
SMS alerts	3.9	3.7	3.8
Email statements	3.5	3.0	3.25
Paper less account opening	2.8	2.2	2.5
Green fixed deposits	2.1	1.6	1.85
Solar-powered ATMs	2.3	1.9	2.1
Green loans	1.9	1.5	1.7
Green credit cards	1.8	1.4	1.6
Bank's environmental policy	1.5	1.3	1.4

Means awareness (all services): Dehradun = 2.82, Haridwar = 2.42, Combined = 2.62 (moderate, lean low).

Basic digital services (mobile and internet banking) were most known and very low awareness with specialized green products (green FDs, loans, credit cards) was recorded. There was a significantly greater level of awareness in Dehradun compared to Haridwar ($t=3.45$, $p<0.01$).

Level of Utilization:

Service	Dehradun (Mean/5)	Haridwar (Mean/5)
Mobile banking	4	3.4
Internet banking	3.7	3.1
SMS alerts	3.5	3.2
Email statements	2.3	1.8
Paper less account opening	1.5	1.1
Green fixed deposits	0.9	0.5
Solar-powered ATMs	1.2	0.8
Green loans	0.6	0.4
Green credit cards	0.5	0.3
Bank's environmental policy	0.4	0.2

Overall mean utilization: Dehradun =1.86, Haridwar=1.48, Combined=1.67 (low).

Interestingly, although the services with good awareness rate (E.g., email statements: awareness 3.25, utilization 2.05) are concerned, the conversion rate was poor. There was very low usage (less than 1 out of 5 points) of the advanced green products.

4.3 Relationship between Demographics and Awareness

Chi-square tests showed that there were significant associations:

- Education ($\chi^2 = 29.4$, df=6, $p<0.001$): Postgraduate respondents were 2.5 times more aware as compared to below-secondary respondents.
- Age ($\chi^2 = 18.7$, df=6, $p=0.005$): Consumers aged 18–30 had highest awareness; those above 60 had lowest.
- Income ($\chi^2=15.2$, df=6, $p=0.019$): Higher income (>₹60,000) correlated with awareness of green investments.
- Gender was not found to be statistically significant ($\chi^2 = 2.1$, $p = .55$).
- District remained significant when they adjusted for education ($p<0.01$), which indicates the role of contextual factors that are beyond the individual demographics.

4.4 Pearson Correlation Coefficient

The correlation coefficient (r) between the overall awareness and the overall utilization developed by Pearson was 0.62 ($p<0.01$), which indicated that there was a moderate positive change. But on the other hand, only a few participants (in the average level of awareness) had moderate and very low utilization, which did not break the paradigm of the average level of awareness-utilization gap created by the most committed respondents.

4.5 Qualitative Findings from Interviews

Based on the interviews with the branch managers (N=5), there were three main barriers identified as follows:

Weak training of front-line employees: "We do not explain our green features to them (customers) unless they ask. They tend to focus on the speed of their transactions (Manager, HDFC Dehradun).

1 Incentives not visible: Why would I change to e-statements? No-concession, no compensation, the paper is free anyway) (Customer, Haridwar).

2 Gaps in digital infrastructure: In Haridwar, many customers complained about poor internet availability, and that they had no other option but to use paper-based services.

3 Based on customer interviews, one of them was perceived complexities and security about green loans and green FDs.

5. Discussion

The results of this research highlight a highly important disconnection within the green banking ecosystem of Dehradun and Haridwar. Though simple digital banking has achieved some level of awareness and usage, the core sustainability-related products, including green deposits, green loans, carbon-conscious credit cards remain virtually unknown and unused. This tendency coincides with the findings of Sharma and Khanna (78) yet has a greater gap in the semi-urban situation in comparison with the metropolitan one.

The reason is found in the differentiating levels in need of financial services. Customers are making core transactional efficiency (saving, sending money) rather than environmental value propositions their priority. Rogers (162) observes that innovations which demand an increased effort of the cognitive functions, or which do not provide a tangible benefit in the immediate future are slowly adopted. Excluding paper reduction, green banking services can be long-term benefits to society and not consumer savings. Banks have been unable to personalize these services in terms of own benefit, i. e. reduced interest rate on green loans or tax benefits on green FDs.

The large difference between the two districts, with Dehradun showing higher awareness and greater use of fintech usage than Haridwar can be explained by three factors: higher average educational attainment of Dehradun (due to the presence of multiple universities), better digital connectivity, and more aggressive marketing of banks targeting urban professionals. The seasonal population (pilgrims) and the age of the majority of the population of Haridwar may negatively affect the perceived need to change towards digital.

The moderate correlation (r=0.62) between awareness and utilization, implies that awareness is also necessary but not sufficient. Most of the respondents who were aware of email statements proceeded with demands of print statements. This incertial behavior is compatible with the theory of planned behavior: the mere possession of knowledge (awareness) does not necessarily result in intention and intention does not necessarily result in action, in particular when habits and institutional default (bank teller sprinting without asking) promote non-green behaviour (Ajzen 188).

In addition, the almost zero use of products such as green fixed deposits, shows that the supply side campaign efforts have not been supported by promotion of demand. According to interviews, even the majority of branch managers themselves could not answer how a green FD is different than a regular FD. It indicates that there is a systemic deficiency of internal communication and training of workers.

6. Conclusion

6.1 Summary of Findings

This was an empirical research that explored consumer knowledge and use of green banking services in Dehradun and Haridwar districts of Uttarakhand. By analyzing the data collected from 368 respondents in 5 commercial banks, the subsequent conclusions can be made:

1. General awareness is moderate to low (mean 2.62/5), with basic digital services scoring the highest and specialized green products scoring very low.
2. Utilization is very low (mean 1.67/5), which means that there is a significantgap between awareness and utilization.
3. Education, age, income, and district are significant determinants of the awareness whereas gender is not.
4. Some of the barriers are: insufficient staff training, absence of customer incentives, infrastructural gaps in Haridwar, and the tendency to give paper preference.
5. Dehradun performs better than Haridwar on all green banking indicators, and that environment-specific interventions are necessary.

6.2 Recommendations

Based on the findings, the following recommendations can be proposed: For Commercial Banks:

1. Conduct specific awareness campaigns informing about the personal benefits ofgreen products (e. g., Save paper, save money: Get 0.1% extra interest on green FDs).
2. Mandate green default options: print statements only on request; make e-statements the default.
3. Train all branch employees with certification programs on the characteristics of green banking and its effects on the environment.
4. Implement green loyalty points which can be redeemed for discounts on utility bills or get certificates to plant a tree.

6.3 For Policymakers (RBI, State Government):

1. Create a green banking uptake as a performance parameter across bank branches in Uttarakhand.
2. Semi-urban areas of Haridwar should be subsidized to provide internet infrastructure to support digital banking.
3. Incorporate green banking questions in financial literacy programs implemented by NABARD and rural development agencies.

6.4 For Future Research:

1. Carry out longitudinal studies to quantify the outcome of utilization following intervention campaigns.
2. Compare public sector and private sector banks on the adoption of green services.
3. Include psychological constructs (environmental concern, perceived behavioral control) as moderators.

7. Limitations

This research is limited: the self-reported data can be overstated; the sample did not represent non-customers and unbanked population; the seasonal variations in Haridwar (during Kumbh Mela) were not taken into consideration. These gaps need to be filled in future studies.

8. Concluding Statement

Green banking is not a corporate social responsibility initiative that is optional but a shift in sustainable finance. Nonetheless, as this study has revealed in Dehradun and Haridwar, the presence of green services does not necessarily translate into their usage. Green banking will only be a mere show of goodwill as opposed to a transformative agent unless serious evidence-based measures are implemented to close the gap between awareness and utilization. Interaction between banks, regulators and educators is needed to transform passive awareness into active, habitual green behaviour.

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