CHALLENGES AND OPPORTUNITIES OF GREEN BANKING IN INDIA – A CASE STUDY WITH SPECIAL RESPECT TO BANGALORE RURAL

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Abstract
This case study explores the challenges and opportunities of green banking in Bangalore Rural, India, with a specific focus on the adoption of green banking products across different age groups. The study collected data through a structured questionnaire and analyzed it using statistical methods such as ANOVA and post hoc analysis. The findings reveal significant differences in the usage of green banking products among age groups, with the younger generation showing a higher inclination towards adoption. However, the study highlights the importance of raising awareness and promoting green banking products among middle-aged and senior individuals to achieve broader sustainability goals. This study contributes to a better understanding of customer behavior and decision-making in the context of green banking in India.

Keywords: *Green Banking, Sustainable Banking Practice, Green Marketing, Eco Friendly Banking, E-Banking*

Introduction

In today's world, our excessive consumption of resources raises concerns about what we are leaving behind for future generations. This has led to the emergence of the concept of sustainable development, which aims to meet the needs of the present generation without compromising the needs of future generations. Green marketing and green banking have emerged as a result of this concept. Green banking differs from conventional banking, as it not only focuses on security and profitability but also emphasizes environmental and socially responsible investing. Green banking promotes environmentally friendly practices and aims to reduce the carbon footprint of banking activities. Essentially, it is a banking approach that benefits the environment and is also referred to as ethical banking.

One way in which banks can practice green banking is by minimizing the use of paper and promoting paperless banking through online banking services. By embracing sustainable practices, such as green banking, we can address pressing issues like global warming, natural calamities, and disasters. Banks, being financial institutions that interact with the masses, have the potential to influence customer attitudes towards the environment. Therefore, it is crucial to promote green banking practices in order to initiate sustainable development and protect the environment from potential disasters.

While the concept and practice of green banking are relatively new in India, developed nations like the USA have already embraced it. It is imperative for India to focus on sustainable banking in order to safeguard the environment. The performance of a bank's clients can have a significant impact on the bank itself, so it is essential to conduct appropriate environmental and social due diligence to minimize the risk of non-performing assets. Failure to comply with environmental regulations can lead to project delays and result in non-performing assets for the bank. Thus, banks need to consider ecological factors in lending decisions, alongside security and profitability.

To facilitate green banking, various international protocols such as UNEPFI, Equator Principles, and LEED certificates have been introduced. However, Indian banks still lag behind in this regard. Some banks in India have taken the initiative to formulate strategies and implement green banking practices, such as online and mobile banking, green channel counters, e-statements, green loans, and solar ATMs. The issue of global warming should not be confined to mere debates; instead, proactive steps must be taken towards going green. Green banking serves as one of the pathways to achieve this goal. It is crucial to involve key stakeholders and raise awareness about environmentally friendly banking practices to drive positive change.

Review Of Literature

Papastergiou and Blanas (2011) A comprehensive and innovative study titled "Sustainable Green Banking: The Case of Greece" was conducted, approaching the subject matter in an integrated manner. The researchers made notable findings, revealing that 50% of banks were in a defensive phase, 40% in a preventive phase, and 10% in an offensive phase in terms of implementing sustainable green banking practices.Amin (2016) studied the Indian and Global perspectives of Green banking. She focused on the global scenario of green banking, where foreign banks' initiatives were described Chicago's adopted the green

banking principles which include energy-efficient lighting, recycling materials for construction, etc., Halton National bank – Sri Lanka focused on green buildings, Silicon Valley Banks leaded green funds. Tridos Bank provided funds to organizations supporting eco-friendly practices. On the Indian Scenario, Indian Banks like SBI have taken many green initiatives, which was highlighted, the challenges for the application of this concept calls for selecting eco-friendly projects- client base, More operation cost, etc. It was concluded that banks in India need to get more active as compared to banks of the world.Verma(2012) In a study discussing the evolution of green banking in India, the author shed light on the incorporation of green banking practices as a significant activity within corporate social responsibility (CSR) initiatives. However, the study concluded that only a limited number of banks in India have embraced green banking, indicating a lack of awareness among both bank staff and customers. Despite the recognition of green banking as an essential approach, its implementation remains relatively low in the Indian banking sector. This highlights the need for increased awareness and education among bank personnel and customers to foster a greater understanding and adoption of green banking practices in India.Singh and Singh (2012) As society becomes increasingly concerned about the natural environment, businesses are adapting their practices to prioritize environmental sustainability. In response to this growing awareness, organizations are actively making changes to promote "greenery" and incorporate eco-friendly measures into their operations. This shift reflects a broader trend of businesses recognizing the importance of environmental conservation and taking steps to contribute positively to the natural world.

LK Nooney (2021) conducted a quantitative descriptive research study focusing on bank employees' awareness and perspectives on green banking. The study involved rating the effectiveness of implementing green banking and identifying factors motivating banks to offer green banking services. The findings indicated that the majority of respondents were aware of the concept of green banking, and different age groups did not show significant variations in their awareness levels.Abu B Siddik& GW Zheng (2021) conducted a study to explore the impact of COVID-19 on the green banking activities of Bangladesh Bank and non-bank financial institutions (NBFI's). The study utilized secondary data and employed descriptive statistics, percentage changes, and various graphs for data analysis. The empirical findings revealed a 7.26% increase in total green banking activities of banks during the pandemic compared to the pre-pandemic period. In the research article "The role of China's Banking Sector in providing Green Finance" by Bai, Yunwen& Faure, Michael & Liu, Jing (2014), the authors investigated China's Green Banking policies and analyzed the practices of Chinese banks in aligning environmental principles with their financing activities. The paper also examined the role of the Chinese banking industry in establishing a sustainable framework for banking and green finance. Additionally, the article aimed to identify the challenges and opportunities faced by Chinese banks in enhancing their financial performance.

The existing research on green banking has primarily concentrated on the adoption of green banking products and their profitability, often neglecting the influence of individual factors such as age, occupation, gender, or financial literacy. Given these limitations, there is a crucial need for a comprehensive study on the adoption of green banking in India.

Objectives of the Study

1. To analyze the variations in the usage of green banking products among different age groups, genders, and occupations, and determine the extent to which these factors influence adoption.
2. To investigate the relationship between age groups and the adoption of green banking products, considering the potential impact of age-related factors on customer behavior and decision-making in the context of green banking.

Research Hypotheses

Based on the stated research objectives, the present study seeks to examine the following hypotheses:

H0: The average usage of green banking products is not associated with age.

H1: The average usage of green banking products is associated with age.

The study aims to test these hypotheses to determine whether there is a significant relationship between age and the adoption of green banking products. By analyzing the data and conducting statistical analyses, the research aims to provide insights into the influence of age on the adoption of green banking practices, contributing to a better understanding of customer behavior in this context.

Research methodology

The research utilized a specific methodology to explore the connection between the adoption of green banking products and the age distribution of individuals. By implementing this approach, the study aimed to investigate the potential relationship between age and the extent to which people

embrace environmentally conscious banking options.

Data collection and sample Size

The data collection process for analyzing the adoption of green banking products and age patterns involved the use of a structured questionnaire. This questionnaire comprised twelve specific questions focusing on the usage of various green banking products. These products included Mobile banking, Green channel counters, Online banking, Green mortgages, Green remit cards, Green credit card, Online savings account, Green certificate of deposits, Green checking account, E-Investment services, Bonds and mutual fund for environmental friendly projects, and Recyclable debit & credit cards.

To determine the usage patterns of these products, each respondent was assigned an individual usage score using a 5-point Likert scale. This Likert scale measured the frequency of usage of the green banking products. A score of one indicated that the product had never been used by the respondent, while a score of five indicated frequent usage. The purpose of this scoring system was to quantitatively assess the level of adoption for each green banking product.

In this article, we utilized non-probability sampling as our chosen method to study a specific population of interest. This approach allowed us to target and gather data from individuals who met our specific research criteria.

To gather the necessary data, the questionnaires were distributed both in-person and online through Google Forms. This allowed for a diverse sample of respondents from various regions within Bangalore Urban. The use of both personal distribution and online platforms ensured a wider reach and increased participation in the study.In this particular study, we employed ANOVA and Post hoc Multiple Comparisons tests to analyze the data. Additionally, the Levene test was utilized to assess the equality of variances across distinct age groups.

Data Analysis and Results

The descriptive statistics of green banking product across various age groups are presented in Table 1. The mean values for the age groups 15-30, 30-45, 45-60, and 60 above are 26.5152, 26.0741, 22.9333, and 15 respectively. The standard deviations indicate the variability within each group. The 95% confidence intervals provide a range within which the true population means are likely to fall. The minimum and maximum values show the range of scores observed in each age group. Overall, the total sample of 112 participants had a mean score of 25.5179.

Table1:Descriptive statistics of green banking product across various age group

Age Groups	N	Mean	Std.Deviation	Std. Error	95%ConfidenceIntervalforMean		Minimum	Maximum
					LowerBound	UpperBound		
15-30	66	26.52	9.10	1.12	24.79	29.01	13.00	49.00
30-45	27	26.11	7.75	1.40	23.01	29.14	13.00	49.00
45-60	15	23.01	7.40	1.91	19.01	27.02	13.00	39.00
60Above	4	15.00	2.31	1.15	11.32	19.01	13.00	17.00
Total	112	25.51	8.66	.82	23.90	27.14	13.00	49.00

The results of the ANOVA conducted to test the equality of mean usage across various age groups are presented in Table 2. The between-groups sum of squares was 616.694, with 3 degrees of freedom, resulting in a mean square of 205.565. The F-statistic was calculated to be 2.877. The significance level (Sig.) was found to be 0.039, indicating a significant difference in mean usage among the age groups. The within-groups sum of squares was 7717.27, with 108 degrees of freedom and a mean square of 71.456. The total sum of squares was 8333.964, with a total of 111 degrees of freedom. These findings suggest that there is evidence to reject the null hypothesis of equal mean usage across the age groups, indicating that there are significant differences in the average usage level among the different age groups.

Table2:ANOVA results of test of equality of mean usage across various age groups

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	616.694	3	205.565	2.877	0.039
Within Groups	7717.27	108	71.456		
Total	8333.964	111			

Table 3 presents the results of the Levene test, which was conducted to assess the homogeneity of variance among the different age groups. The Levene statistic was calculated to be 1.638, with 4 degrees of freedom in the numerator and 109 degrees of freedom in the denominator. The significance level (Sig.) was found to be 0.135, indicating that there is no significant evidence to reject the null hypothesis of homogeneity of variance. Therefore, it can be concluded that the assumption of equal variances across the age groups is reasonable for further analysis.

Table3: Test of Homogeneity of Variance

Levene Statistic	df1	df2	Sig.
1.638	4	109	.135

The obtained *p*-value for the Levene statistics is greater than 0.05, indicating evidence of equality in variance among the age groups. However, ANOVA alone has a limitation in identifying which specific group(s) contribute to significant differences in the mean. To address this, a post hoc analysis was conducted to determine which groups exhibit significant differences in the mean usage of the green banking product. The results of the post hoc analysis are presented in Table 4.

Table4:Post hoc analysis of mean usage of green banking products across various ages.

		Mean Difference			95% Confidence Interval	
(I)Age	(J) Age	(I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
15-30	30-45	0.44	1.93	1.00	-4.60	5.48
	45-60	3.58	2.42	0.45	-2.73	9.89
	60Above	11.52	4.35	0.05	0.16	22.87
30-45	15-30	-0.44	1.93	1.00	-5.48	4.60
	45-60	3.14	2.72	0.66	-3.96	10.24
	60Above	11.07	4.53	0.08	-0.74	22.89
45-60	15-30	-3.58	2.42	0.45	-9.89	2.73
	30-45	-3.14	2.72	0.66	-10.24	3.96
	60Above	7.93	4.76	0.35	-4.48	20.34
60Above	15-30	-11.51	4.35	0.05	-22.87	-0.16
	30-45	-11.07	4.53	0.08	-22.89	0.74
	45-60	-7.93	4.75	0.35	-20.35	4.48

*.The mean difference is significant at the 0.05 level.

Table 4 presents the results of the post hoc analysis conducted to determine significant differences in the mean usage of green banking products across various age groups. The mean differences, standard errors, significance levels (Sig.), and corresponding 95% confidence intervals are reported. For the age group 15-30, no significant differences were found with the other age groups (30-45, 45-60, and 60 Above) as the confidence intervals include zero for all comparisons. Among the age group 30-45, no significant differences were observed with the other age groups as well, as the confidence intervals include zero for all comparisons. For the age group 45-60, no significant differences were found with the age groups 15-30 and 30-45. However, there were no significant differences found with the age group 60 Above, indicated by the confidence interval including zero. Regarding the age group 60 Above, a significant difference was observed with the age group 15-30, as the mean difference is significant (marked by an asterisk) and the confidence interval does not include zero. However, no significant differences were found with the age groups 30-45 and 45-60, as the confidence intervals include zero for those comparisons. The findings suggest that the age group 60 Above shows a significant difference in mean usage of green banking products compared to the age group 15-30, while the other age groups did not exhibit significant differences among each other.

Findings

The current investigation focuses solely on examining the usage of green banking products across different age groups. No independent study has been conducted to explore the underlying reasons why one age group exhibits greater adoption of these products compared to others. It is important to note that the results presented in this study are based on a relatively small sample size of 112 participants, which may limit the generalizability of the findings to the larger population. The sampling method employed in this study is convenience sampling, which introduces the possibility of sampling error. Consequently, the obtained results may be influenced by biases

associated with the non-random selection of participants.

Conclusions

1. Green banking refers to promoting environmentally friendly practices and reducing the carbon footprint in banking activities, including online banking, mobile banking, and other eco-friendly services.
2. The present study aims to examine the usage of green banking products among different age groups.
3. It is commonly perceived that green banking is more prevalent among the younger generation and less popular among older individuals.
4. The study findings reveal that the young age group (15-30) demonstrates a higher inclination towards green banking products, with a mean usage score of 26.50.
5. In contrast, individuals above 60 years of age exhibit a lower mean usage score of only 15 for green banking products.
6. These results suggest the need to raise awareness and promote the adoption of green banking products among middle-aged and senior individuals rather than focusing solely on the younger age group.

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