

# Environmental Consciousness and Adoption of Green Banking Services

Conciencia ambiental y adopción de servicios bancarios verdes

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## Abstract

This article explores the relationship between customer awareness and the adoption of green banking services at the State Bank of India (SBI) in the Malabar region. The outcome reveals the factors influencing the adoption of these services and the associations between customer awareness and the adoption of Green Banking Services (GBS) in SBI. The SBI has implemented various green banking services to reduce the environmental impact. Customer awareness of these green banking practices is significant, with studies indicating that most customers are familiar with such services. However, the adoption rate can vary based on customer age and awareness. In the Malabar region, exploring this relationship would involve assessing how aware customers are of these services and how likely they are to adopt them, potentially influenced by factors such as age, education, and environmental consciousness.

JEL code: Q01, Q56, G21.

**Keywords:** Customer adoption, Customer awareness, Environmental consciousness, Green banking services, ESG.

## Resumen

El artículo explora la relación entre el conocimiento del cliente y la adopción de servicios de banca verde en el State Bank of India (SBI) en la región de Malabar. El resultado revela los factores que influyen en la adopción de estos servicios y las asociaciones entre el conocimiento del cliente y la adopción de Servicios de Banca Verde (GBS) en SBI. El SBI ha implementado diversos servicios de banca verde para reducir el impacto ambiental. El conocimiento del cliente sobre estas prácticas de banca verde es significativo, y los estudios muestran que la mayoría de los clientes conocen estos servicios. Sin embargo, la tasa de adopción puede variar según la edad y el conocimiento del cliente. En la región de Malabar, explorar esta relación implica evaluar el conocimiento que tienen los clientes de estos servicios y la probabilidad de que los adopten, posiblemente influenciado por factores como la edad, la educación y la conciencia ambiental.

Código JEL: Q01, Q56, G21.

**Palabras clave:** Adopción del cliente, Conciencia del cliente, Servicios de banca ecológica, Conciencia ambiental, ESG.

## INTRODUCTION

### *Study Background*

The financial sector has a significant impact on a nation's economic growth (Onatunji, 2025). The Indian banking sector promotes sustainable development (Agrawal & Mukti, 2025; Karthikeyan, 2025). In recent years, there has been a significant surge in the popularity of green banking (GB) due to growing environmental concerns, leading to the urgent necessity for sustainable development (Sharma et al., 2025; Rady et al., 2025). The Institute for Development and Research in Banking Technology stated that GB refers to promoting sustainability in banks through practices and guidelines across economic and environmental sectors (Rajuroy & Emmanuel, 2025; Bholane, 2025).

The SBI (State Bank of India) is a public sector bank and financial services organization owned by the Indian government. It explores the relationship between customer awareness and the adoption of green banking services at the State Bank of India (SBI) in the Malabar region, offering a unique perspective on how environmental consciousness influences banking choices. At the same time, SBI has pioneered green banking practices, including initiatives like solar-powered ATMs, green loans, and digital banking to reduce carbon footprints. By examining customer awareness and adoption patterns, this research aims to provide insights into the effectiveness of SBI's green banking strategies and identify areas for improvement.

This study focuses on a specific geographic region, offering localized insights to inform tailored marketing and customer engagement strategies for green banking services. The corporation's headquarters are in Mumbai, Maharashtra (Ashwath & Sachindra, 2025). Recently, SBI has dramatically increased its digital presence by continuously incorporating new technologies into its services (Bhagat et al., 2025).

SBI has initiated various practices to reduce its environmental impact, including promoting digital banking, incorporating solar energy at branches and ATMs, and offering environmentally friendly banking services such as green loans, deposits, mortgages, credit cards, and checking current accounts (Kubus et al., 2020). Additionally, they offer online and mobile banking services, as well as loans for environmentally friendly projects (Thapliyal et al., 2025).

This demonstrates SBI's commitment to sustainability and recognition of banks' ability to support a greener economy (Aslam et al., 2025). SBI became a pioneer in India by launching GB initiatives and implementing the GB Policy in 2007, as well as green channels to promote environmental sustainability (Karthikeyan, 2025). The institution is making strides toward becoming a green bank by offering services such as electronic banking, self-service kiosks, and eco-friendly debit and credit cards, such as Vishwa Yatra cards, Ez Pay Cards, and Smart Payout Cards (Jain, 2025).

Customer awareness is a crucial factor that influences the adoption of environmentally friendly banking services. It comprises a customer's understanding of GB's purpose, benefits, and specific bank offerings (Jain et al., 2025). Increased awareness can lead to higher acceptance and utilization of these services, which is essential for achieving sustainability goals.

While SBI has made efforts to encourage GB, there is a lack of research on how aware customers in certain regions, such as Malabar, are of these initiatives. Comprehending customers' perceptions is crucial for banks to effectively enhance their eco-friendly initiatives and ensure that they resonate with the preferences of their target market (Rocha et al., 2025).

### *Problem Statement*

The problem statement explores the relationship between customer awareness and the adoption of green banking services at the State Bank of India (SBI) in the Malabar region. It aims to understand how awareness of green banking influences customers' decisions to use services like green loans and sustainable financial products (Aslam & Jawaid, 2025).

The study seeks to identify challenges and opportunities in promoting green banking practices among SBI customers in this region. (Aslam et al., 2025) However, despite their importance for sustainability, there is an evident lack of understanding regarding customer awareness and usage rates of eco-friendly banking services in specific geographical locations, particularly in the Malabar region.

This study addresses this gap by investigating the connection between customer awareness and the adoption of SBI's environmentally friendly banking services among Malabar customers. Further investigation is necessary to understand the motivations behind customers' opinions and acceptance of ecologically friendly banking services. This research will contribute to the existing understanding of sustainable banking practices and provide actionable recommendations to SBI for enhancing the effectiveness of its GB initiatives and boosting customer engagement.

#### *Significance of the Study*

The current study has the potential to contribute to the understanding and enhancement of GB practices at the SBI in the Malabar region. This study examines several key factors as environmental sustainability becomes increasingly important in the banking sector. The level of awareness among customers regarding GBS is crucial for SBI to design effective marketing strategies.

This study aims to identify the key factors that influence customers' perceptions and choices of eco-friendly banking products. Assessing the perceived efficiency and excellence of SBI's environmentally friendly banking services will provide a valuable understanding of customer contentment and service quality.

This information is crucial for the persistent improvement of service options. Gaining insight into customers' opinions on GB practices will help SBI determine how customers view its efforts. The findings from this study will not only benefit SBI but also support broader efforts to promote sustainable banking in India. Enhancing customer participation in eco-friendly banking is crucial in supporting national and global sustainability goals, as banks must finance environmentally friendly projects.

#### *Research Questions*

The research questions of the current study are addressed as follows:

- What is the level of GBS awareness among customers provided by the SBI in the Malabar region?
- Which factors influence the perceptions of customers and the adoption of GBS in the Malabar area?
- How do consumers perceive the efficiency and quality of GBS provided by SBI in the Malabar region?
- What are the perceptions and attitudes of customers toward SBI's GB initiatives?
- What is the relationship between GB products and services provided by SBI and the level of customer adoption for those banking amenities?

This approach aligns with the recommendations of Gupta et al. (2018), who emphasize the importance of verifiable claims about AI systems' behavior and impact to build trust and accountability (Gupta et al., 2018).

#### *Study Objectives*

The primary purpose of this research is to discover the associations between customer awareness and acceptance of GBS at the SBI in the Malabar region. The key objectives are described as follows:

- To evaluate the awareness among customers regarding GBS offered by the SBI in the Malabar region.
- To identify the factors that influence customer perception and adoption of GBS.
- To measure the perceived quality and efficacy of GBS provided by SBI in the Malabar region.
- To assess customers' perceptions and attitudes toward the GB practices of SBI.
- To explore the relationships among green banking products and services offered by SBI and the level of customer adoption of those banking amenities.

#### *Paper Organizations*

The proposed study is organized in a structured manner. The introduction describes an outline of the GBS of SBI in the Malabar region. Section 1 also describes the problem statement, research significance, objectives, and hypotheses. Section 2 reviews the existing studies and their drawbacks. Section 3 describes the methodology adopted for the data collection and analysis of the current research.

## CHALLENGES AND FUTURE DIRECTIONS

The conjectural outline for exploring the relationship between customer awareness and adoption of green banking services at the State Bank of India in the Malabar region could be grounded in several key concepts. Firstly, it could draw from the Theory of Change, which evaluates how external factors like environmental pressures, legal frameworks, and social pressures influence the adoption of green banking practices. Additionally, the framework might incorporate elements of Institutional Theory, which examines how organizational determinants affect the adoption of green banking.

Studies on green banking awareness and its association with green attitudes could also inform the relationship between customer awareness and adoption, highlighting the importance of customer education and environmental consciousness. Furthermore, the framework could consider the role of Green Banking Practices in enhancing customer satisfaction and environmental sustainability. By integrating these theories, the framework would provide a comprehensive understanding of how customer awareness impacts the adoption of green banking services in the context of SBI in the Malabar region.

### *Literature Review*

GB refers to practices and guidelines that aim to ensure that banks are environmentally, economically, and socially sustainable by promoting eco-friendly initiatives and reducing their carbon footprint in their operations. SBI was the first in India to champion GB by implementing GB policies and backing environmental initiatives.

Conventional research (Bholane, 2025) has investigated customers' awareness of GBS in SBI in the Thirunelveli district. The data were collected from 80 SBI customers in that district via a primary data collection approach. Furthermore, the respondents were chosen through a convenience sampling technique for the research. Weighted average and simple percentage techniques were utilized to evaluate the data. The results revealed that most customers were familiar with the Cash Deposit Machine (CDM), which allows for mini statements, pin changes, withdrawals, and deposits. Afterwards, the customer becomes aware of the Automatic Teller Machine (ATM), followed by online and mobile banking.

A traditional study (Joseph & Rakesh, 2025) examined the degree and dimensions of customer mindfulness toward GBS among commercial banks in Kerala. Both primary and secondary data collection techniques were utilized. Districts such as Kannur and Kozhikode from the north, Ernakulam and Idukki from central Kerala, and Alappuzha and Thiruvananthapuram from southern Kerala have been considered. Among the 1481 public (IOB, Canara, and SBI) and private (HDFC, South Indian Bank, and Federal Bank) sector bank branches, 150 were chosen randomly for the research.

Three hundred bank customers were selected as respondents using Cochran's formula. The results revealed that customers have a low level of awareness about the GBS of commercial banks in Kerala. Customers were highly aware of GBS, such as electronic fund transfers, debit cards, internet banking, and ATMs. On the other hand, customers' awareness of solar ATMs and RTGSs was very low.

The prevailing research (Raman et al., 2025) examines customers' perceptions, awareness, and attitudes toward SBIs' GBS in southern Kerala. Furthermore, factors influencing customers' adoption of GBS and satisfaction level are analyzed. This research utilized k primary and secondary data collection techniques. The primary data, including customer knowledge and attitudes, were gathered from 200 customers from various branches of knowledge that people know about SBI's green banking products through family and friends, magazines, advertisements on social media, and bank officials.

Furthermore, the main barriers to not assessing GBS are unawareness, lack of knowledge, complexity, and access concerns. Many respondents were highly satisfied with the GBS offered by SBI in southern Kerala. Additionally, the results revealed that cost savings, time savings, 24X7 access, physical security, minimal paper work, a clean and hygienic bank environment, the utilization of solar power, the installation of energy-saving

equipment, contributions to environmental sustainability, and the reduction of  $[[CO]]_2$ , air pollution, and the carbon footprint are benefits of GB practices.

A previous study (Patil & Kanade, 2025) scrutinized customers' usage and information sources regarding their awareness of GB products in the Thiruvananthapuram district. Additionally, it assessed the views of selected customers regarding GB practices in the district. The data were collected from 90 participants in the Thiruvananthapuram district of Kerala. The results revealed that bank clients have a good understanding of GB offerings.

Insufficient understanding of GB product processes leads to operating system problems in GBS for customers. Banks do not effectively communicate the benefits of GBs to their customers, and their information could be misused.

### *Research Gap*

However, prior studies have attempted to address customer awareness and decisions regarding the GB products and services of SBI in the Malabar region. They could explore how SBI's green initiatives, such as green bonds and renewable energy loans, influence customer behavior. It could examine customer perceptions and satisfaction with green banking products to identify barriers to adoption.

Strategies such as rewards, simplified loan processes, and targeted advertising can enhance customer engagement. SBI's ESG integration and carbon reduction efforts could impact customer awareness and adoption. By understanding these dynamics, SBI can tailor its initiatives to meet customer needs and support sustainable development, which are as follows:

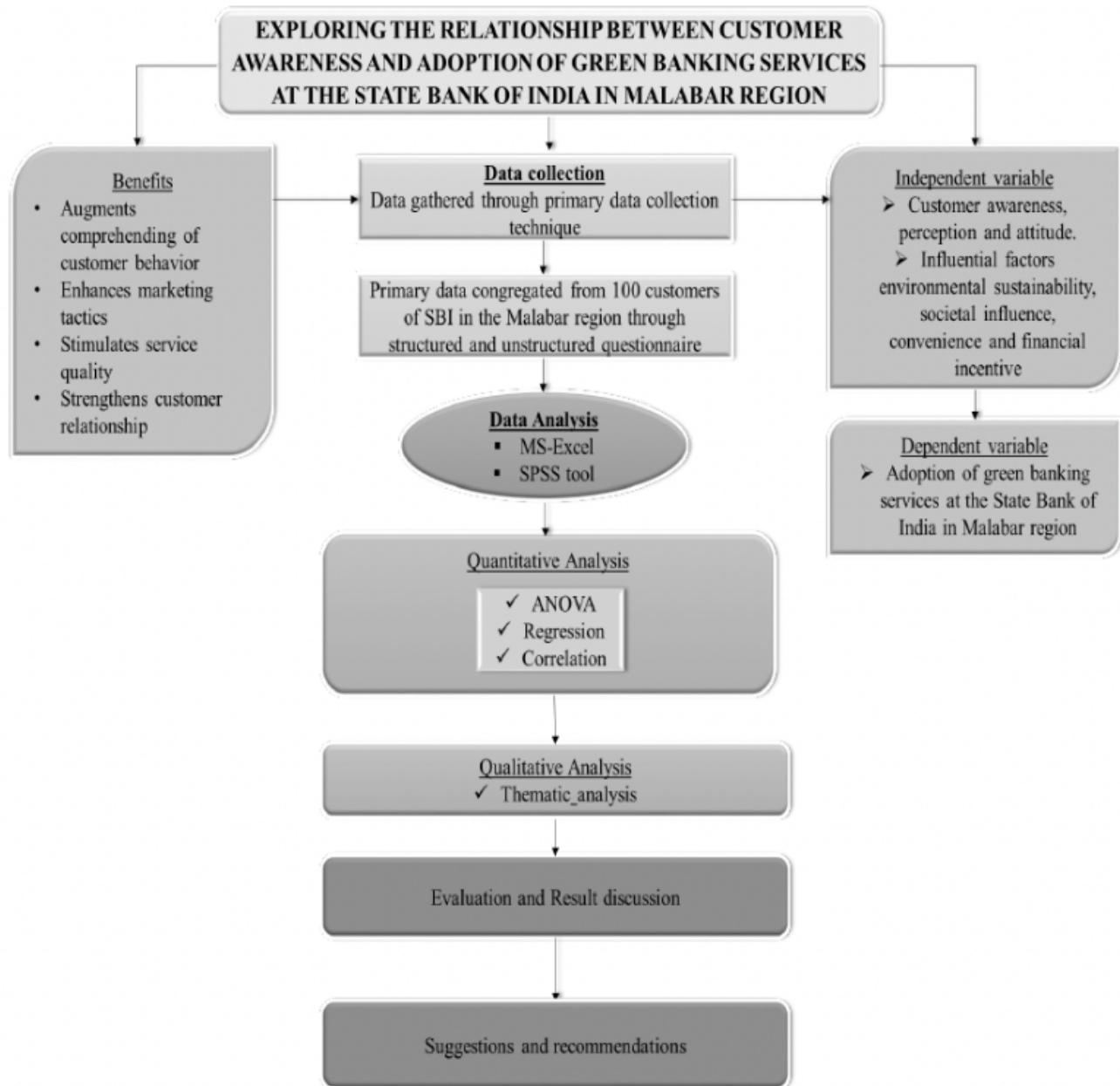
- For example, Kwilinski, Lyulyov, and Pimonenko (2025) disregarded the aspect of the mixed-methods research technique.
- Research (Joseph & Rakesh, 2025) has ignored the influential factors that cause customers to adopt the GBS of SBI.
- Overlooked the relationship between GB products and services provided by SBI and customer adherence to those banking amenities (Bholane, 2025).

Therefore, there is a scope to extend the research in these aspects, as these features can support banks in attaining customer loyalty and satisfaction. Only a few studies have focused on the Kerala and Malabar areas. Thus, the current research explores customer awareness and usage of GB products and services in Malabar.

### *Research Design*

The current study employs an empirical and descriptive research design. It embraces a mixed-methods technique, which involves quantitative and qualitative approaches for collecting and analyzing the data. The mixed methods approach allows comprehensive data collection and provides a more nuanced understanding of multifaceted research questions (Flick & Creamer, 2025).

The combination of both methods enables the data to be triangulated, ensuring accurate results. The mixed-methods technique is valuable because it addresses complex concerns in multifaceted research designs. It permits more robust and rigorous analysis and provides more precise and valid research outcomes (Younas et al., 2025). Due to its significant features, the proposed study employs a mixed-methods approach to analyze the relationships between customer awareness and the adoption of GBS at SBI in the Malabar region.



**Figure 1**  
Research Design  
Own elaboration.

Figure 1 shows the research flow of the proposed study. A mixed-method approach was adopted. The data were collected through a primary data collection technique from 100 SBI customers in the Malabar region using both structured and unstructured questionnaires. The study has been conducted in the Malabar region. Assessing for bias, the use of mixed methods can reduce bias by triangulating findings, but potential biases could arise from the sampling selection of only 100 customers and the subjective nature of thematic analysis.

Additionally, relying on customer perceptions may introduce biases related to personal experiences and varying awareness levels. Concurrently, the reasons for adopting the GBS of SBI were detected through customer awareness, influential factors, and perceptions. The following section examines the research hypotheses. Afterward, the gathered data are analyzed through both qualitative and quantitative methods.

The qualitative data are analyzed with thematic analysis, and the quantitative data are analyzed using statistical techniques such as one-sample t-tests, ANOVA, and correlation. Ultimately, the results of the current research are presented and discussed. Based on the results, relevant suggestions and future directions are provided.

#### *Study Area*

The proposed research focuses on Kerala and Malappuram as its study areas. It considers people from these areas to congregate data. This approach will increase the significance of the research objectives. Additionally, it simplified the data collection process.

Characterizing the regions of Kerala and Malappuram can provide valuable insights into the study's generalizability. Kerala is known for its high literacy rates and socio-economic indicators, often compared to Scandinavian countries, despite having a sub-replacement-level fertility rate. It has a diverse population, comprising both significant urban and rural areas, which offers a broad demographic spectrum for research.

Malappuram, specifically, is a district in Kerala with notable demographic features. It has a high population growth rate, ranking among the fastest-growing urban areas globally. The district has a majority Muslim population (70.24%) and a minority Hindu population (27.60%). Malappuram's urban population grew significantly from 3 lakh in 2001 to 16 lakh in 2011, indicating rapid urbanization 4. The district has a high literacy rate of 93.55% and a favorable sex ratio, with a slight advantage for females. These characteristics suggest that research findings might be influenced by the region's unique cultural, religious, and socio-economic factors, potentially limiting generalizability to other regions with different demographics.

#### *Sampling Techniques*

The sampling methods are significant for deriving definitive data from the population. The precise selection of sample size is necessary to enhance the reliability of research results. The current study employs a stratified sampling technique to select relevant samples from the entire population, Specifically Customers of SBI in the Malabar region.

The stratified sampling technique divides a group into similar subsets that are more homogeneous than the population (Verma et al., 2025). The sample is derived from each more homogeneous stratum; hence, precise results are attained from each stratum. The stratified sampling approach is more reliable than any other sampling technique. Thus, the present research utilizes this technique to extract appropriate samples from the entire population.

#### *Research instruments*

The proposed research collected responses from the participants through both structured and unstructured questionnaires. A questionnaire is the most straightforward technique among various research instruments, such as in-depth interviews and direct interviews. The data were collected from SBI customers based on their observations, practices, and experiences with GBS in the SBI Malabar region.

#### *Data collection*

The current study collects data from respondents through a primary data collection method. The data gathered through this approach is regarded as reliable because they are directly collected from the selected respondents. Primary data provides detailed and context-centric insights, increasing the credibility and validity of the research results. Owing to its significant aspects, the proposed research adopts a primary data collection technique to collect data from a total of 100 SBI customers about GB products and services in the Malabar region.

#### *Data analysis*

The proposed research includes a rigorous and systematic analysis of both numerical and textual data in the data analysis procedure. It is conducted to achieve beneficial insights and attract robust outcomes. The quantitative data comprises numerical data, and the quantitative analysis implements statistical, mathematical, and computational techniques (Permatasari et al., 2025).

The outcomes of the quantitative investigation are illustrated numerically. The collected numerical information is loaded into MS Excel to ensure that the study variables are selected. Afterwards, the data are transferred from Microsoft Excel to SPSS for data analysis. Various statistical techniques, such as regression, correlation, and ANOVA, are used to analyze the collected data.

In addition, the qualitative data has undergone thematic investigation to identify patterns and concepts in the textual data. It allows us to gain a detailed understanding of the experiences and perceptions of respondents. To investigate the data, the following steps are performed: data familiarization, initial code generation, theme creation from codes, review of themes, definition of themes, and report writing.

In the data coding step, the data are coded manually by assigning initial codes to each response following the research questions and objectives. In the theme creation step, the data are consolidated by detecting significant insights, patterns, and themes. Furthermore, the data are amalgamated via the recognition of associations among patterns and themes. Moreover, the key themes and patterns are detected, and the underlying meaning and implications are analyzed. The final step is data presentation, in which the findings are presented clearly and concisely. Through these steps, the current study aims to provide a comprehensive understanding of the relationships between customer awareness and the adoption of GBS at SBI.

#### *Ethical Consideration*

The current research adhered to several principles prior to the commencement of the data collection process. The primary data were collected by obtaining informed consent from the respondents who took part in the survey. Demographic details, including age, gender, qualifications, and other personal information, were collected from the respondents. The collected data are strictly for academic purposes and will be kept confidential. Moreover, the ethical consideration process ensures the validity and reliability of the data collection and study outcomes.

## RESULTS

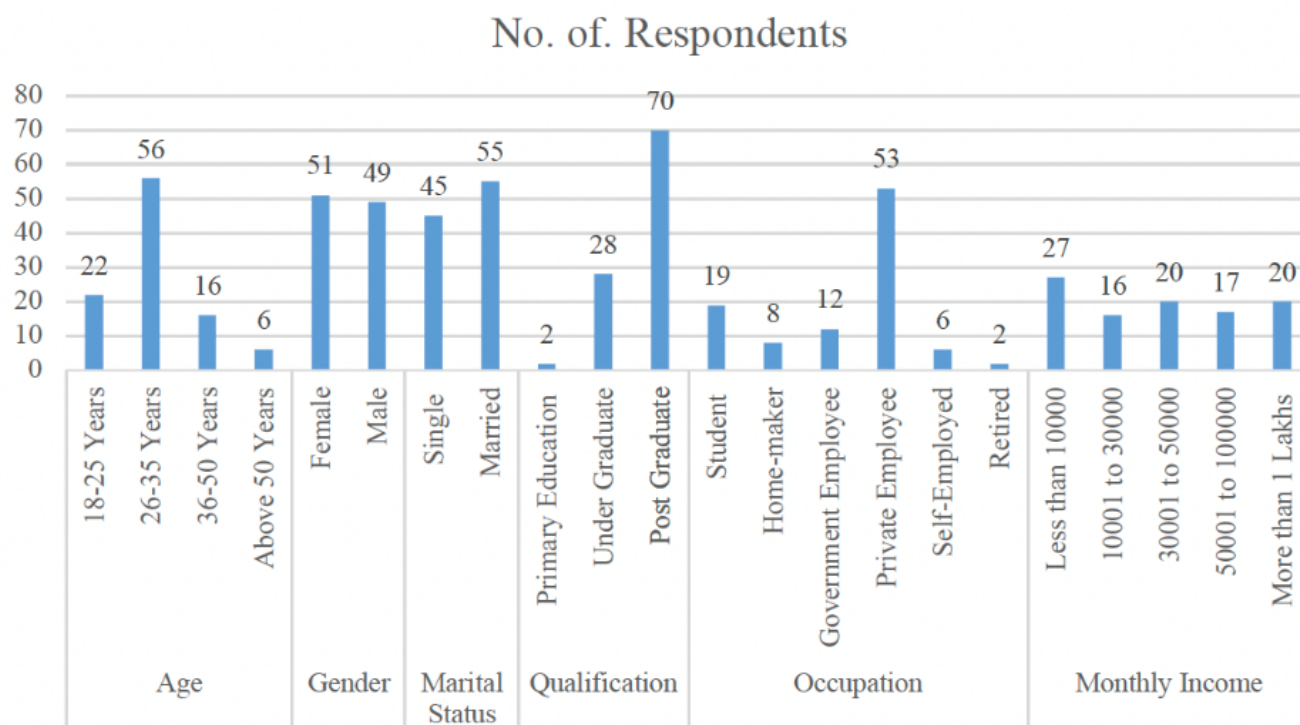
#### *Demographic analysis*

The present research involves 100 SBI customers in Malappuram, Kerala, as respondents. The demographic information of the participants is presented in Table 1.

**Table 1**  
Demographic Information

| <i>Demographic Factor</i> | <i>Parameter</i>    | <i>No. of Respondents</i> | <i>Percentage (%)</i> |
|---------------------------|---------------------|---------------------------|-----------------------|
| <i>Age</i>                | 18-25 Years         | 22                        | 22%                   |
|                           | 26-35 Years         | 56                        | 56%                   |
|                           | 36-50 Years         | 16                        | 16%                   |
|                           | Above 50 Years      | 6                         | 6%                    |
| <i>Gender</i>             | Female              | 51                        | 51%                   |
|                           | Male                | 49                        | 49%                   |
| <i>Marital Status</i>     | Single              | 45                        | 45%                   |
|                           | Married             | 55                        | 55%                   |
| <i>Qualification</i>      | Primary Education   | 2                         | 2%                    |
|                           | Under Graduate      | 28                        | 28%                   |
|                           | Post Graduate       | 70                        | 70%                   |
|                           | Student             | 19                        | 19%                   |
| <i>Occupation</i>         | Home-maker          | 8                         | 8%                    |
|                           | Government Employee | 12                        | 12%                   |
|                           | Private Employee    | 53                        | 53%                   |
|                           | Self-Employed       | 6                         | 6%                    |
|                           | Retired             | 2                         | 2%                    |
|                           | Less than 10000     | 27                        | 27%                   |
| <i>Monthly Income</i>     | 10001 to 30000      | 16                        | 16%                   |
|                           | 30001 to 50000      | 20                        | 20%                   |
|                           | 50001 to 100000     | 17                        | 17%                   |
|                           | More than 1 Lakhs   | 20                        | 20%                   |

Own elaboration.



**Graph 1**  
Demographic Information  
Own elaboration.

Table 1 and Graph 1 present the demographic profiles of the respondents who contributed to the research survey. As per the table, the number of individuals aged 18--25 years is 22. The majority of the participants were in the 26--35 years age group. A total of 16 and 6 individuals are in the age categories of 36- 50 years and above 50 years, respectively.

The involvement of female respondents, accounting for 51, is greater in this research. Furthermore, the frequency of male participants in the survey was 49. In addition, a total of 55 respondents are married, which is higher than the number of single respondents with a frequency of 45. The number of respondents with a primary education qualification is only 2, which is lower than that of the other groups.

The majority of the respondents were qualified postgraduates, and 70 of them met this criterion. A total of 28 customers with educational backgrounds up to the level of graduation were included. This suggests that Kerala is home to highly educated individuals. A total of 19 and 8 respondents were students and homemakers, respectively, in the group. Fifty-three are working in the private sector.

The numbers of individuals who are government employees, self-employed, and retired are 12, 6, and 2, respectively. Additionally, most people in that region have incomes of less than 10,000, with a total of 27, which is higher. The frequencies of individuals with incomes ranging from \$ 10,001 to \$ 30,000 and \$ 30,001 to \$ 50,000 are 16 and 20, respectively. The sum of 17 and 20 customers' earnings fall in the range of ₹ 5001-- ₹ 10000 and above ₹ 1 lakh, respectively. This demographic analysis revealed the diverse characteristics of SBI customers in the Malabar region who participated in the survey.

## QUANTITATIVE ANALYSIS

### *Reliability Analysis*

Tables 2 and 3 summarize the case processing and the  $C\alpha$  values of the reliability test. The attained  $C\alpha$  value of the current research variables is 0.740, indicating that all the data are acceptable. This reveals greater internal consistency within the dataset, further indicating that the proposed research is reliable within a definite sample.

**Table 2**  
Case Summary

|   |                       | N   | %     |
|---|-----------------------|-----|-------|
| C | V                     | 100 | 100.0 |
|   | Excluded <sup>a</sup> | 0   | .0    |
|   | T                     | 100 | 100.0 |

Own elaboration.

**Table 3**  
Reliability Statistics

| $C\alpha$ | N  |
|-----------|----|
| .740      | 24 |

Own elaboration.

#### One-Sample Test

H<sub>1</sub>1: Customers have a significantly high level of awareness of SBI's GBS in the Malabar region.

H<sub>0</sub>1: Customers have no significant level of awareness of SBI's GBS in the Malabar region

**Table 4**  
One-Sample Statistics

|                                                                      | N   | M    | SD    | SEM  |
|----------------------------------------------------------------------|-----|------|-------|------|
| The level of your awareness about the GBS offered by SBI.            | 100 | 2.86 | 1.073 | .107 |
| How often do you receive information about SBI's GB initiatives?     | 100 | 2.66 | 1.066 | .107 |
| GBS are important for augmenting environmental sustainability.       | 100 | 4.10 | .798  | .080 |
| SBI effectively communicates regarding their GBS to their customers. | 100 | 3.62 | .962  | .096 |

Own elaboration.

**Table 5**  
One-Sample Test

|                                                                      | Test Value = 2 |    |                 |              |                                           |       |
|----------------------------------------------------------------------|----------------|----|-----------------|--------------|-------------------------------------------|-------|
|                                                                      | t              | df | Sig. (2-tailed) | M Difference | 95% Confidence Interval of the Difference |       |
|                                                                      |                |    |                 |              | Lower                                     | Upper |
| The level of your awareness about the GBS offered by SBI.            | 8.013          | 99 | .000            | .860         | .65                                       | 1.07  |
| How often do you receive information about SBI's GB initiatives?     | 6.193          | 99 | .000            | .660         | .45                                       | .87   |
| GBS are important for augmenting environmental sustainability.       | 26.325         | 99 | .000            | 2.100        | 1.94                                      | 2.26  |
| SBI effectively communicates regarding their GBS to their customers. | 16.845         | 99 | .000            | 1.620        | 1.43                                      | 1.81  |

Own elaboration.

Tables 4 and 5 present the results of the one-sample t-test. The tables represent customers' awareness of GBS in SBI in the Malabar region. The achieved p-value is 0.00, which is below the threshold value of 0.05. The results reveal that customers are aware of SBI's eco-friendly banking services, greatly appreciate the significance of these services for environmental sustainability, and have a favorable view of SBI's communication strategies, suggesting areas for enhancement.

The impressive statistical results for all the measures show a favorable response to SBI's environmentally friendly initiatives, which can be used to increase customer engagement and usage by improving communication strategies and running educational promotions about the available services. The results of a one-sample t-test verify that customers have a significantly high level of awareness of SBI's GBS in the Malabar region. Therefore, the first hypothesis is accepted, and the null hypothesis is rejected.

#### ANOVA Test

H<sub>12</sub>: Factors such as environmental sustainability, societal influence, convenience, and financial incentives significantly impact customer perceptions and adoption of GBS.

H<sub>02</sub>: Factors such as environmental sustainability, societal influence, convenience, and financial incentives do not significantly impact customer perception and enactment of GBS.

**Table 6**  
ANOVA

|                                                                                                               |                     | Sum of Sq | df | M Sq  | F     | Sig. |
|---------------------------------------------------------------------------------------------------------------|---------------------|-----------|----|-------|-------|------|
| The optimistic contribution of GBS toward environmental sustainability makes people to adopt these amenities. | Between Groups (BG) | 4.028     | 3  | 1.343 | 3.645 | .015 |
|                                                                                                               | Within Groups (WG)  | 35.362    | 96 | .368  |       |      |
|                                                                                                               | T                   | 39.390    | 99 |       |       |      |
| Societal influence, the opinion of friends and family influences the decision of individual to adopt GBS.     | BG                  | 5.428     | 3  | 1.809 | 4.417 | .006 |
|                                                                                                               | WG                  | 39.322    | 96 | .410  |       |      |
|                                                                                                               | T                   | 44.750    | 99 |       |       |      |
| The convenience offered by SBI GBS impacts people to adopt GBS.                                               | BG                  | 6.503     | 3  | 2.168 | 6.403 | .001 |
|                                                                                                               | WG                  | 32.497    | 96 | .339  |       |      |
|                                                                                                               | T                   | 39.000    | 99 |       |       |      |
| Financial incentives such as lower fees, better interest rates of SBI motivates public to use GBS.            | BG                  | 6.638     | 3  | 2.213 | 4.872 | .003 |
|                                                                                                               | WG                  | 43.602    | 96 | .454  |       |      |
|                                                                                                               | T                   | 50.240    | 99 |       |       |      |

Own elaboration.

Table 6 shows the results of the ANOVA used to identify the factors that impact customer perceptions of and approval from GBS. Factors such as environmental sustainability, societal influence, convenience, and financial incentives are considered independent variables. Customer perception and adoption of GBS are regarded as dependent variables.

The achieved p-value is less than the threshold value of 0.05. Financial incentives such as better interest rates and lower fees encourage customers to adopt these services. The words of family and friends also influence people to embrace GBS. Moreover, the convenience and contribution of SBI to the environment influence individuals' opinions of adopting SBI's GBS.

The ANOVA confirmed that factors such as environmental sustainability, societal influence, convenience, and financial incentives significantly impact customer perceptions and acceptance of GBS. Thus, the second hypothesis is accepted, and the null hypothesis is ignored.

#### Correlation Test

H<sub>13</sub>: There is a positive relationship between GB products and services offered by SBI and the level of customer adoption of those banking amenities.

H<sub>03</sub>: There is a negative relationship between GB products and services offered by SBI and the level of customer adoption of those banking amenities.

**Table 7**  
Correlations

|                                                                                                  |                                                           | The level of your awareness about the GBS offered by SBI. | SBI's green deposits influence my choice to bank with them over other banks. | Using SBI's green credit cards makes me feel that I am contributing to environmental protection. | The green practices of SBI like green loans is an important aspect of its social responsibility and these initiatives are genuine. | The optimistic contribution of GBS toward environmental sustainability makes people to adopt these amenities. | Societal influence, the opinion of friends and family influences the decision of individual to adopt GBS. |     |
|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-----|
|                                                                                                  | The level of your awareness about the GBS offered by SBI. | Pearson Correlation (PC)                                  | 1                                                                            | .223 *                                                                                           | .392 **                                                                                                                            | .385 **                                                                                                       | .278 **                                                                                                   | .32 |
| SBI's green deposits influence my choice to bank with them over other banks.                     | PC                                                        | .223 *                                                    | 1                                                                            | .498 **                                                                                          | .569 **                                                                                                                            | .304 **                                                                                                       | .220 *                                                                                                    | .45 |
|                                                                                                  | Sig                                                       | 0.026                                                     |                                                                              | 0                                                                                                | 0                                                                                                                                  | 0.002                                                                                                         | 0.028                                                                                                     | 0   |
| Using SBI's green credit cards makes me feel that I am contributing to environmental protection. | PC                                                        | .392 **                                                   | .498 **                                                                      | 1                                                                                                | .598 **                                                                                                                            | .258 **                                                                                                       | .423 **                                                                                                   | .28 |
|                                                                                                  | Sig                                                       | 0                                                         | 0                                                                            |                                                                                                  | 0                                                                                                                                  | 0.01                                                                                                          | 0                                                                                                         | 0.0 |

The green practices of SBI like green loans is an important aspect of its social responsibility and these initiatives are genuine.

|      |        |        |        |   |        |        |     |
|------|--------|--------|--------|---|--------|--------|-----|
| PC   | .385** | .569** | .598** | 1 | .299** | .344** | .40 |
| Sig) | 0      | 0      | 0      |   | 0.003  | 0      | 0   |

The optimistic contribution of GBS toward environmental sustainability makes people to adopt these amenities.

|     |        |        |        |        |   |        |     |
|-----|--------|--------|--------|--------|---|--------|-----|
| PC  | .278** | .304** | .258** | .299** | 1 | .482** | .51 |
| Sig | 0.005  | 0.002  | 0.01   | 0.003  |   | 0      | 0   |

Societal influence, the opinion of friends and family influences the decision of individual to adopts GBS.

|     |        |       |        |        |        |   |     |
|-----|--------|-------|--------|--------|--------|---|-----|
| PC  | .329** | .220* | .423** | .344** | .482** | 1 | .37 |
| Sig | 0.001  | 0.028 | 0      | 0      | 0      |   | 0   |

The convenience offered by SBI GBS impacts people to adopt GBS.

|     |        |        |        |        |        |        |   |
|-----|--------|--------|--------|--------|--------|--------|---|
| PC  | .303** | .451** | .287** | .401** | .518** | .371** | 1 |
| Sig | 0.002  | 0      | 0.004  | 0      | 0      | 0      |   |

Financial incentives such as lower fees, better interest rates of SBI motivates public to use GBS.

|     |        |       |        |        |        |        |     |
|-----|--------|-------|--------|--------|--------|--------|-----|
| PC  | .388** | .242* | .383** | .276** | .504** | .654** | .56 |
| Sig | 0      | 0.015 | 0      | 0.005  | 0      | 0      | 0   |

Own elaboration.

Table 7 illustrates the outcome of the correlation analysis to determine the associations among the customer adoption level and SBI's GB products and services. The achieved p-value is lower than the significance value of 0.05. Furthermore, the correlation value is 1 (positive), indicating that customer acquisition and GBS at SBI are positively associated.

Customers in the Malabar region highly adopt SBI GB amenities, which makes them feel socially responsible and contributes to the environment. The outcome of the correlation test verifies that there is a positive relationship between customer adoption and SBI GB products and services. Therefore, the third hypothesis is accepted, and the null hypothesis is ignored.

## QUALITATIVE ANALYSIS

### The Perceived Quality and Efficacy of GBS Provided by SBI in the Malabar Region

The participants in the Malabar region shared their perceptions regarding the efficiency and quality of GB amenities offered by SBI. Most respondents reported that SBI GBSs are accessible and easy to handle. The convenience, customization features, and eco-friendly financing options have attracted customers toward SBI's GBS. Customers perceive that SBI provides high-security measures and high-quality services. Additionally, the SBI has facilitated paperless transactions, green bond issuance, and rigorous monitoring, all of which benefit customers in the Malabar region.

The respondents revealed their overall experience with SBI's GBS. The majority of the respondents reported that SBI provides good services, good quality, and excellent amenities. A large number of respondents felt more comfortable and convenient with the GB initiatives of SBI; these individuals also stated that green services are easy to manage. Ultimately, customers of SBI were delighted with the GBS of SBI in the Malabar region. They perceive that SBI provides quality services and is highly effective in the Malabar area.

Themes: Accessibility, Convenience, Quality of Service, Easy Access, Excellent Services, and Highly Satisfied

### Perceptions and Attitudes of Customers toward GB Practices of SBI.

The respondents shared their outlook on SBI's GB initiatives. The participants felt that these SBI services significantly saved time and cost. Many individuals have expressed that SBI GBSs are convenient and easy to access. The respondents felt satisfied with CDM services, as they reduced the need for bank visits. Many individuals consider SBI GB amenities to be flexible and eco-friendly and to have an impact on the environment. Several customers have reported that GBS has a positive impact on the environment by reducing paper usage and promoting digital transactions. A few respondents have noted that it reduces carbon footprint and waste generation. The 24\*7 services provided by SBI positively influences customers, and individuals are delighted through SBI's GBS. Overall, customers have a positive perception of SBI's GB practices.

Themes: Flexible, convenient, eco-friendly, save time and cost, easy banking, and environmental contributions

## DISCUSSION

The inference of the proposed study was drawn from the analysis of the data collected from the respondents. The outcome of the present research confirmed that customers in the Malabar region are significantly aware of the GBS provided by the SBI. The results of the ANOVA test confirmed that societal influence, incentives, environmental sustainability, and convenience of SBI's GBS have significantly influenced their decisions to adopt these amenities.

The correlation analysis revealed a positive association between customer endorsement and GBS. Customer awareness of GBS also plays a role in the adoption of these services. Regarding the GBS offered by SBI, the SBI is effective. Most customers consider SBI's GBS to be accessible and convenient. Moreover, customers are

delighted with the quality and service of SBI's GB products. The participants had positive perceptions and attitudes toward the GB products and services of SBI. Customers were positively influenced by the 24\*7, flexible, and eco-friendly services provided by SBI.

The proposed study conducted (Abazi-Alili et al., 2025) on the environmental, social, and governance framework theory has been done on the relationship between customer awareness and adoption of green banking services at the State Bank of India (SBI) in the Malabar region can be theoretically grounded in frameworks that emphasize environmental, social, and governance (ESG) factors.

Studies like those on green banking strategies highlight the importance of stakeholder pressures, including environmental concerns and regulatory policies, in driving sustainable banking practices. The theory of change can be applied to understand how inputs, such as customer awareness, influence outcomes like the adoption of green banking services (Mandagie et al., 2025).

In discussing the results, the study could explore the environmental awareness theory of how customer awareness acts as a crucial input factor, potentially leading to increased adoption of green banking services. This aligns with findings that customer-related practices have a positive impact on green environment performance.

The results might show that higher customer awareness correlates with greater adoption of green banking services, reinforcing the need for banks to integrate environmental and social considerations into their operations, as suggested by Sustainability Theory. Ultimately, the study's findings can inform strategies for enhancing customer awareness and promoting the adoption of green banking, thereby contributing to broader sustainability goals (Aslam & Jawaid, 2025).

The conventional study (Hussain & Pareek, 2025) has analyzed the various green products and services offered by SBI and their benefits to customers. Furthermore, this study investigated the level of customer awareness and satisfaction with GBS in SBI. The outcomes revealed that most individuals are aware of and delighted with the SBI's GB initiatives. The results also revealed that, through SBI's GBS, customers significantly saved time and cost. Similarly, the current study also scrutinized the awareness level of customers. The outcomes revealed that customers are highly aware of the GBS provided by SBI in the Malabar area. In addition, the proposed study also detected influential factors, such as customer perceptions and attitudes, and, finally, the relationships between user adoption and SBI GB amenities.

Previous research (Ye & Tian, 2025) has examined customers' perceptions and awareness levels of SBI's green banking services in southern Kerala. In addition, the influential factors for adopting these services and their satisfaction level are scrutinized. The results revealed that most customers were aware of GB services and that awareness was gained through family and friends, social media, and advertisements. Furthermore, customers tend to show higher satisfaction with these amenities.

Similarly, the proposed research analyzes customer awareness of GBS and the factors influencing customers' adoption of these amenities. Additionally, it determines the quality and efficacy of SBI's green products and services, as well as customer perceptions and attitudes toward these services.

The results revealed that customers are highly aware of and satisfied with the SBI's GBS in Kerala, Malabar region. The outcome also revealed that society's influence, convenience, eco-friendliness, and time savings influence customers' adoption of these services. The current study scrutinizes important aspects in a more comprehensive way than conventional studies do. Furthermore, the present study effectively serves this purpose.

#### Limitations of the Study

The current study has several limitations, including a small sample size. Furthermore, it concentrates only on the Malabar region, a specific geographic area in Kerala, India, which may reduce the generalizability of the research results.

The present research considers only the GBS offered by SBI, which limits a comprehensive understanding of that landscape. However, the inference in the research will benefit banks in enhancing GB initiatives and strengthening customer relationships.

#### Theoretical implications

The contribution of the theoretical understanding of green banking is analyzed by examining the impact of customer awareness on the adoption of green banking services at the State Bank of India in the Malabar region. It builds upon existing frameworks such as the Theory of Planned Behavior, which suggests that attitudes and perceived behavioral control influence behavioral intentions, and Social Exchange Theory, which posits that customers engage in behaviors based on perceived benefits.

The study also aligns with the Expectancy Disconfirmation Theory, highlighting how customer expectations and perceived disconfirmation influence satisfaction with green banking services. By focusing on customer awareness as a key driver of green banking adoption, this research enhances our understanding of how environmental awareness and social factors influence consumer behavior in the banking sector. Additionally, it provides insights into how banks can leverage awareness campaigns to promote sustainable banking practices, thereby contributing to broader environmental sustainability goals.

#### Practical implications

The relationship between customer awareness and the adoption of green banking services at the State Bank of India in the Malabar region has several practical implications. By understanding how customer awareness influences the adoption of green banking services, SBI can tailor its marketing strategies to enhance customer education and engagement.

This could involve promoting eco-friendly lending policies, such as loans for renewable energy projects, and highlighting the environmental benefits of digital banking services like mobile banking and paperless transactions.

The study's findings can inform strategies for banks to increase customer engagement with green banking services, thereby supporting environmental sustainability goals. Additionally, it contributes to the theoretical framework of green banking by highlighting the role of customer awareness in promoting sustainable financial practices, which is crucial for achieving a carbon-neutral society.

Additionally, SBI can leverage green banking practices to improve its brand image and attract eco-conscious customers, potentially increasing its competitive advantage in the market. By investing in sustainable projects, SBI can also contribute to reducing carbon emissions and align with global sustainability goals, such as those outlined in the Paris Climate Agreement. This alignment can lead to long-term financial benefits and the creation of societal value.

## CONCLUSION

This study provides valuable insights into the impact of customer awareness on the acceptance of eco-friendly banking services at the SBI in the Malabar region. The study's outcome revealed that customers know the GBS offered by SBI in the Malabar region. Furthermore, societal influence, financial incentives, environmental concerns, convenience, and customer consciousness are the factors that cause individuals to adopt SBI GBS. Customers have a positive outlook and attitude toward SBI's services.

The implications of this study are far-reaching. SBI can increase the utilization of eco-friendly banking services by enhancing customer awareness via targeted marketing strategies and educational campaigns.

The correlation analysis revealed a significant positive association between customer adoption and SBI's green banking (GB) products and services. The p-value was below 0.05, confirming statistical significance. A correlation value of 1 indicated a strong positive relationship, supporting the hypothesis that customer acquisition and GB services are linked.

This association suggests that customers in the Malabar region adopt SBI's GB amenities, fostering a sense of social responsibility and environmental contribution. Consequently, the third hypothesis is accepted, while the null hypothesis is rejected. Ultimately, promoting a culture that prioritizes sustainability within the banking sector is essential, as this impacts not only financial institutions but also responsible consumer habits and environmental conservation.

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