

# Customers' Usage on green banking services in selected Public sector banks in Devakottai Taluk

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DOI: <https://doi.org/10.5281/zenodo.18767853>

Published Date: 25-February-2026

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**Abstract:** By substituting electronic devices for paper in routine financial operations, green banking aims to simplify banking transactions and reduce the need for paper records. The industry, banks, and economy will all gain from this "Green Banking" strategy. "Green Banking" will not only guarantee the sustainability of industries, but it will also aid banks in enhancing the quality of their assets going forward. In many facets of business, the "Go Green" idea has gained significance in today's ecologically aware society. Examining how customers use green banking features in specific public sector banks in the Devakottai taluk is the main goal of the study.

**Keywords:** Green banking, customer satisfaction, banking services and products, Go Green etc.

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## 1. INTRODUCTION

### 1.1 Introduction:

Following the liberalization and deregulation of the nation, India's banking sector has seen significant transformation. A paradigm shift in banking operations has been brought about by the rapid advancement of technology and the aggressive integration of information technology. Technology has become a vital tool for banks to boost productivity, profitability, operational control, and efficiency. It is the fulfillment of consumers' banking aspirations to bank "Anywhere, Anytime, Anyway." This has prompted banks to use technological advances in order to meet the increasing demands of their customers (Jeena 2015). Technology was first used to facilitate business, but it has now developed into a commercial engine. Information technology is essential to banking institutions' ability to deliver financial products, whether for customer service, transactions, remittance audits, branding, pricing, or any other aspect of the business. Information technology is not only crucial for efficiently accomplishing tasks, but it also has the ability to grow and meet new demands. Information technology has therefore brought forth novel models of business and is increasingly contributing significantly to the improvement of financial services (Sarma & Roy 2021). Given the above, it is essential to take into account the growth of technological advances in banks before delving into the many features of green-banking. Information technology entered the banking business as early as the 1980s, according to the Rangarajan Committee suggestions that and banks have prioritised technology throughout the following 25 years. Since the 1980s, the Reserve Bank of India has been urging banks to use computerization at the level of the branches and to enhance the standard of service to clients employing technology (Abirami K, 2018).

Green banking might play an essential role in attaining long-term growth. Green banking reduces paper use by depending on online or the electronic transactions for handing out. Green banking has become more essential in many facets of business (Munisha 2013). Green banking is made up of two parts. The first is to make sensible use of all resources, save energy, and minimize the impact of carbon emissions, while the additional goal is to encourage and fund only ecologically responsible

investment (Neyati 2015). Green banking therefore is concerned not just with resource sustainability, but also with credit distribution that is ecologically benign. In India, the majority of people live in rural, are illiterate, and are unaware of green banking services (Shrutigarg 2015). Although some consumers are aware of green banking services and product, they are unaware of the benefits of ecologic banking. The majority of individuals solely use traditional banking. As a result, it is imperative that banks educate their clients about green goods and services (Neetu et al 2015). It is also the responsibility of the government to encourage the general public to adopt green banking practices the demand for sustainability in the banking industry in this rapidly varying environment gives a competitive advantage that benefits the merchant banker and the buyer (Ritu 2014). Customers are particularly interested in products and services that are environmentally friendly including eco-friendly loans, automated teller machines, mobile phones for online banking, sustainable deposit accounts, eco-conscious credit cards, and so on (Vikasnath et al.,2014).

The banking business has changed dramatically in recent years. The primary responsibility of bank personnel is to deliver excellent information (uniform across all branches along with direct access methods such as ATMs, Mobile Banking, along with Internet Banking) to the branch at the customer's fingertips (Mahfuzur 2016). Customers can make money transactions using a secure website hosted by their bank using online banking (or Internet banking). Customers can access e-banking services over the Internet as well as the web by utilizing Hypertext Markup Language (HTML) (Sahoo et al.,2018).

### **Relevance of Green Banking**

Enterprises are increasingly interested in developing and executing solutions to solve environmental challenges while simultaneously pursuing new possibilities (Risal & Joshi 2018). While there are many reasons to go green, the following are the most significant ones: increasing energy expenses and usage; heightened consumer demand for sustainable products and services; escalating public anticipations concerning companies' environmental responsibilities; and the implementation of stricter legal and compliance standards

(Initiative Report 2019). In addition, companies will face the consequences of environmental issues more frequently, which will change their competitive landscape in unanticipated ways. For instance, according to Bukhari et al. (2020), investors have started to undervalue the stock of companies that don't find solutions to the environmental issues they produce. When making judgments about purchases, leases, or outsourcing, a growing number of customers consider the business's ethical policies and procedures (Sarma & Roy A 2021). A growing number of investors are funding green projects or creating and promoting green goods and services. Businesses are under increasing pressure from regulators, investors, and the public to disclose more details about their ecological impact, as well as about their environmental activities and accomplishments (Kwakwa 2023).

Consequently, companies that have the framework and foresight to develop eco-friendly goods and services will have an edge over their rivals (SDG7 2023) e. As consumers of natural resources, banks interact with the environment in the same way as any other business. While this is moderately when compared with additional carbon-sensitive industries like steel, oil and gas, and so on, banks, for example, promptly contribute to greenhouse gases in their everyday operations through their consumption of study, electrical power, air conditioning along with lighting, technological products, and other things (Esquivias et al.,2023). Since banks function as financial intermediaries for various businesses that significantly harm the environment, they have an indirect effect on the environment (Bekuma et al., 2023). It is crucial to comprehend the necessity of implementing ecologically friendly banking practices. The concept of green banking is currently gaining popularity in India, where banks are trying to figure out how to market themselves as green banks (Dhaka 2023). Financial institutions can employ green banking to promote eco-friendly banking methods in their service delivery. The financial sector should use green banking techniques to ensure that banking services don't harm the environment.

The future generation depends on green lending policies in terms of environmental conservation. Banks must reduce operating costs and transition from electric power to solar energy in order to include sustainable development standards into their financial operations. Furthermore, financial institutions should improve banking through internal green management in order to create sustainable and successful green banking. By providing green products and researching their social effects, financial institutions can contribute to the solution of environmental and social problems (Guruprasad 2015). In conclusion, green banking is essential to the long-term economic success of any nation. We need to ensure global sustainability in order to protect our environment. Using the aforementioned green strategies from the study, banks are essential in protecting the ecosystem from the negative effects it is currently experiencing (Das N 2023). Additionally, the RBI must to impose strict regulations on the banking sector, requiring every bank to comply with a green banking plan. Globally, there should be support for environmental preservation from a number of organizations that were established specifically for this reason.

**1.2 Goals of the research:**

The main objective of the study is to investigate how customers in selected public-sector financial institutions (banks) in Devakottai Taluk utilize green banking services.

**1.3 Research Methodology:**

The purpose of the study was to ascertain whether customers of certain public sector banks make use of green banking services. This study evaluates the literature by combining primary and secondary data. While secondary data were obtained from sources including articles, research, books, and journals, primary data were collected directly from customers through a variety of banks.

**1.4 Sampling Technique:**

From each type of public sectors bank in devakottai will be chosen using proportional random sampling applied in the primary data gathering the least of 386 samples were gathered from the public sectors bank in the study Area. Using the formula employed by the online calculator, the sampling size was determined.

❖  $N = \frac{N}{1 + N(e)^2}$

❖ Where n=Sample size,

❖ N is the Population size, e is the Sampling of error

Which is ± 5%?

The number of samples collected in each district, as a percentage of the total, is calculated using the following formula.

$S = (n \div N) \times s$

Where,

S = Size of the sample,

n = population residing in the district,

N= Overall size of the population,

s = Determined sample size,

The demographic and the number of participant’s details from each district are displayed in Table 1.1.

**Table 1.1 Details of Population and sample size drawn**

S. No	Name of the Public sector banks in Devakottai	Total Population size considered for the study (2015-2023)	Calculation of Sample Size for each districts	Sample Size
1	Canara Bank	2343	65.96630197	66
2	SBI	3691	103.9187454	104
3	Indian Bank	4367	122.9512764	123
4	PNB	951	26.7750547	27
5	IOB	1371	38.6	39
6	IDBI	987	27.78862144	27
	<b>Total</b>	<b>13710</b>	386	<b>386</b>

Source: Data from the previously mentioned was gathered.

A total of 386 samples were gathered through the convenient sampling technique.

**1. Analysis and Interpretation of Data:**

**Table 1.1 Demographic profile of the Respondents**

<b>Gender</b>	<b>Percentage</b>
Male	63
Female	37
<b>Total</b>	<b>100</b>
<b>Age</b>	
Below 20 years	5
20 to 30 years	30
30 to 40 years	40
40 to 50 years	25
<b>Total</b>	<b>100</b>
<b>Occupation</b>	
Salaried	40
Business man	30
Farmer	20
Others	10
<b>Total</b>	<b>100</b>
<b>Income</b>	
Below Rs.10000	10
Rs. 10000 to 15000	40
Rs. 20000 to 25000	40
Above Rs. 25000	10
<b>Total</b>	<b>100</b>

**Source:** Primary data

**Interpretation:**

Sixty-three percent of the 386 responders are male clients. The remaining 37% of clients are female. As a result, male members are more likely to have bank accounts than female members.

40% of the sample participants are between the ages of 30 and 40. 30% of the population is between the ages of 20 and 30. Another 25% are between the ages of 40 and 50. As a result, a greater proportion of those contacted were in their forties and fifties.

Forty percent of the 386 responders were salaried clients. Thirty percent are in business, and the remaining 20 percent are farmers. 10 percent work in other occupations. However, a greater proportion of paid persons hold bank accounts.

Out of 386 clients contacted, the majority (80%) belonged to the Rs. 10000 to 25000 income bracket. ten percent of the customer's income generations upto Rs.10000. The majority of middle-income clients have a bank account.

**1.5 Usage of Green Banking Products by the respondents using Factor Analysis:**

By substituting electronic devices for paper in routine financial operations, green banking aims to simplify banking transactions and reduce the need for paper records. The industry, banks, and economy will all gain from this "Green Banking" strategy. "Green Banking" will not only guarantee the environmental improvement of industries, yet it will additionally help banks in enhancing the quality of their assets going forward. In many facets of business, the "Go Green" idea has gained significance in today's ecologically aware society. Banks must therefore include green practices into their facilities, investments, financing plans, and operations. Achieving sustainable development may be significantly aided by green banking. Using a Likert scale with the following options: strongly agree, agree, either agree nor disagree, disagree, and strongly disagree, the researcher listed 14 possible risk factors. Internet shopping comes with fourteen risks. To identify the similarities between the nine assertions and to classify them into groups, factor analysis was applied. To identify groups of persons who utilize green banking services, factor analysis employs the Kaiser-Mayer-Olkin (KMO) and Bartlett's tests

in addition to the principal component extraction methodology with Varimax rotation and the Kaiser Rotation method. The parameter's normality needs to be proved before grouping it. Consequently, normality was ascertained using KMO. To ascertain whether the data are appropriate for factor analysis, one might utilize the (KMO) sample adequacy indicator. Acceptable samples are indicated by KMO values between 0.8 and 1, whereas insufficient sampling is indicated by KMO values less than .6 means that there is not enough data to do a factor analysis. One statistical test used to analyze both the surface smoothness of the curve and the form of a normal distribution is the Bartlett's test of sphericity.

**Table 1.2**

<b>Usage of Green Banking - KMO and Bartlett's Test</b>		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.786
Bartlett's Test of Sphericity	Approx. Chi-Square	6325.241
	Df	4
	Sig.	.001

**Source:** Primary Data

The outcomes of the KMO with Bartlett's tests are summarized in Table 1.2. The sample size chosen for the factor analysis is appropriate, as indicated by the KMO value of .900. The data is regularly distributed and connected to one another, as indicated by the Bartlett's Test of Sphericity P value of .001.

### 1.6 Usage of Green Banking Products by the respondents -Principle Component

#### Analysis

The main component analysis was used to group the factors for green banking product adoption. It is a data reduction technique. The proportion of a given item's variation caused by a common element is referred to as communality. In a principal component analysis, the starting value of the communality is '1'. The component column includes the use of green banking products. The extraction communalities estimate the variation in each variable when the components in the factor solution are taken into consideration. If the score is less than 0.5, the variables are not correlated closely to the factor solution therefore should be removed from the study. The extraction value of using green banking products is shown in Table 1.3.

**Table 1.3 Usage of Green banking Products – Principal Component Analysis**

<b>Communalities</b>		
<b>Variables</b>	<b>Initial</b>	<b>Extraction</b>
Usage of Mobile Banking	1.000	.784
Usage of Internet Banking	1.000	.942
Usage of Online Bill Payment	1.000	.681
Usage of Online Banking	1.000	.536
Usage of Green Checking Accounts	1.000	.536
Usage of Green Cards	1.000	.654
Usage of Cash Deposit System	1.000	.645
Usage of Green Credit Cards	1.000	.821
Usage of Green Mortgages	1.000	.654
Usage of ATMs	1.000	.754

**Source:** Primary Data

The variance among the variables ranges from .500 to 0.911 in Table 1.3. It demonstrates that the twenty-two variables have a significant variation ranging from 50% to 90%. As a result, it is established that all of these factors have the ability of segmenting itself in terms of green banking market utilisation.

### 1.7 Usage of Green banking Products –Total Variance Explained

Total variance analysis is required to determine the rotating sum of square value. The rotating three components are defined by the total Eigen value, which must be larger than one. The total cumulative variance is described by the total percentage of the variation explained by each of the four maintained components. Table 1.4 shows the distinct variance of the major components that emerged from a set of ten variables.

**Table 1.4 Usage of Green banking Products –Total Variance Explained**

Total Variance Explained									
Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.090	4.542	65.346	1.090	4.542	65.346	1.294	5.392	64.751
2	1.015	4.230	69.576	1.015	4.230	69.576	1.158	4.826	69.576
3	.435	1.811	93.567						
4	.349	1.452	95.019						
5	.291	1.212	96.231						
6	.226	.941	97.172						
7	.203	.845	98.017						
8	.179	.747	98.764						
9	.130	.543	99.306						
10	.115	.478	99.784						
11	.052	.216	100.000						

Extraction Method: Principal Component Analysis.

Source: Primary Data

According to Table 1.4, the 10 variables are reduced to two dominating factors with individual variances of 64.751 and 69.576, respectively. The total of the 10 variables is 69.576 percent. The percentage of the total of the cumulative parameter is higher than the variant's benchmark of 50%. As a result, it confirms whether the factor segment is significant.

**1.8 Usage of Green banking Products – Rotated Component Matrix:**

The cumulative proportion of variations is 69.576 according to the rotational sum of square values. As a result, factorization is well suited to the causes for non-payment of agricultural credit. The importance of a rotated component matrix for the use of green banking products are explained in Table 1.5.

**Table 1.5 Usage of Environmental friendly banking products –Rotated Component Matrix**

Rotated Component matrix		
Products	1	2
Usage of Mobile Banking	.782	
Usage of Internet Banking	.654	
Usage of Online Bill Payment	.921	
Usage of Online Banking	.667	
Usage of Green Checking Accounts	.854	
Usage of Green Cards		.821
Usage of Cash Deposit System		.682
Usage of Green Credit Cards		.756
Usage of Green Mortgages		.863
Usage of ATMs		.754

Source: Primary Data

**[1] Online banking:**

The factor categorization is shown in Table 1.5. Out of 10 variables, the first factor consists of five variables: usage of mobile banking (.782), usage of internet banking (.654), usage of online bill payment (.921), utilisation of online banking (.667), and usage of green checking accounts (.854).

**[2] Online cards:**

The second component is made up of five variables: usage of green cards (.821), usage of cash deposit systems (.682), utilisation of green credit cards (.756), usage of green mortgages (.863), and usage of ATMs (.754).

**1.9 Relationship between the age and usage of green banking products – ANOVA:**

Analysis of Variance (ANOVA) is a method of statistics for comparing the means of many groups. The null hypothesis for the present investigation is that there is no statistically significant between age and use of green banking products. Table 1.6 examines the relationship between age and use of green banking products.

*H<sub>0</sub>: There is no significant between the age and usage of green banking products.*

**Table 1.6 Relationship between age and usage of green banking products – ANOVA**

ANOVA						
Reasons for default in repayment of loan		Sum of Squares	Df	Mean Square	F	Sig.
Online banking	Between Groups	38.267	2	19.133	20.595	.000
	Within Groups	474.733	98	.929		
	Total	513.000	100			
Online cards	Between Groups	6.844	2	3.422	3.455	.000
	Within Groups	506.156	98	.991		
	Total	513.000	100			

The ANOVA findings are shown in Table 1.6. According to the findings, the significant value for online banking as well as digital cards is less than 0.05. As a result, the null hypothesis is rejected, and it is determined that there is a substantial association between age and use of green banking products.

**1.10 Conclusion:**

It may be inferred that banks must launch new activities to raise client knowledge of green banking. Banks should also embrace environmentally friendly strategies that ensure resource efficiency. In order to force businesses to invest in required environmental management, appropriate technology, and management systems, banks should be proactive in embedding environmental and natural concerns into their lending policies. Most customers are not aware of the green banking initiatives of their banks. As a result, it is critical for bankers to provide their consumers with education about green banking practices. Banks must go green in order to achieve their societal duties.

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