



## ROLE OF COMMERCIAL BANKS IN SUSTAINABLE ECONOMIC DEVELOPMENT THROUGH GREEN BANKING

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### **Abstract**

*Banks are the major economic agents influencing the industrial sector, one of the important professional institutions that interact with the masses, they are able to adopt green activities within their organizations and influence their customers to come about the environment. Green Banking is one of the banking activities that concentrate on socio economic and environmental (Ecological) factors with an aim to protect the environment and conserve natural resources. Green banking is making technological improvements, operational improvements and changing client habits in the banking sector. It means to promote environmental friendly practices and to reduce the carbon footprint from banking operations. It is a smart and proactive way of thinking with a vision of future sustainability. The present empirical study was conducted with an objective to assess the role of commercial banks in sustainable economic development through green banking activities and to analyse the green banking initiatives of commercial banks and also to examine different methods of green banking services in commercial banks. The study was based on both primary and secondary data. The area of study is confined only to selected banks in kerala. The collected data is analyzed and interpreted by applying various statistical tools. The paper concludes that Green Banking is not only a CSR activity of an organization, but also it is about making the society habitable without any considerable damage and for sustainable banking, commercial banks should adopt green banking as a business model and India's growth story and commitment to cut its carbon intensity by 20-25 percent from 2005 levels by 2020 provides tremendous opportunities for commercial banks.*

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## Introduction

Green Banking is a way to sustainable economic growth. Banks play a critical role in economic development and they are well equipped to undertake Green Banking activities. A new emerging mantra within the banking sector is going green. The term Green refers a broad range of social, ethical and environmental dimensions. Green Banking is one of the banking activities that concentrate on socio economic and environmental (Ecological) factors with an aim to protect the environment and conserve natural resources. Since banks are one of the important professional institutions that interact with the masses, they are able to adopt green activities within their organizations and influence their customers to come about the environment. Green initiatives by banks include internal environment management, environmental financing/product ecology, environmental disclosure and reporting, formulating and adopting principles and promoting other stakeholders.

Banks are the major economic agents influencing the industrial sector for lending and financing the projects. They are playing an important role in promoting a sustainable environment. They persuade the economic development and growth of the country. As society is now more concerned and aware about the environmental issues, there is need for banks to adopt green strategies into their operations.

According to Indian Banks Association (IBA, 2014) “Green Bank is like a normal bank, which considers all the social and environmental / ecological factors with an aim to protect the environment and conserve natural resources”. It is also known as ethical bank or sustainable bank. Their purpose is to perform banking activities but with an additional plan towards taking care of earth's ecology, environment, and natural resources including biodiversity.

Green banking is making technological improvements, operational improvements and changing client habits in the banking sector. It means to promote environmental friendly practices and to reduce the carbon footprint from banking operations. It is a smart and proactive way of thinking with a vision of future sustainability.

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## **Need of the study**

Banks in India are playing a vital role towards sustainable development by introducing various green banking practices. Adoption of these green banking practices by the customers will result savings of energy, fuel, paper and other natural resources. Though, many studies have been made in the field of green banking globally but there have been very few studies done in Kerala, Therefore, it is the high time to carry out study on role of commercial banks in sustainable economic development through green banking to make the people aware about their benefits to the users as well as the environment. Such study will surely help the banking sector, customers, policy makers and the society as a whole.

## **Scope of the study**

Although all commercial banks are following green banking activities, the present study is limited to the commercial banks of Kerala in Trissur district. One bank from public sector (SBI) and one bank from private sector (ICICI) is selected for the present study.

## **Objectives of the study**

1. To assess the role of commercial banks in sustainable economic development through green banking activities.
2. To analyse the green banking initiatives of commercial banks.
3. To examine different methods of green banking services in commercial banks.

## **Hypotheses of the study**

The following working hypotheses have been formulated and tested throughout the study:

1. H0: There is no significance difference between male and female with respect to ATM  
H1: There is significance difference between male and female with respect to ATM.
2. H0: There is no significance difference among age group with respect to ATM  
H1: There is significance difference among age group with respect to AT
3. H0: There is no difference among educational qualification with regard to ATM  
H1: There is difference among educational qualification with regard to ATM.
4. H0: There is no significance difference between Male and Female with respect to Mobile banking  
H1: There is significance difference between Male and Female with respect to Mobile banking.
5. H0: There is no significance difference among age group with respect to Mobile Banking



- H1: There is significance difference among age group with respect to Mobile Banking
6. H0: There is no difference among educational qualification with regard to Mobile Banking  
H1: There is difference among educational qualification with regard to Mobile Banking.
7. H0: There is no significance difference between male and female with respect to online banking  
H1: There is significance difference between male and female with respect to online banking.
8. H0: There is no significance difference among age group with respect to online Banking  
H1: There is significance difference among age group with respect to online Banking
9. H0: There is no difference among educational qualification with regard to online Banking  
H1: There is difference among educational qualification with regard to online Banking.
- 10.H0: There is no significance difference between male and female with respect to Tele banking  
H1: There is significance difference between male and female with respect to Tele banking
11. H0: There is no significance difference among age group with respect to Tele Banking  
H1: There is significance difference among age group with respect to Tele Banking
- 12.H0: There is no difference among educational qualification with regard to Tele Banking  
H1: There is difference among educational qualification with regard to Tele Banking.

## Research Methodology

This paper reviews the literature on the basis of secondary data collected from the sources such as articles, research papers, annual reports, sustainability reports, company's official websites, etc. For examining different green banking methods taken by commercial banks, top performing banks (on the basis of net profit) from Trissur districts are selected both from public and private sector for collecting data. The collected data is analysed using SPSS software and various statistical tools like Mean, Standardard Deviation, t-test,





ANOVA, Friedman test are used for analysing Data.

### **Role of Commercial Banks in Sustainable Economic Development through Green Banking Activities.**

**ICICI:** As a part of sustainable economic development, ICICI conducted paperless initiatives like e-statements and e-greetings which help to save 30,000 trees from being felled and 16 crore litres of water through green initiatives. Besides this ICICI Bank attempts to support other organizations in their endeavors to go green by funding and managing green technology projects. This bank tried to reduce its footprint by providing customers alternate and non paper based channels such as e-branches, e-statements, online banking and mobile banking. ICICI has partnered with the Indian government, World Bank and UNAID to support SME projects in the area of green research and clean technology. It is also working with the Indian Army on water management, energy conservation and alternate energy projects.

**SBI:** State Bank of India, as the largest commercial bank in India has become the first bank in the country to venture into generation of green power by installing windmills for captive use. As part of its green banking initiative, the bank has installed 10 windmills with an aggregate capacity of 15 MW in the states of Tamil Nadu, Maharashtra and Gujarat and they have planned to install more windmills in near future. The bank also supports the green initiatives of its clients and offers them finance on priority and at concessionary rate of interest.

The bank has introduced a scheme known as Green Homes'. Under this scheme, the bank is offering concessions such as reduced margin, softer interest rate and zero processing fees on home loans for environment friendly residential projects rated by the Indian Green Building Council (IGBC). The bank has also launched a loan product called 'Carbon Credit Plus' to finance the future Clean Development Mechanism (CDM) projects. Moreover, the bank has launched its Green Banking Policy and decided to run ATMs on solar energy to reduce their power consumption. The recent green banking initiatives of the bank also include paperless banking for customers, clean energy projects and the building of windmills in rural India. The bank intends to bring down its carbon footprint and to save energy through several green banking practices namely Green Channel Counters, Automated Teller Machine (ATM), Cash Deposit Machine (CDM), Internet Banking, Mobile Banking, Green Self Service Kiosks, SMS Unhappy



Scheme, Green Home Loans, Green Projects Loan, Viswayatra Foreign Travel Card, Fruit bearing tree plantation, Rain Water Harvesting Projects in the Bank Offices, etc.

### **Green Banking Initiatives**

#### **Public Sector Bank- State Bank of India (SBI)**

- SBI had launched Green Channel Counter (GCC) facility at their branches in 2010 to change the traditional way of paper based banking (SBI, 2014).
- The bank had also collaborated with Suzlon Energy Ltd for the generation of wind power for selected branches by setting of windmills in Gujrat, Tamil Nadu and Maharashtra (Business Standard, 2014).
- It has become a signatory to the Carbon Disclosure Project in which they undertake various environmentally and socially sustainable initiatives through its branches spread across the length and breadth of the country (WWF-INDIA, 2014).
- Export Import Bank of India (EXIM) and SBI entered into an agreement to jointly provide long term loans up to 14 years to Spain based company Astonfield Renewable Resources and Grupo T-Solar Global SA for building solar plant in India (Yadav & Pathak, 2013).

**Private Sector Bank- ICICI Bank Ltd** – ICICI bank had adopted 'Go Green' initiative, which involves activities such as Green products/offerings, Green engagement and green communication with customers as per ICICI Bank (2014):-

- **Green Products and Services:** The bank is offering green products and services like  
(i) Instabanking: - It is a service which gives convenience to the customers to do banking anywhere and anytime through internet banking, mobile banking, IVR banking, etc. This reduces the carbon footprint of the customers as they do not require the physical statement or travel to the bank branches.  
(ii) 'Vehicle Finance': - They are offering 50% waiver on processing fee of auto loans on the car models which uses alternate sources of energy like the Civic Hybrid of Honda, Tata Indica CNG, Reva electric cars, Mahindra Logan CNG versions, Maruti's LPG version of Maruti 800, Omni and Versa and Hyundai's Santro Eco. (iii) Home Finance – The bank had reduced the processing fee for the customers who are purchasing homes in LEED certified buildings.





- **Green Engagements:** (i) During Diwali 2013, the organization had conducted an environmental awareness program for employees and customers in which money plant was presented to all the people present there as a token of collective responsibility to protect the environment. (ii) It has also become partners with the Green theme CNBC – overdrive auto awards. (iii) The bank is celebrating World Environment Day every year on June 5. They perform various activities on that day like green pledge through signature campaigns, plantation and distribution of saplings etc. They are also celebrating Earth hour every year in March in which they switch off the lights of their premises, branches and ATM's between 8:30 pm to 9:30pm.
- **Green Communications:** The bank always insists their customers for online bill payment, online funds transfer and subscription to e-statements which promote 'paperless' and 'commute free' modes of banking transactions.
- **Green Partners:** The organization is looking forward for partnerships with national and international green organizations and NGO's. They are partners with Green Governance awards set up by BHNS to appreciate the participant's organization effort beyond the statutory compliance for protection of the environment.

### Data Analysis and interpretation of primary data (Green Banking Methods)

**Table 1: Frequency Table**  
**Gender**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	26	52.0	52.0	52.0
	female	24	48.0	48.0	100.0
	Total	50	100.0	100.0	

  

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 25	13	26.0	26.0	26.0
	25-35	15	30.0	30.0	56.0
	35-45	11	22.0	22.0	78.0
	45-55	5	10.0	10.0	88.0
	Above 55	6	12.0	12.0	100.0
	Total	50	100.0	100.0	



	Frequency	Percent	Valid Percent	Cumulative Percent
Valid professional	18	36.0	36.0	36.0
Non-professional	17	34.0	34.0	70.0
Others	15	30.0	30.0	100.0
Total	50	100.0	100.0	

Source: Primary data

### Interpretation:

From the table 1, 2, and 3, among 50 respondents 52% are men and 48% is female and 26% of respondents are below 25 years of age, 30% are in 25-35 year of age group, 22% belongs to 35-45 year of age group and 10% of respondents are between 45 & 55 and rest 12% are above 55 years of age group. 36% of respondents are professional, 34% are non-professionals and 30% of respondents are in other categories.

**Table 4**

Various Green Banking Methods	Green Banking Users	Methods users	Percentage of users
ATM	43	7	86%
Online banking	16	34	32%
Tele banking	14	36	28%
Mobile banking	20	30	40%

Source: Primary data

	Mean Rank
ATM	2.15
Mobile banking	3.00
online banking	2.40
Tele banking	2.45

### Interpretation





From the above table, ATM is the most popular alternative banking delivery channel whereas, Tele-banking is the least used banking practice. The fast growing mobile subscribers is the main cause of less use of telephone banking. Customers are now adopting SMS banking over Tele-banking. This study reveals that people are more concern about the security while using various green banking practices. From table three, according to fried man test, it is clear that mobile banking is ranked first in green banking methods.

### Testing of hypothesis:

1. H0: There is no significance difference between male and female with respect to ATM

H1: There is significance difference between male and female with respect to ATM.

**Table 6 t- Test**

Gender	Mean	S.D	t-value	p value
Male	21.03	1.8	0.684	.867

### Interpretation

Since P value is more than 0.05, the null hypothesis is accepted at 5% level of significance. Hence, concluded that, there is no significance difference between male and female with respect to ATM.

2. H0: There is no significance difference among age group with respect to ATM

H1: There is significance difference among age group with respect to ATM

**Table 7 ANOVA**

Age group	Mean	S. D	F value	P value
Below 25	21.46	1.9	0.806	0.528
25-35	20.93	1.3		
35-45	20.81	1.5		
45-55	22	1.6		
Above 55	20.33	2.9		

Since, P value is more than 0.05, H0 is accepted at 5% level of significance. Hence conclude that, there is no difference among age group with respect to ATM.

3. H0: There is no difference among educational qualification with regard to ATM

H1: There is difference among educational qualification with regard to ATM.

**Table 8 ANOVA**

<b>Educational qualification</b>	<b>Mean</b>	<b>S. D</b>	<b>F value</b>	<b>P value</b>
Professional	22.00	1.8	5.343	0.008**
Non-Professional	20.17	1.7		
others	21.00	1.4		

**Interpretation**

Since, P value is less than 0.01, the null hypothesis is rejected at 1% level of significance. Hence concluded that, there is significant difference between professional, non-professional and others with respect to ATM.

1. H0: There is no significance difference between Male and Female with respect to Mobile banking

H1: There is significance difference between Male and Female with respect to Mobile banking

**Table 9 t- Test**

<b>Gender</b>	<b>Mean</b>	<b>S.D</b>	<b>t-value</b>	<b>p value</b>
Male	22.04	1.4	.102	.919
Female	22.00	1.6		

**Interpretation**

Since P value is more than 0.05, the null hypothesis is accepted at 5% level of significance. Hence, concluded that, there is no significance difference between male and female with respect to Mobile banking.

1. H0: There is no significance difference among age group with respect to Mobile Banking

H1: There is significance difference among age group with respect to Mobile Banking

**Table 10 ANOVA**

<b>Age group</b>	<b>Mean</b>	<b>S. D</b>	<b>F value</b>	<b>P value</b>
Below 25	21.76	.92	1.386	.254
25-35	21.86	1.8		
35-45	21.72	1.1		
45-55	22.80	1.3		
Above 55	23.00	1.0		

**Interpretation**





Since, P value is more than 0.05, H<sub>0</sub> is accepted at 5% level of significance. Hence conclude that, there is no difference among age group with respect to Mobile Banking.

1. H<sub>0</sub>: There is no difference among educational qualification with regard to Mobile Banking

H<sub>1</sub>: There is difference among educational qualification with regard to Mobile Banking.

**Table 11 ANOVA**

<b>Educational qualification</b>	<b>Mean</b>	<b>S. D</b>	<b>F value</b>	<b>P value</b>
Professional	22.50	1.1	2.284	.113
Non-Professional	20.94	1.9		
Others	21.50	1.9		

### **Interpretation**

Since, P value is greater than 0.05, the null hypothesis is accepted at 5% level of significance. Hence concluded that, there is no significant difference between professional, non-professional and others with respect to Mobile banking.

1. H<sub>0</sub>: There is no significance difference between male and female with respect to online banking

H<sub>1</sub>: There is significance difference between male and female with respect to online banking.

**Table 12 t- Test**

<b>Gender</b>	<b>Mean</b>	<b>S.D</b>	<b>t-value</b>	<b>p value</b>
Male	21.50	.94	.991	.327
Female	22.00	1.4		

### **Interpretation**

Since P value is more than 0.05, the null hypothesis is accepted at 5% level of significance. Hence, concluded that, there is no significance difference between male and female with respect to online banking.

1. H<sub>0</sub>: There is no significance difference among age group with respect to online Banking

H<sub>1</sub>: There is significance difference among age group with respect to online Banking.

**Table 13 ANOVA**

Age group	Mean	S. D	F value	P value
Below 25	20.92	1.2	2.184	0.086
25-35	21.40	1.2		
35-45	22.09	.83		
45-55	20.60	1.1		
Above 55	21.33	1.0		

**Interpretation**

Since, P value is less than 0.05, the null hypothesis is rejected at 1% level of significance. Hence conclude that there is significant difference among age group with respect to online Banking.

1. H0: There is no difference among educational qualification with regard to online Banking

H1: There is difference among educational qualification with regard to online Banking.

**Table 14 ANOVA**

Educational qualification	Mean	S. D	F value	P value
Professional	22.50	1.1	2.837	0.069
Non-Professional	20.94	1.9		
others	21.50	1.9		

**Interpretation**

Since, P value is less than 0.05, the null hypothesis is rejected at 1% level of significance. Hence concluded that, there is significant difference between professional, non-professional and others with respect to online banking.

1. H0: There is no significance difference between male and female with respect to Tele banking

H1: There is significance difference between male and female with respect to Tele banking.

**Table 12 t- Test**

Gender	Mean	S.D	t-value	p value
Male	21.8	.95	2.76	.008
Female	21.1	.99		

**Interpretation**





Since P value is less than 0.05, the null hypothesis is rejected at 1% level of significance. Hence, concluded that, there is significance difference between male and female with respect to Tele banking.

1. H0: There is no significance difference among age group with respect to Tele Banking

H1: There is significance difference among age group with respect to Tele Banking

**Table 13 ANOVA**

Age group	Mean	S. D	F value	P value
Below 25	21.30	.28	.457	.767
25-35	21.53	.27		
35-45	21.45	.28		
45-55	21.60	.50		
Above 55	22.00	.51		

#### Interpretation

Since, P value is more than 0.05, the null hypothesis is accepted at 5% level of significance. Hence conclude that there is no significant difference among age group with respect to Tele Banking.

1. H0: There is no difference among educational qualification with regard to Tele Banking

H1: There is difference among educational qualification with regard to Tele Banking.

**Table 14 ANOVA**

Educational qualification	Mean	S. D	F value	P value
Professional	21.66	.97	3.947	0.026
Non-Professional	21.00	.79		
others	21.93	1.1		

#### Interpretation

Since, P value is less than 0.05, the null hypothesis is rejected at 1% level of significance. Hence concluded that, there is significant difference between professional, non-professional and others with respect to Tele banking.



## Findings of the study

- Among 50 respondents 52% are men and 48% is female and 26% of respondents are below 25 years of age, 30% are in 25-35 year of age group, 22% belongs to 35-45 year of age group and 10% of respondents are between 45 & 55 and rest 12% are above 55 years of age group. 36% of respondents are professional, 34% are non-professionals and 30% of respondents are in other categories
- ATM is the most popular alternative banking delivery used by customers.
- Tele-banking is the least used banking practice. The fast growing mobile subscribers is the main cause of less use of telephone banking.
- Mobile banking is first ranked among green banking methods.
- There is no significance difference between male and female with respect to ATM.
- It is found that there is no difference among age group with respect to ATM.
- From the above study, there is significant difference between professional, non-professional and others with respect to ATM.
- It is found that there is no significance difference between male and female with respect to Mobile banking.
- The study also reveals that there is no difference among age group with respect to Mobile Banking.
- The above study show that there is no significant difference between professional, non-professional and others with respect to Mobile banking.
- It is also found that there is significant difference between professional, non-professional and others with respect to online banking.
- The study show that there is significant difference among age group with respect to online Banking and there is no significance difference between male and female with respect to online banking.
- From the above study, it is found there is significance difference between male and female with respect to Tele banking.
- It is also found that there is no significant difference among age group with respect to Tele Banking.
- there is significant difference between professional, non-professional and others with respect to Tele banking





## Conclusion

India's growth story and commitment to cut its carbon intensity by 20-25 percent from 2005 levels by 2020 provides tremendous opportunities for Indian banks from funding sustainable projects to offering innovative products and services in the areas of green banking. Initially, these commitments to environmental and social guidelines will cause a huge financial burden for Indian banks. For effective green banking, the RBI and the Indian government should play a proactive role and formulate a green policy guidelines and financial incentives. The survival of the banking industry is inversely proportional to the level of global warming. Therefore, for sustainable banking, Indian bank should adopt green banking as a business model without any further delay.

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