

Study of Green Banking in Environment Sustainability - Role of Indian Banks

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ARTICLE HISTORY

Paper Nomenclature:
Empirical Research Paper (ERP)
Paper Code: V11N2AJ2019ERP1
Originality Test Ratio: 10%
Submission Online: 6-April-2019
Manuscript Acknowledged: 10-May-2019
Originality Check: 14-May-2019
Peer Reviewers Comment: 24-June-2019
Blind Reviewers Remarks: 20-July-2019
Author Revert: 21-Aug-2019
Camera-Ready-Copy: 28-Aug-2019
Editorial Board Citation: 05-Sep-2019
Published Online First: 20-Sep-2019

EDITORIAL BOARD EXCERPT

Initially at the Time of Submission (ToS) paper had a 10% plagiarism, which is an accepted percentage for publication. The editorial board is of an observation that paper had a successive close watch by the blind reviewer's which at the later stages had been rectified and amended by the authors (Rajnish & Neelu) in various phases as and when required to do so. The reviewers had in a preliminary stage remark with minor revisions which at a short span were restructured by the author. The comments related to this manuscript are tremendously noticeable related to **Optimization of Time of Mobile Robot Using Genetics Algorithm** both subject-wise and research wise. The authors have crafted the paper in a structured manner. As the sensor based mobile robot coverage path planning is exigent for robotics management. It mostly increases with the increase in a distance travelled by robot. The paper made an attempt to find such an optimal path for robot by which robot have to travel least distance. All the comments had been shared at a variety of dates by the author in due course of time and same had been integrated by the author in calculation. By and large all the editorial and reviewer's comments had been incorporated in paper at the end and further the manuscript had been earmarked and decided under **"Empirical Research Paper"** as in this work a new algorithm is designed which reduces the power consumption in the robots.

ABSTRACT

Purpose: Banking Sector plays a major role in shaping the economy of the country. Nowadays banks develop inclusive strategies that leads to substantial economic development and environmental friendly practices as well. The main stakeholder in the industrial sector is banking and it is possible that it can face both liability and credit risk. Further, environmental aspect can also impact the value of assets and also percentage of earning of banks in the long-run. Therefore, banks are expected to perform optimistic role to go green and instil and include the environmental and ecological factors in their policies which will ultimately force industries to make investment in environmental sustainable industries. The conventional banks are becoming green banks by shifting their existing operations towards the environmental concerns. Banks are actual catalyst which can really promote economic growth of an economy by accepting green banking which is a part of Corporate Social Responsibility (CSR). Green Banking is a departure from traditional banking since it envisages a socially and environmentally responsible role for banks. Green Banking applies the principles of sustainability i.e. **people, profit and planet** in the provision of credit. Ethical banking or sustainable banking is the other name for Green Banking It is paperless banking which not only include the less use of paper but also reduces the use of energy and power. In today's age of globalisation, environmental issues are gaining importance and there is pressure on banks to go green and finance industries which work towards reducing carbon footprints. This paper focuses on the concept of Green banking and green banking initiatives of Indian banks.

Design/Methodology/Approach: Descriptive approach based on secondary data.

Originality/value: The research paper studies the concept of Green banking and initiatives taken by banks as banks are expected to perform an optimistic role to go green and instil and include the environmental and ecological factors in their policies which will ultimately force industries to make investment in environmental sustainable industries.

KEYWORDS Green Banking | Sustainability | Green Building | Carbon Business | Kyoto Protocol

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<https://doi.org/10.18311/gjeis/2019>

Volume-11 | Issue-3 | Jul - Sep, 2019 | Online ISSN : 0975-1432 | Print ISSN : 0975-153X

Frequency : Quarterly, Published Since : 2009

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Introduction

Markets should work in suitable structure of cost efficient rules and economic instruments to achieve sustainable development. Banking sector is one of the chief economic factor which effects industrial and economic growth of any economy. Today industries and firms are vulnerable to rigorous laws and environmental policies. The main stakeholder in the industrial sector is banking and it is possible that it can face both liability and credit risk. Further, environmental aspect can also impact the value of assets and also percentage of earning of banks in the long-run. Therefore, banks are expected to perform an optimistic role to go green and instil and include the environmental and ecological factors in their policies which will ultimately force industries to make investment in environmental sustainable industries.

What is Green Banking

The objectives of banking sector nowadays are to instil eco-friendly investments, financing those enterprises that are already green or planning to go green and reducing carbon footprints from banking activities to save natural environment is called Green Banking/Ethical bank/ sustainable bank. The benefit of such an initiative will be jointly shared by banks, industries and the economy. Green banking supports in cost optimisation, enhancing the assets quality of banks, lowering the risk, improving the reputation and helps in achieving the environment sustainability objective. All these objectives can be achieved through online banking. Same authorities control green banking but they shoulder additional responsibility that emphasises on Earth's habitats /resources / environment. Reports of banking expert's states that green banking includes the canons of sustainability, imparting on ethical terms, conservation and energy efficiency. Several variances occur when green Banking and normal banking is distinguished. Green banks follow Go Green mantra, they focus more on good ecological and social business initiatives, they analysed all the terms before granting a loan, whether the project is Eco-friendly and has any outcomes in the future, consumers will be granted loan only when they follow all the green safety principles.

Objective of the Study

- To study the concept of Green Banking
- To identify the green banking initiatives of Indian Banks

Research methodology

The approach used in this paper is descriptive and relevant secondary data has been collected. The extensive study has been done by going through the authentic websites of respective banks, publications of Research bank of India., Journals, articles, magazines and newspaper.

Scope of Study

Many banks have started green banking initiatives. These initiative help the banks to reduce cost of services and brings easiness to consumers. It is not possible to evaluate the green banking initiatives taken by all the Indian banks. Hence, the

scope is limited to analyze the green banking initiatives taken by

- 5 Public banks
- 5 private sector banks
- 5 foreign banks

Literature Review

Nowadays it has become very important for the banking industry and financial institutions to look at the environmental factor while making investment decision. According to "Hart and Ahuja, 1994; Hart and Ahuja, 1996, Klassen and McLaughlin, 1996; Galdeano-Gomez, 2008, Russo and Fouts, 1997", various studies have been conducted and resulted in affirmative relationship between the profitability of firms and measures taken by the government for environment.

Today banks and financial institutions have joined green movement to save our planet and to exploit on the growing demand of green consumers. Rewarding for Pursuance of Green Consumerism, as an instrument to control the environmental impact. Today green consumerism is more apprehensive about quality than quantity. Srinivas a Rao, KS and Rama Rao (1998) studied the PUSHPA System which was projected on hassle-free Utility Payment System using Technology. They have also forecasted the possible Technological issues that can arise during the implementation of PUSHPA System and suggested the method to be taken up. cost savings, increase in bond value, lower risk, environmental stewardship and progression in operating profit are the few results of Environment management system (Heim, Getal, 2005).

Rajput, Kaure et al. (2013) conducted research and resulted that how banks of India are reacting to ecological fluctuations and the initiatives taken by them in context of Green Banking. Their studies reflected that a small group of Indian banks are taking initiative for environmental issues. Indian banks are inactive as far as international initiative for environment is concerned. There is no Indian signatory working in the United Nation Environment Programme Finance Initiative. They stated that collapse of businesses to compete and nonexistence of RBI commands are the hindrances for moving towards sustainability with the help of factor analysis. The loopholes in India are the lack of knowledge and perception of consumers on the environmental issues. The requirement of Carbon Disclosure Projects in India is disclosure of public foremanations. Though the response is very less as only 8 signatories are there but the divulgence project in India is active.

Jha & Bhome (2013) conducted research in their paper entitled "A Study of Green Banking Trends in India" attempted to understand the measures taken by public sector banks in India and also studied the means to Go Green. The goal of this research was to understand green banking sector and growing awareness among employees, acquaintances and community for green banking. Moreover, the research had

given suggestions that green projects should be given on less interest rates than the normal interest rate and the companies can earn higher profits by reusing the waste generated. This study also focuses on green products

Singhal, Singhal & Arya (June 2014) presented their paper titled *Green Banking: An Overview and attempted* to know how banks can follow go green mantra. The study has revealed that banks and financial institutions are very important sources of growth in our country. The adoption of green banking not only builds green image but it saves both energy and environment. The initiatives taken by banks nowadays are the offering of green products such as green cards, green CDs, use of windmills and solar energy plants but still the growth is tardy as it is not implemented fully across all banks. Thus efforts should be made for sustainable environment and green banking is the best approach to achieve this.

Sahitya & Lalwani (2014) [12] conducted studies to understand and raise the concept of green banking and initiatives taken to achieve the aim of sustainable banking and determines the several measures taken that by the top private sector and public sector banks. The study has analysed that the banking industry has become extremely aware aboutgoing green mantra. Both public and private sector bank are taking various initiatives such as paperless banking, green credit cards etc. The adoption of green banking not only builds green image but also leads to sustainability of economy.

Pravakar Sahoo and Bibhu Prasad Nayak (2008) conducted studies to show thatpersistent development can be accomplished by letting industries and markets tooperatein an effective framework of cost efficient guidelines and fiscaltools. The financial sector is the utmost economicagentsimpellingindustrial sector and growth of economy such as banking sector. As banking sector is one of the chief stakeholders in the manufacturing industry,it is possible that it can face both liability and credit risk. Further, environmental aspect can also impact the value of assets and also percentage of earning of banks in the long-run. Therefore, the financial institutions shouldinclude go green mantra in their operations and musttake into account eco-friendly and environmental aspects in their advancing principle, which ultimatelyinduce industries to invest in those projectsthat includemanagement of environmental concerns, use technologies and better management systems. The authors recommended the potentialmethods and means to arouse green banking practices in India.

Green Banking

Green Banking is a departure from traditional banking since it envisages a socially and environmentally responsible role for banks. Green Banking applies the principles of sustainability i.e. **people, profit and planet** in the provision of credit. It is also called ethical banking or sustainable banking. In today's age of globalisation, environmental issues

are gaining importance and there is pressure on banks to go green and finance industries which work towards reducing carbon footprints.

The idea of banks to encourage environment friendly investments, financing those enterprises that are already green or planning to go green and reducing carbon footprints from banking activities to save natural environment is called Green Banking. The benefit of such an initiative will be jointly shared by banks, industries and the economy. It helps in cost optimization, lowering risk, improving the reputation and helps in achieving the environment sustainability objective.

Benefits of Green Banking

The risk of banking industry in their operations is huge and it can be controlled by the adoption of green banking approaches. Similarly, it is very important for the economy as they faces the same kind of risk. It provides opportunities for consumers to simplify their banking operations as well as helps in bringing tremendous change that will benefit the environment. Apart from paperless banking green banking helps in reducing consumers risk to fraud and identity theft and helps them in avoiding late fees. It helps customers in saving its own time by reducing the number of his visits to local ATM or bank branches. Crediting of cash back by the banks to the active accountholders and new customers who are turning green or opening green accounts. Less paper work leads to rationalisation of paper as banks allows right to perform all the banking transaction at no cost via electronic banking. E-remittance service which is an exclusive facility to transfer money to home country and overseas. Generation of e-statement by the banks and mailing to the customers which helps customers in saving time. It helps in creating awareness among business people about environment sustainability and encouraging them to invest in eco-friendly projects

Initiative taken by Indian banks to “go green”

Published year of Green banking adopted by various bank

Green Banking enactment year	Name of banks
2003	HSBC Bank
2005	Yes Bank
2007	SBI, ICICI
2008	Bank of Baroda
2009	HDFC, Indusland Bank, Punjab National Bank, Royal Bank of Scotland
2010	Axis Bank, Kotak Mahindra bank
2011	Canara Bank



State bank of India

- India's First bank that had undertaken generation of green power by installation of wind mills for captive use.
- Green home loan scheme of SBI supports eco-friendly residential projects and deals in many services.
- Green Channel Counter (GCC) facility launched by SBI at their 57 branches
- In the year 2010 to move from the traditional way of paper cantered banking.
- Signed an agreement to the Carbon Disclosure Project in which they have promised to undertake various environmental and social sustainable initiatives in its branches all over India.

Punjab National Bank

- Direct electricity audit of offices as a step towards energy conservation and they have maintained distinct file of audit for evaluating the influence of green initiatives undertaken by the bank.
- Undertaken Wind energy project.
- Establishment of green buildings
- Adoption of green practices like using both sides of paper for printing, buying composite fax machine.
- Banks finances projects on the basis of their framed sustainable Environment guidelines.
- Maintenance of Paperless deposit machines.
- PNB started Internet banking in the year of 2003-04.
- Green Credit cards, ATM facility and Debit cards are also some of the Green Banking initiatives started by the PNB bank toward the environment.

Canara Bank

- Canara Bank has commissioned 50 KWp rooftop solar power plants at its Corporate Office in Bengaluru.
- The objective of Green banking enables the bank to set up similar solar plants at all of its branches situated in the country.
- It has started g-governance for human resource management operation and various other administration work so that paper work is reduced.
- They give preference and finance those projects which earns carbon recognition like bio-gas plants, solar projects, wind power projects etc. as a part of their lending policy
- The bank is not giving loan to those industries which are generating substances leading to ozone depletion such as solvents in cleaning, aerosol products, carbon tetrachloride, solvents, chloro fluoro carbon etc.
- During the assessment of any venture, the bank assists the toxic emanating pollutant units, to use water

treatment projects for processing of such pollutants and they also ensure themselves whether No Objection Certificate (NOC) has been received from central or state pollution control board by these manufacturing units.

Bank of Baroda

- While funding commercial projects, BOB gives due weightage to eco-friendly green projects such as wind projects, bio-gas projects and solar energy projects as these projects generate the carbon credits.
- The bank has added conditions in their lending policy, for instance "No Objection Certificate (NOC)" has been received from central or state pollution control board by the borrower and also they are not providing loan to those industries which are producing hazardous substances and their processes are generating ozone depletion substances.
- following various green initiatives including online-business procedures, mobile banking, use of internet banking, and also installing more and more ATM's in mostly areas so that diesel or petrol consumption is reduced in travelling, thus helps in maintaining an unpolluted environment.
- With an intention to take this initiative to the next level, the bank has taken various changes to backup consolidation, desktop virtualization and server virtualization so that data centre operational efficiency is reduced.

Allahabad Bank

- Provides Mobile Banking facilities to customers where customers can access different banking facilities and other value added services in secure and convenient manner under one platform.
- Launched Empower application and Allbank unified payment interface

ICICI Bank

- Launched innovative concept of coal beneficiation technology (coal washeries) and coalbed methane.
- Give assistance to those company that develops an eco-friendly air-conditioning alternative to conventional air conditioners.
- Launched new concept of 'Instabanking' whereby it brings together all its alternative channels under one platform and provides facility of banking anytime anywhere via I-Mobile banking, Internet banking, Instant voice response banking.

HDFC Bank

- An "Environment Management Committee" has been organised as a tool for green banking. The bank has undertaken various environmental initiatives that ensures to make this bank as India's only "green bank". It's a three-member committee that includes both organization

and employee level initiatives. Working on areas like alternate energy sources and watershed management are some of the aspects of organisation level and employee level initiatives include tree plantation, and pooling a car for commutation

- Banks would establish green clubs across all its branches and they have also appointed environment managers for every office, branch, and floor.

Axis Bank

- Axisbank is donating a note book to the needy and poor for each e-registration by a customer under their E-statement facility.
- As an initiative towards Green banking, bank had started the drive of dry waste collection from their thirty-four branch offices situated in Mumbai and corporate offices and reprocess it to envelopes, notebooks and notepads. Today, papers weigh more than 1,00,000 kgs has been recycled and 12,000 notebooks, notepads and envelopes has been manufactured which are used at corporate office and other branches of the bank.
- The bank has constructed their corporate office as a Platinum LEED certified 'Green Building'.
- Bank has started carpooling as a step toward green banking
- They are encouraging their customers to choose online statements for their credit cards. Thus less use of paper, thus giving them facility to collect statements electronically, at their convenience
- Bank has launched Independent ATM Deployment (IAD) model in Coimbatore circle where ten solar based ATM has been established
- Sends Annual reports through e-mail.

Kotak Mahindra bank

- They are encouraging their customers to choose online accounts for their credit cards. Thus less use of paper, thus giving them facility to collect statements electronically, at their convenience
- To mark the initiative of every customer who opts for an e-credit card statement, they plant a sapling in partnership with Grow-Trees.com.

IndusInd Bank

- Initiated a campaign titled "Hum aur Hariyali" where they initiated first solar-powered ATM in Mumbai as a step towards "Green Office Project". With this launch, the bank is expecting to save approx. 1,980 Kw of energy on annual basis and also this project helps in reducing carbon emissions by 1,942 kg.
- They are also targeting to save power bills of around Rs 20,000 annually in urban areas, as they have replaced diesel generators with solar panels.

- They are also supporting eco-friendly finance programmes and providing incentives to go green.

Barclays Bank

- Barclays' Green Loans scheme provides funding for a variety of green and environmental sustainable projects such as, renewable energy, green transport, sustainable food, energy efficiency, agriculture and forestry, energy efficiency waste management and greenhouse gas emission reduction.
- Lending for projects is on the basis of their Green Product Framework.

Deutsche Bank AG

- At the corporate level, several initiatives have been taken to recycle and to limit the usage of perishable resources. For instance, they usually send their statements in envelopes made out of reusable paper, thus making a small difference for a better tomorrow.

HSBC Group

- The bank is gauging separate tactics for paper consumption, data centres and business air travel. The objective is to maintain efficiency, reduce its operational effect on the environment thus helps in cost savings

YES Bank

- Maintained projects portfolio in the areas of alternative energy and clean Technologies.

Royal Bank of Scotland

- Launched the first Socially Responsible Investment known as SRI mutual fund. Its purpose is to offer funds to companies that meet global standards in environment, social and corporate governance (ESG) issues.
- The bank has constructed their Allahabad office branch as a Platinum LEED certified 'Green Building', thus saving energy costs

Analysis

- Green Banking is to connect existing operations and technology and most importantly, changing customers' perception to go green. India is well on its way to achieve these objectives. Determined targets towards going green have brought many customers into this eco-friendly approach to banking.
- It provides opportunities for consumers to simplify their banking operations as well as helps in bringing tremendous change that will benefit the environment. Apart from paperless banking green banking helps in reducing consumers risk to fraud and identity theft and helps them in avoiding late fees. It helps customers in saving its own time by reducing the number of his visits to local ATM or bank branches.
- According to the evaluators of Green Banking, it has



- been made mandatory for banks to set up eco-friendly environment but the present situation of Public sector banks have not changed to that extent as they face financial crunch.
- SBI via “Green Channel Counter” saved near about 49,504 A4 sheets.
 - ICICI, HSBC and HDFC Bank has been awarded Green Leaders in the banking industry, they are not only financing green energy projects but also framing guidelines which can lead to cutting their own carbon emissions through innovative ideas.
 - State Bank of India and YES Bank are not only earning additional business income through their carbon credit financing but they are also providing supporting services.
 - According to Global scenario, Indian banks are lagging from developed nations. If banks in India aspire to tap global markets, it is very important that they should identify their environmental and social responsibilities.
 - The overall consciousness about Green banking among Public and Private sector banks is huge but the implementation is less. The growth is tardy but Indian banks are picking up the growth.
 - Some big international players like Deutsche, ABN Amro, HSBC Bank, Standard Chartered etc. are taking into account the environmental aspects that has been discussed under Kyoto Protocol. Moreover, the foreign Government has made a formal request to banks in achieving sustainable development.
 - International banks work towards aligning their operational functions with environmental initiatives and promote a better ecosystem.
 - The Banking industry is the possible greener that will make India look brighter.

Suggestions

- The banks must play a foremost role to inculcate the environmental and ecological facets into their lending principle which would induce industries investment based on environmental management, use of appropriate technologies and management systems.
- To achieve sustainable development, bank and financial institutions should work even more harder to compete with big foreign players as they are playing imperative role in sustaining the sustainability of their country's economy.
- Banks should provide training to their employees on Environment sustainable programs.
- Banks must integrate technology with their regular work like paperless banking. Mass transportation system, mobile banking etc.

- Banks' employees must be given orientation programs on evaluation of green banking projects like solar power projects, bio-gas plants, renewable energy projects etc.
- The concept of LEED certified green buildings must be implemented across all banks.

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GJEIS Prevent Plagiarism in Publication

The Editorial Board had used the turnitin plagiarism [<http://www.turnitin.com>] tool to check the originality and further affixed the similarity index which is 30% in this case (See Annexure-I). Thus the reviewers and editors are of view to find it suitable to publish in this Volume-11, Issue-3, Jul-Sep, 2019

Annexure 1

Submission Date
20-Sep-2019

Submission Id
1173716172 (turnitin)

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Reviewers Comments



Reviewer's comment 1:

It is a well-structured, clear and understandable paper. The introduction portion is really strong but the references lack synonymity.

Reviewer's comment 2:

The title of the paper clearly defines the content. It is very well written manuscript. The author has designed a new algorithm which reduces the power consumption in the robots. This is remarkable and praiseworthy.

Reviewer's comment 3:

The quality of research work produced in this work is very good. The paper contains many interesting facts. To select an optimum and efficient path, number of turns must be minimum which has been achieved perfectly by the newly developed algorithm. Also all possible best cases has also been analysed by the researcher and the explanation of the test cases is good.

Citation

Kapil Khatter and Kamna Chopra
"Study of Green Banking in Environment Sustainability - Role of Indian Banks"
Volume-11, Issue-3, Jul-Sep, 2019. (www.gjeis.com)

<https://doi.org/10.18311/gjeis/2019>

Volume-11, Issue-3, Jul-Sep, 2019

Online ISSN : 0975-1432, Print ISSN : 0975-153X

Frequency : Quarterly, Published Since : 2009

Google Citations: Since 2009

H-Index = 96

i10-Index: 964

Source: <https://scholar.google.co.in/citations?user=S47TtNkA AAAJ&hl=en>

Conflict of Interest: Author of a Paper had no conflict neither financially nor academically.



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