



ENVIRONMENTAL SUSTAINABILITY THROUGH GREEN BANKING

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ABSTRACT

Banking sector is generally considered as environmental friendly in terms of emissions and pollutions. Internal environmental impact of the banking sector such as use of energy, paper and water are relatively low and clean. Environmental impact of banks is not physically related to their banking activities but with the customer's activities. Therefore, environmental impact of bank's external activity is huge though difficult to estimate. Moreover, environment management in the banking business is like risk management. It increases the enterprise value and lowers loss ratio as higher quality loan portfolio results in higher earnings. Thus, encouraging environmentally responsible investments and prudent lending should be one of the responsibilities of the banking sector. Further, those industries which have already become green and those, which are making serious attempts to grow green, should be accorded priority to lending by the banks. This method of finance can be called as "Green Banking", an effort by the banks to make the industries grow green and in the process restore the natural environment.

This concept of "Green Banking" will be mutually beneficial to the banks, industries and the economy. Not only "Green Banking" will ensure the greening of the industries but it will also facilitate in improving the asset quality of the banks in future.

This paper will explore the importance of Green Banking, sites international experiences and highlights important lessons for sustainable banking and development in India. However, we find that there has not been much initiative in this regard by the banks and other financial institutions in India though they play an active role in India's emerging economy. Therefore, we suggest possible policy measures and initiative to promote green banking in India.

KEYWORDS- Energy, banking activity, mutually beneficial & asset quality.

INTRODUCTION

Since banking sector is one of the major stake holders in the Industrial sector, it can find itself faced with credit risk and liability risks. Further, environmental impact might affect the quality of assets and also rate of return of banks in the long-run. Thus the banks should go green and play a pro-active role to take environmental and ecological aspects as part of their lending principle, which would force industries to go for mandated investment for environmental management, use of appropriate technologies and management systems.

Ethical banking starts with the aim of protecting the environment. Ethical banks consider all the factors before considering a loan-whether the project is environment friendly and has any implications in the future. A company will be awarded a loan only when all the environmental safety standards are followed. India is growing at a very fast rate and this development is mainly supported by the industrial sector. However the

country faces a major challenge of controlling the impact of business on the environment. India is also one of the fast growing country in terms of emission of green house gases . Delhi, Mumbai and Chennai are one of the among the ten most polluted cities of the world. Some of the major industries in India that causes significant amount of pollution include:

- Primary metallurgical industries
- Paper and pulp
- Pesticides/insecticides
- Fertilizers
- Chemicals/pharmaceuticals
- Textiles, etc.

OBJECTIVES OF THE STUDY

- a) To identify the initiatives of Indian banks for ethical banking.
- b) To assess the responsibility of banks in the environmental sustainability.



- c) To suggest possible policy measures and initiatives to promote green banking in India.

METHODOLOGY

The study was mainly based on secondary data drawn from the reports of UNEP, UNESCO, International Institute for Sustainable Development, IEG (Institute of Economic Growth), RBI reports and scholarly articles. The data collected analyzed for drawing conclusions

Importance of Green Banking

Traditionally, banking sector's concern for environmentally degrading activities of clients is like interfering or meddling in their business affairs. However, now it is being perceived that dealing with environment brings risks to their business. Although the banking and financial institutions are not directly affected by the environmental degradation, there are indirect costs to banks. The importance of Green Banking is immense for both the banks and economy by avoiding the following risks involved in banking sector

- Credit Risk
- Legal Risk
- Reputation Risk

Following are the few banks who have adopted green banking in their banking business:

- SBI
- PNB
- BANK OF BARODA
- CANARA BANK
- ICICI BANK
- HDFC BANK
- KOTAK MAHINDRA BANK
- INDUSIND BANK
- YES BANK
- HSBC GROUP
- IDBI

Environmental Management by the Banking Institutions

The financial institutions should encourage projects which take care of following points while financing them viz., (a) sustainable development and use of natural renewable natural resources (b) protection of human health, bio-diversity, occupational health and safety, efficient production, delivery and use of energy (c) pollution prevention and waste minimization, pollution controls (liquid effluents and air emissions) and solid and chemical waste management and (d) there should be a third party expert to draw a plan for the environment management plan.

They should keep following aspects in mind while financing any projects.

1. Analyzing the project in terms of scale, nature and the magnitude of environmental

impact. The project should be evaluated on the basis of potential negative and positive environmental effects and then compared with the 'without project situation'. There should be an Environmental Impact Assessment (EIA) of each project recommending the measures needed to prevent, minimize and mitigate the environmental negative impact before financing the projects.

2. While investing or funding the projects, the financial institutions should assess the sensitive issues like vulnerable groups; involuntary displacement etc and projects should be evaluated in terms of environmentally important areas including wetlands, forests, grasslands and other natural habitats.
3. Banking institutions need to evaluate the value of real property and the potential environmental liability associated with the real property. Therefore, the banks should have right to inspect the property or to have an environmental audit performed through the life of the loan.
4. Banks also need to monitor post transaction for the ideal environmental risk management program (Rutherford, 1994) during the project implementation and operation. There should be physical inspections of production, resources, training and support, environmental liability, audit programs etc.
5. The next round of evaluation includes loan structuring, credit approval, and credit review and loan management. Further banks have annual audits, quarterly environmental compliance certificate from the independent third party and also from the government.

Further the banks can introduce green bank loans and products like (i) investing in environmental projects (recycling, farming, technology, waste, etc) for example reduced-rate of interest on loans to homeowners who install a solar energy system (ii) providing option for customers to invest in environmentally friendly banking products (iii) investing in resources that combine ecological concerns and social concerns.

Enforcement of Environmental Management and Role of the Government

The problems in India are the legislation is not yet framed and in few cases, things are not strictly enforced, but things can change overnight resulting in major compliance problems for the companies concerned and increased risk for the banks that have lent to them. There should be continuous dialogue relating to environmental matters with relevant audiences, including stakeholders, employees, customers, governments and the public.



Viable solutions

a. Carbon credit business:

Indian banks can involve themselves in carbon credit business, wherein they can provide all the services in the area of CDMs* and carbon credits including services of identification and funding of CDM projects, advisory services for registration of CDM (certified Emission Reductions (CERs) which are commonly known as carbon credits)projects and commercialization of CERs under different structures to meet the requirements of its customers, acting as an intermediary for buying CERs on behalf of end-users or carbon funds, financing against CERs and CERs receivables, and other related banking services. As India has huge potential for carbon credit business, Indian banks can set up dedicated carbon credit cells to capture a major share of this carbon credit business.

b. Green Banking Financial Products: Indian banks should develop innovative green banking financial products which can directly or indirectly help in the reduction of carbon emissions. These banks can introduce a 'Green Fund' to provide climate conscious customers the option of investing in environmental friendly projects Banks can also introduce green bank loans with financial concessions-for environmental friendly products and projects. Besides introducing specific green banking products, banks can incorporate an Environmental Impact Assessment (EIA) in their project appraisal while financing any project to measure the nature and magnitude of environmental impact as well as suggest environmental risk mitigation measures. Banks can also conduct environmental audits of the financed projects. Banks need to redesign their credit products to assist SMEs to adopt quality and conform to environmental standards. Banks should also include green guidelines in their credit policies to raise the green loan portfolio.

c. Green Mortgages: Banks such as Citigroup Inc., Bank of America, and JP Morgan Chase & Company are just a few of the mortgage lenders offering special discounts on mortgages used to build or update buildings and homes to be more green. One of the reasons for the push for green mortgages is that green building and rebuilding tends to incorporate more energy-efficient materials and building plans.

There are two types of green mortgages: the Energy Improvement Mortgage – it's like a second mortgage that is to be used to upgrade a home or building to energy efficient by installing energy saving items such as solar panels and improved insulation - and the Energy Efficient Mortgages for the construction of new energy efficient homes and buildings

d. Carbon Footprint Reduction: Carbon footprint is a measure of the impact of our activities on the environment. It relates to the amount of GHG we are producing in day-to-day business while burning fossil fuels for electricity, heating, transportation, etc.

Banks can reduce their carbon footprints by adopting the following measures:

i) Paper-less Banking: As banks have computerized their branches, there is ample scope for doing paperless or less-paper banking. Mostly PSBs use huge quantities of paper for office correspondence, audit reporting, recording public transactions, etc. These banks can switch over to electronic correspondence and reporting. Banks should encourage their customers also to switch over to electronic transactions and popularise e-statements.

ii). Energy Consciousness: Developing energy- consciousness, adopting effective office time management and automation solutions and using compact fluorescent lighting (CFL) can help banks save energy consumption considerably. Banks can conduct energy audits in all their offices for effective energy management. They can also switch over to renewable energy (solar, wind, etc.) to manage their offices and ATMs.

iii) Using Mass Transportation System: PSBs can become fuel efficient organization by providing common transport for group of officials posted at one office.

iv) Green Buildings: The Indian banking industry uses more than one lakh premises for their offices and residential houses throughout the country. These banks should develop and use green buildings for their office and employee accommodation.

These measures will not only help banks reduce their carbon footprint but also save the operational costs considerably.

E. Social Responsibility Services: As part of the green banking strategies, Indian banks can initiate various social responsibility services such as tree plantation camps, maintenance of parks, pollution check-up camps, etc.

REVIEW OF LITERATURE

E-commerce literature has studied the phenomenon of e-banking from different perspectives. Some research has analyzed the adoption and growth of e-banking, whilst others describe the challenges and benefits to be gained from e-banking services as far as the organization is concerned.

For the past two decades, the banking sector has chosen a new service channel based on the progress of information technology - the Internet- to respond to the changes in customer preferences and needs, increased competition from non-banks, changes in demographic and social trends, and government deregulations of the financial service sector The adoption of new IT applications is influenced largely by factors related to overall



organizational attitudes and culture as well technical and infrastructural elements.

Aladwani [2] conducted research about the drivers and challenges of online banking; the results of the study show that top bank managers are in support of a lack of internet specialists and changes in Internet technology being the principle issues relevant to online banking development whereas IT managers mentioned time and budget constraints and also immature Internet technology. The study also indicates that according to general and IT managers' technical obstacles are the most important challenge for the development of e-banking. Customers however mentioned internet security, online banking regulations and customers' privacy as the most important future challenges of e-banking.

Sathye [18] argued that, in the context of Internet banking, two kinds of price were accounted for; the normal costs associated with Internet activities, and the bank costs and charges which had a negative effect on the adoption of electronic banking everywhere. Rasoulia and Safari [14] carried out research concerning reasons as to why there was a lack of e-banking achievement; the result of the first chapter of their study showed the importance of Internet use, frameworks and encouraging policies to impress beneficiaries to use electronic banking. The second part introduced cultural elements as the most important challenge followed on by financial elements (the cost of the Internet and commissions) as the second influencing factor. The significance of technical elements is fading away according to their study due to improvements in the banking system. In addition their study highlighted other parameters such as management obstacles as also playing an important role in electronic banking.

A study carried out by Daniel [7] concluded that the price of electronic services, increased competition due to new entrants, and trust can be future challenges for banking systems considering e-banking. Additional research was conducted by Khorshid and Ghaneh [10] and in their article on ranking the challenges of e-banking identified for managers of banks; customers' privacy, security, and customers' trust as issues arising. For customers; reputation of bank, regulations and laws, and easy accessibility were seen as the main challenges for the development of e-banking.

Amadeh and Jafarpour [4] studied four groups of obstacles in a research titled "The study of obstacles and strategies to improve electronic banking in the perspective of Iran 1404." These obstacles included socio-cultural, managerial, financial and technical causes. The first two are accepted and the second two are rejected at the end of the study. Vaithianathan, S. [21] in his study comments that due to the high Internet penetration among developed countries' populations, these countries are able to deploy electronic commerce to their advantage, whereas developing countries are

still trailing far behind. Apart from this, other issues such as lack of technology infrastructure, lack of awareness, lack of skilled human resources, and the lack of government initiatives, including various economic and social factors are cited as hurdles that prevent pervasive e-commerce adoption in developing countries

There are studies showing positive correlation between environmental performance and financial performance (Hamilton, 1995; Hart, 1995; Blacconiere and Pattern, 1993). Thus, it is imperative for the banking institutions in the present context to consider environmental performance in deciding whether to invest in companies or advise clients to do so. The formation of different rules for environmental management like resource conservation, clean water act, clean air act, toxic substance control act are also viewed as potentially significant contributor to the recent increase in environmental liability for banking institutions. Adoption of these principles will offer significant benefits to banking institutions, to consumers and also the stakeholders. Credit risks are also associated with lending on the security of real estate whose value has diminished owing to environmental problems (additional loss in the event of default). Further, risk of loan default by debtors due to environmental liabilities because of fines and legal liabilities and due to reduced priority of repayment under bankruptcy. In few cases, banks have been held responsible for actions occurring in which they held a secured interest (Schmidheiny and Zorraquin, 1996 and Ellis, Millians and Bodeau, 1992).

There are also few cases where environmental management system has resulted in cost savings, increase in bond value etc. (Heim, G et al, 2005). In few cases the environmental management system resulted in lower risk, greater environmental stewardship and increase in operating profit. The banking and financial institutions should prepare an environmental risk and liability guidelines on development of protective policies and reporting for each project they finance or invest (Jeucken, 201). They can also have an environmental assessment requirement for the projects seeking finance. Banks also can issue Environmental hazards management procedures for the each project and follow through. The present green consumerism is more concerned with the quality of the products more than the quantity. In future, market will reward those industries or the companies, which emerge as the efficient users of the energy and raw materials and will penalize the less efficient one. Further, the investors in the stock market are equally aware of environmental pollution and would take a stand against those industries/institutions that do not comply with pollution norms (Gupta, 2003; Goldar, 2007). So the preferences of the investors will dry up in the case of polluting units and market capitalization will go down significantly. Thus,



financial institutions should help developing the right instruments to meet the needs of industry to control environmental impact.

Though Schmidheiny and Zorraquin (1996) concluded that banks are not hindering the achievement of sustainability, banks can also play a hindering role for sustainable development because (i) they prefer short-terms payback periods where as sustainable development needs long- term investment (ii) investment which take into account of environmental side-effects usually have lower rate of return in short-term (Jeucken and Bouma, 1999).

Therefore, sustainable investments are unlikely to find sufficient funding within current financial markets. Thus, government must design proper legislation of environmental rules for banks and ensure enforcement. The problems in India are the legislation is not yet framed and in few cases, things are not strictly enforced, but things can change overnight resulting in major compliance problems for the companies concerned and increased risk for the banks that have lent to them. There should be continuous dialogue relating to environmental matters with relevant audiences, including stakeholders, employees, customers, governments and the public.

'Green' in some studies, the term "green" refer to define a broad range of social, ethical and environmental dimensions. However, for the purpose of the study that tends to look into environmental aspect, "green" in the discussion is primarily to describe banks' impacts on the environment, environmental responsibility as well as environmental performances in their activities. (Bai 2011) on the other side GB 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 called as an ethical bank or a sustainable bank.(Thombre 2011), environmental impact of bank's external activity is huge though difficult to estimate. Thus, encouraging environmentally responsible investments and careful lending should be one of the responsibilities of the banking sector.(Sahoo and Nayak 2008). The bank should go green and play a pro-active role to take environmental and ecological aspects as part of their lending principle, which would force industries to go for mandated investment for environmental management, use of appropriate technologies and management systems (Hayder 2012). Verma 2012 stated that Indian banking is gradually coming to realize that there is need for a shift from the 'profit, profit and profit motive to 'planet, people and profit'. GB involves pursuing of financial and business policies that are not hazardous to environment and

help to protect environment. The purposes of GB are to use resources with responsibility avoiding waste and giving priority to environment and society.

Scope of Study

Since environment threat associated with the current generation and the way resources are being consumed and depleted the world over could have an impact over the existence of human race hence every small step made in the direction of saving the natural resources and discourage use of paper becomes a big step ultimately. Hence further study could be done in the area of promoting green banking and how to make green banking more user friendly.

Sampling Plan

Since it is not possible to study whole universe, it becomes necessary to take the sample from the universe to know about its characteristics.

- **Sampling units:** various respondents from Meerut
- **Sample technique:** random sampling
- **Research instrument:** structured questionnaire
- **Contact method:** Data collected through online or paper questionnaire
- **Sample Size- 100**

Analysis tools

The main analysis tool was paired sample t-test because there are 2 samples data private and public sector banks. Graphical representation tools like bar diagram, charts, pie charts were used for the purpose of visual analysis.

Research Limitations

- It was not possible to understand thoroughly about E-banking and green banking as it is vast area in such a short span of time.
- The primary data collected is restricted
- Behavior of the customer keeps on changing as they are continuously in linked with the external environmental happening.
- Consumer taste and preferences are hard to judge so it can change frequently.
- People were hard pressed with time so most of them were reluctant to answer.

DATA ANALYSIS AND INTERPRETATION

The data thus collected was compiles in excel sheets meticulously and then analyses with the help of various analysis tools.



1) Categories of Respondents

Table - 1

| | Public Sector Banks | Private sector banks |
|--------|----------------------------|-----------------------------|
| Male | 70 | 55 |
| female | 30 | 45 |

2) Different Age groups

Table - 2

| | Public sector banks | Private sector banks |
|----------|----------------------------|-----------------------------|
| Below 25 | 20 | 30 |
| 25-40 | 30 | 30 |
| 40-50 | 25 | 20 |
| Above 50 | 25 | 20 |

3) Occupation

Table - 3

| | Public sector banks | Private sector banks |
|---------------|----------------------------|-----------------------------|
| Professional | 45 | 30 |
| Self employed | 25 | 20 |
| Salaried | 20 | 45 |
| Other | 10 | 5 |

4) When the respondents were asked about the name of the bank in which they had their account

Table- 4

| Name of banks | No. of responses |
|---------------------------|-------------------------|
| State bank of India | 50 |
| Punjab national Bank | 15 |
| HDFC Bank | 10 |
| ICICI Bank | 5 |
| State bank of Patiala | 8 |
| Oriental bank of commerce | 6 |
| Any other | 6 |

5) Awareness about E-Banking

Table - 5

| Parameter | No. of respondents |
|------------------|---------------------------|
| Fully aware | 30 |
| Had an idea | 63 |
| No | 7 |
| Total | 100 |

6) Awareness about the various e-banking services

Table - 6

| | Public | Private |
|------------------|---------------|----------------|
| ATM | 85 | 90 |
| Debit Card | 85 | 90 |
| Credit Card | 60 | 63 |
| Phone Banking | 24 | 32 |
| Mobile Banking | 15 | 20 |
| Internet Banking | 65 | 60 |



Paired Samples Statistics

| | Mean | N | Std. Deviation | Std. Error Mean |
|---------------|---------|---|----------------|-----------------|
| Pair 1 public | 55.6667 | 6 | 29.94439 | 12.22475 |
| private | 59.1667 | 6 | 28.94420 | 11.81642 |

Paired Samples Correlations

| | N | Correlation | Sig. |
|-------------------------|---|-------------|------|
| Pair 1 public & private | 6 | .989 | .000 |

Ho: there is no significance difference in awareness level of public and private sector banks' customers regarding e-banking.

There are 2 variables so applying paired sample T test

Paired Samples Test

| | Paired Differences | | | | | t | df | Sig. (2-tailed) |
|-------------------------|--------------------|----------------|-----------------|---|---------|--------|----|-----------------|
| | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | Lower | Upper | | | |
| Pair 1 public - private | -3.50000 | 4.46094 | 1.82117 | -8.18147 | 1.18147 | -1.922 | 5 | .113 |

From the table it is observed that significance value is above 0.05 so null hypothesis has been accepted and concluded that there is no significance difference bet difference in awareness level of public and private sector banks' customers regarding e-banking.

Paired Samples Correlations

| | N | Correlation | Sig. |
|-------------------------|---|-------------|------|
| Pair 1 public & private | 6 | .989 | .000 |

Correlation is 0.986 there is positive correlation between public and private sector banks.

7) Familiarity with internet

Find out whether the respondents were familiar about the WWW in table-7

Table -7

| Duration | No. of respondents |
|-------------------|--------------------|
| Less than a month | 0 |
| 1 to 6 month | 0 |
| 6 to 12 month | 0 |
| More than a year | 100 |

8) Frequency of use of e-banking services

Find out the frequency of use of various e-banking services. According to the collected responses of private and public banks. In table-8(A)

Mode of e-banking utilized over period of time in **public sector banks**



Table -8(A)

| | Factors | Once in a day | Once in a week | Once in a fortnight | Once in a month | Infrequently |
|---|-------------------|---------------|----------------|---------------------|-----------------|--------------|
| A | ATM | 4 | 45 | 23 | 12 | 16 |
| B | Online Banking | 6 | 13 | 21 | 23 | 11 |
| C | Telephone Banking | 0 | 0 | 2 | 5 | 2 |
| D | Mobile Banking | 3 | 7 | 12 | 15 | 5 |
| E | SMS Banking | 0 | 0 | 1 | 1 | 1 |

Mode of e-banking utilized over period of time in private sector banks

Table -8(B)

| | Factors | Once in a day | Once in a week | Once in a fortnight | Once in a month | Infrequently |
|---|-------------------|---------------|----------------|---------------------|-----------------|--------------|
| A | ATM | 5 | 40 | 19 | 26 | 10 |
| B | Online Banking | 8 | 15 | 13 | 25 | 12 |
| C | Telephone Banking | 0 | 3 | 7 | 11 | 20 |
| D | Mobile Banking | 4 | 12 | 20 | 18 | 7 |
| E | SMS Banking | 3 | 9 | 17 | 23 | 5 |

9) Main reason for branch visit

Table -9

| | |
|-------------------|----|
| Make a deposit | 78 |
| Investment advice | 0 |
| Balance inquiry | 12 |
| Cash withdrawal | 6 |
| other | 4 |

10) Purchase product through online modes

TABLE-10

| | |
|-----|----|
| Yes | 76 |
| No | 24 |

11) Reason for choosing particular bank

Table -11

| | |
|--|----|
| I have a traditional bank account with the same bank | 46 |
| The brand name of the bank | 24 |
| The excellent service offered by this bank | 18 |
| others | 12 |

12) Willingness to provide credit card and purchase information

Table-12 (A)

| Factors | Strongly agree | agree | neutral | disagree | Strongly disagree | Mean score value |
|------------|----------------|-------|---------|----------|-------------------|------------------|
| Mobile | 20 | 30 | 30 | 15 | 5 | 3.45 |
| Fax | 15 | 25 | 25 | 25 | 10 | 3.10 |
| WWW/E-mail | 25 | 30 | 35 | 5 | 5 | 3.65 |



Table -12(B)

| Factors | Strongly agree | agree | neutral | disagree | Strongly disagree | Mean score value |
|------------|----------------|-------|---------|----------|-------------------|------------------|
| Mobile | 30 | 20 | 30 | 10 | 10 | 3.50 |
| Fax | 10 | 20 | 35 | 15 | 20 | 2.85 |
| WWW/E-mail | 30 | 35 | 25 | 7 | 3 | 3.82 |

Mean score value

| | Public sector banks | Private sector banks |
|------------|---------------------|----------------------|
| Mobile | 3.45 | 3.50 |
| fax | 3.10 | 2.85 |
| WWW/E-Mail | 3.65 | 3.82 |

Paired Samples Statistics

| | Mean | N | Std. Deviation | Std. Error Mean |
|---------------|--------|---|----------------|-----------------|
| Pair 1 public | 3.4000 | 3 | .27839 | .16073 |
| private | 3.3900 | 3 | .49427 | .28537 |

Paired Samples Correlations

| | N | Correlation | Sig. |
|-------------------------|---|-------------|------|
| Pair 1 public & private | 3 | .999 | .024 |

Ho: there is 0.024 significance difference in Willingness to provide credit card and purchase information
 There are 2 variables so applying paired sample t-test

Paired Samples Test

| | Paired Differences | | | | | t | df | Sig. (2-tailed) |
|-------------------------|--------------------|----------------|-----------------|---|--------|------|----|-----------------|
| | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | Lower | Upper | | | |
| Pair 1 public - private | .01000 | .21633 | .12490 | -.52740 | .54740 | .080 | 2 | .943 |

From the table it is observed that significance value is above 0.05 so null hypothesis has been accepted and concluded that there is significance difference btw difference in Willingness to provide credit card and purchase information

Paired Samples Correlations

| | N | Correlation | Sig. |
|-------------------------|---|-------------|------|
| Pair 1 public & private | 3 | .999 | .024 |

Correlation is 0.999 there is positive correlation between public and private sector bank

13) Key decision variables in E-banking



Table-13(A)

| Factors | Strongly agree | agree | neutral | disagree | Strongly disagree | Mean score value |
|-----------------------|----------------|-------|---------|----------|-------------------|------------------|
| All time availability | 35 | 45 | 10 | 5 | 5 | 4.00 |
| Ease of use | 40 | 40 | 12 | 6 | 2 | 4.10 |
| Nearness | 50 | 35 | 7 | 5 | 3 | 4.24 |
| Security | 25 | 30 | 15 | 20 | 10 | 3.40 |
| Direct access | 45 | 25 | 20 | 6 | 4 | 4.01 |

Table -13(B)

| Factors | Strongly agree | agree | neutral | disagree | Strongly disagree | Mean score value |
|-----------------------|----------------|-------|---------|----------|-------------------|------------------|
| All time availability | 45 | 40 | 10 | 3 | 2 | 4.23 |
| Ease of use | 35 | 35 | 15 | 10 | 5 | 3.85 |
| Nearness | 30 | 40 | 8 | 12 | 10 | 3.68 |
| Security | 40 | 30 | 10 | 10 | 10 | 3.80 |
| Direct access | 50 | 35 | 5 | 7 | 3 | 4.22 |

Mean score value

| | Public sector banks | Private sector banks |
|-----------------------|---------------------|----------------------|
| All time availability | 4.00 | 4.23 |
| Ease of use | 4.10 | 3.85 |
| Nearness | 4.24 | 3.68 |
| security | 3.40 | 3.80 |
| Direct access | 4.01 | 4.22 |

Paired Samples Statistics

| | Mean | N | Std. Deviation | Std. Error Mean |
|---------------|--------|---|----------------|-----------------|
| Pair 1 public | 3.9320 | 5 | .31412 | .14048 |
| private | 3.9560 | 5 | .25324 | .11325 |

Paired Samples Correlations

| | N | Correlation | Sig. |
|-------------------------|---|-------------|------|
| Pair 1 public & private | 5 | .091 | .884 |

Ho: there is 0.884 significance difference in Key decision variables in E-banking services..
 There are 2 variables so applying paired sample T test

Paired Samples Test

| | Paired Differences | | | | | t | df | Sig. (2-tailed) |
|-------------------------|--------------------|----------------|-----------------|---|--------|-------|----|-----------------|
| | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | Lower | Upper | | | |
| Pair 1 public - private | -.02400 | .38514 | .17224 | -.50221 | .45421 | -.139 | 4 | .896 |

From the table it is observed that significance value is above 0.05 so null hypothesis has been accepted and concluded that there is significance difference bet difference in Key decision variables in E-banking services..



Paired Samples Correlations

| | N | Correlation | Sig. |
|-------------------------|---|-------------|------|
| Pair 1 public & private | 5 | .091 | .884 |

Correlation is 0.91 there is positive correlation between public and private sector banks
 14) Problems in using E-banking services

Table-14(A)

| | Factors | Strongly agree | Agree | neutral | Disagree | Strongly disagree | Mean score value |
|---|----------------------------------|----------------|-------|---------|----------|-------------------|------------------|
| A | Time consuming | 30 | 30 | 20 | 10 | 10 | 3.6 |
| B | insecurity | 25 | 28 | 17 | 20 | 10 | 3.38 |
| C | ATM cut of order | 20 | 25 | 30 | 20 | 5 | 3.35 |
| D | Amount debited but not withdrawn | 28 | 32 | 15 | 18 | 7 | 3.56 |
| E | Card misplaced | 50 | 35 | 7 | 4 | 4 | 4.23 |
| F | Misuse of card | 45 | 40 | 10 | 3 | 2 | 4.22 |

Table-14(B)

| | Factors | Strongly agree | Agree | neutral | Disagree | Strongly disagree | Mean score value |
|---|----------------------------------|----------------|-------|---------|----------|-------------------|------------------|
| A | Time consuming | 40 | 25 | 15 | 15 | 5 | 3.80 |
| B | insecurity | 15 | 20 | 25 | 25 | 15 | 2.95 |
| C | ATM cut of order | 24 | 26 | 20 | 18 | 12 | 3.32 |
| D | Amount debited but not withdrawn | 34 | 20 | 26 | 13 | 7 | 3.61 |
| E | Card misplaced | 45 | 35 | 12 | 4 | 4 | 4.13 |
| F | Misuse of card | 50 | 40 | 4 | 3 | 3 | 4.31 |

Mean score value

| | Public sector banks | Private sector banks |
|----------------------------------|---------------------|----------------------|
| Time consuming | 3.6 | 3.80 |
| insecurity | 3.38 | 2.95 |
| ATM cut of order | 3.35 | 3.32 |
| Amount debited but not withdrawn | 3.56 | 3.61 |
| Card misplaced | 4.23 | 4.13 |
| Misuse of card | 4.22 | 4.31 |

Paired Samples Statistics

| | Mean | N | Std. Deviation | Std. Error Mean |
|---------------|--------|---|----------------|-----------------|
| Pair 1 public | 3.7240 | 6 | .40163 | .16396 |
| private | 3.6867 | 6 | .50615 | .20663 |



Paired Samples Correlations

| | N | Correlation | Sig. |
|-------------------------|---|-------------|------|
| Pair 1 public & private | 6 | .910 | .012 |

Ho: there is 0.12 significance difference in Problems in using E-banking services
 There are 2 variables so applying paired sample T test

Paired Samples Test

| | Paired Differences | | | | | t | df | Sig. (2-tailed) |
|-------------------------|--------------------|----------------|-----------------|---|--------|------|----|-----------------|
| | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | Lower | Upper | | | |
| Pair 1 public - private | .03733 | .21787 | .08894 | -.19131 | .26597 | .420 | 5 | .692 |

From the table it is observed that significance value is above 0.05 so null hypothesis has been accepted and concluded that there is significance difference bet difference Problems in using E-banking services

Paired Samples Correlations

| | N | Correlation | Sig. |
|-------------------------|---|-------------|------|
| Pair 1 public & private | 6 | .910 | .012 |

Correlation is 0.910 there is positive correlation between public and private sector bank

15) Meaning of green banking

In order to find out the definition of green banking as understood by the respondents they were asked what according to them green banking meant:

Table-15

| | |
|----------------------------------|----|
| Online banking | 22 |
| Paper less banking | 20 |
| Sustainable banking | 10 |
| Ethical banking | 14 |
| Environmental friendly practices | 31 |
| Reducing carbon footprints | 3 |

16) Popularity of green banking

In order to find out whether respondents prefer green banking more over the traditional bank in table 16

Table-16

| | |
|-----|----|
| Yes | 84 |
| No | 16 |

17) Roles of various categories of banks in promoting green banking

To check the respondents view about role of public and private banks when they asked about who were promoting green banking more in table-17

Table-17

| | |
|---------|----|
| Public | 45 |
| Private | 55 |



18) Efforts towards green banking separately required or merge with e-banking efforts

Table-18

| | |
|---|----|
| Present efforts are sufficient | 30 |
| Present efforts need to be complemented with separate efforts | 55 |
| I am not aware of any such efforts made. | 15 |

FINDINGS, SUGGESTIONS & CONCLUSION

The present study revealed that the awareness level of E-banking was very high among the respondents but the same cannot be said about green banking. All the respondents were of the view that there was need to promote E-banking and green banking. The interpretation of the various questions revealed many valuable conclusions.

- Majority of respondents had awareness about E-banking services.
- Popular E-banking services in order are ATMs, debit card, credit card, phone banking, mobile banking, internet banking.
- All the banks of all the respondents provided ATM facility majority of them provided online and mobile banking but very few were provide SMS banking.
- ATM is the most properly utilized e-banking facility in public sector banks & private sector banks.
- It is also being found that the awareness level of E-banking is gradually increasing and customers are increasing using e-banking.
- There is need for government and the policy makers to do more to promote green banking. Targeting the MSME sectors would be good move so that the maximum pollution creating industries could be asked to cut down the emissions and get loans at cheaper rate.
- Cheap loans could also be provided to the industries purchasing green equipment as well building green equipment.
- In India there is a major risk of the emergence of a digital divide as the poor are excluded from the internet and so from the financial system.
- Every today, the operational environment for public, private and foreign banks in the Indian financial system is quite different.
- The reason of choosing particular bank is based on customers different perceptions either they are familiar with same bank services having account in particular bank or due the attractive advertisements about the brand name of bank and services offered by bank

- Majority of respondents want to adopt green banking. Since our sample size was of young generation hence awareness among environmental issues is relatively higher as compared to other age groups. That's the reason green banking gains more popularity
- Majority of respondents agreed that enough was being done and more efforts were needed to promote green banking. Thus the RBI policy makers need to make better framework in order to promote green banking in India
- Only a major policy move by the government and the increasing role of RBI in framing guidelines can be a solution. banks should look only at the profit but at the triple bottom line of people planet and profit.
These are some findings and suggestions from the study.

CONCLUSION

In a rapidly changing market economy where globalization of markets has intensified the competition, the industries and firms are vulnerable to stringent public policies, severe law suits. This would affect the banks and financial institutions to recover their return from investment. Thus, the banks should play a pro-active role to take environmental and ecological aspects as part of their lending principle which would force industries to go for mandated investment for environmental management, use of appropriate technologies and management systems.

Green Banking if implemented sincerely will act as an effective *ex ante* deterrent for the Polluting industries that give a pass by to the other institutional regulatory mechanisms. There has not been much initiative in this regard by the banks and other financial institutions in India though they play an active role in India's emerging economy. The banking and financial sector should be made to work for sustainable development. As far as green banking is concerned.

India's banks and financial institutions are running behind time. None of our banks or financial Institutions have adopted equator principle even for the sake of records. None of them are Signatory to the UNEP Financial Initiative statement. It is time now that India takes some major Steps to gradually adhere to the equator principles-guidelines that use



environment-sensitive Parameters, apart from financial, to fund projects.

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