# Geographical Locations of Banks as an Influencer for Green Banking Adoption

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## Abstract

**The twenty first century began with strong initiatives towards environmental protection and sustainable development as advancements in operations such as transport, manufacturing and process, telecommunication, information technologies, and services etc. around the world became evident. The deteriorating environment at a rapid rate has raised an alarming demand for immediate steps towards protection of the environment and saving of the environment from further deterioration. Today, developmental activities look only at the economic benefits exploiting the limited natural resources in an unplanned and unchecked manner overlooking the needs of the future, and all industrial sectors in the world economy including the banking sector are facing huge challenges with environmental problems and their related impacts in day-to-day businesses. The banking sector and its role in sustainable development was studied through its new initiative to control environmental pollution in the very beginning level of seeking financial assistance for industrial activities and getting assurance from the proprietors, which is commonly recognized as green banking. In this paper, the effect of geographical locations of the respondents on green banking adoption was also studied through statistical analysis of the data collected using a specially designed questionnaire duly incorporating the factors of green banking. The study revealed that geographical locations of the banks played a significant role on the green banking adoption, but no impact was observed due to demographic parameters such as age, gender, experience, and position of the respondents.**

***Keywords:*** **green banking adoption, demographic parameters, respondent, location of the bank, Indian banks**

**JEL Classification: E5, G2, G3, Q5**

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The world today is progressing at a very rapid rate with industrialization and developmental activities taking place everywhere. However, such development is also causing several environmental problems which have been either been left unattended or very little attention has been given to the same till date.

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Though industrialization and developmental activities have provided all comfort and luxury to human beings, it has done so at the cost of our environment and all these activities have created a crisis situation in the global environment. Our current and future actions result into changes that are difficult to reverse due to the scale of the risk created. This crisis is across the globe and requires a coordinated effort from the world governments and the global business fraternity as a whole including the public (The World Business Council for Sustainable Development, 2010). Dunphy, Griffiths, and Benn (2003) concluded in their study that due to the global environmental crisis, organizations have to adequately consider the environmental risks when making decisions. Businesses are the prime area where green philosophy needs to be appreciated and implemented for providing stability to the society and the environment alike. Organizations from various sectors are participating actively in area of sustainability which will help in coping up with the situation of environmental crisis (Tara, Singh, & Kumar, 2015). Huge cost of environmental degradation has made environmental sustainability a major challenge for India. In order to prevent further degradation, the economic strategy needs to be integrated with sustainable development goals (Saarangapani & Sripathi, 2015). Many Indian companies are investing in efficient and clean technologies to reduce their carbon footprints. Accordingly, Dutta and Roy (2014) studied the way Indian companies are reacting to the environmental threats and future opportunities to move towards low carbon green developments.

Green banking is considered as one of the major trends in modern businesses by banks (Kassaye, 2001). Although, several definitions can be found from the literature, the key theme of all the definition points to the same target of sustainable banking by the bank for the benefit of the society and the planet. Banks are major source of fund in any economy, so they can encourage carbon footprint reduction by the industries to which they provide loans (Tara & Singh, 2014).

Though green banking (also known as environmental friendly banking, ethical banking, or sustainable banking) can be defined in a number of ways in a broader perspective, it is defined as promoting environmentally friendly practices that aid customers in reducing their carbon footprint through their banking operation activities. According to The Indian Banks' Association, a 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 (Indian Banks' Association, 2014). According to Institute of Development and Research in Banking Technology (IDRBT) (2013), green banking is to make internal bank processes, physical infrastructure, and IT infrastructure as effective and efficient as possible with zero or minimal impact on the environment. The UNEP Finance Initiative (2007) stated that sustainable banking considers the impacts of its operations, products, and services on the ability of the current and future generations to meet their needs. To aid the reduction of external carbon emission, banks should finance green technology and pollution reducing projects. Green banking aims at combining operational improvements, technology, and changing clients' habits in the banking business. It is like a normal bank, which considers all the social and environmental factors with the aim of conserving the environment. It is a form of banking which considers the social and environmental impacts (Biswas, 2011 ; Jha & Bhome, 2013; Mishra, 2013).

There are other definitions for the green banking concept, but the central meaning is the same, that is, protecting the environment and resources for future generations by looking for sustainable development. It includes various activities in banks' day to day activity. Green banking includes several things like sustainable banking, ethical banking, green mortgage, green loans, green credit cards, green savings accounts, green checking accounts, green money markets accounts, mobile banking, online banking, etc. Green banking helps to create effective and far-reaching market-based solutions to address a range of environmental problems, including climate change, deforestation, air quality issues, and biodiversity loss, while at the same time identifying and securing opportunities that benefit customers. According to Rashid (2010), banks should prioritize in providing loans to the sectors that promote various environmental protection activities. Mani (2011) stated that banks as

socially responsible corporate citizens play a significant role in the reduction of carbon emission. A bank set up with the purpose of sustainable banking is Triodos Bank, Netherlands. This bank is also a pioneer in launching of "green fund" for financing green projects and finances only for those organizations which work on social, cultural, and environmental values (Dash, 2008).

↳ **Relationship Between Respondents and Green Banking Adoption :** Jeucken (2001) in his study made a comparison among three regions, that is, Europe, North America, and Oceania for the period from 1998-2000 and analyzed some important differences between regions, countries, and banks with regard to sustainable banking adoption. In a study, Smith and Perks (2010) revealed that there is a significant impact of position occupied by respondents in the business and number of years in the business on the green adoption by a firm. Gilg, Barr, and Ford (2005) stated that limited research has been conducted to access the influence of demographic variables on the green practices implementation. Williams (2005) revealed that the evidence of the influence of demographics on green business practices is very less. Chitra (2007) concluded that there has been a great increase in the inclusion of green approach into business practices and thus recommended that the impact of the demographic variables should be investigated.

## Objectives of the Study

The prime objective of the study is as follows :

↳ To examine whether the location of banks has any impact on green banking adoption.

The other associated objectives of the study are :

**(1)** To examine if work experience of the respondent has any impact on green banking adoption.

**(2)** To study whether designation, age, and gender of the respondents has any influence on the green banking adoption.

**(3)** To study criteria for objective setting and decision making and its impact on green banking adoption.

## Research Questions

In order to accomplish the above objectives, the following research questions were adhered to :

**(1)** To what extent does the location of the bank influence the green banking adoption?

**(2)** To what extent does the age, work experience, designation, and gender of the respondents has an impact on green banking adoption?

**(3)** To find out which criteria for objective setting and decision making has more impact on green banking adoption.

## Rationale of the Research

The usual long queues that characterize the traditional branch banking in most banks necessitated the need to conduct this study. This is because the higher the green banking adoption rates, the lesser the queues in the traditional bank branches. Furthermore, it is essential for the banks to understand the demographic factors that

influence green banking adoption if they are to stay competitive and relevant. It is also imperative for customers to understand the benefits offered under the green banking umbrella. In the present work, an attempt has been made to understand the effect of location of the banks and other demographic features on green banking adoption by the respondents.

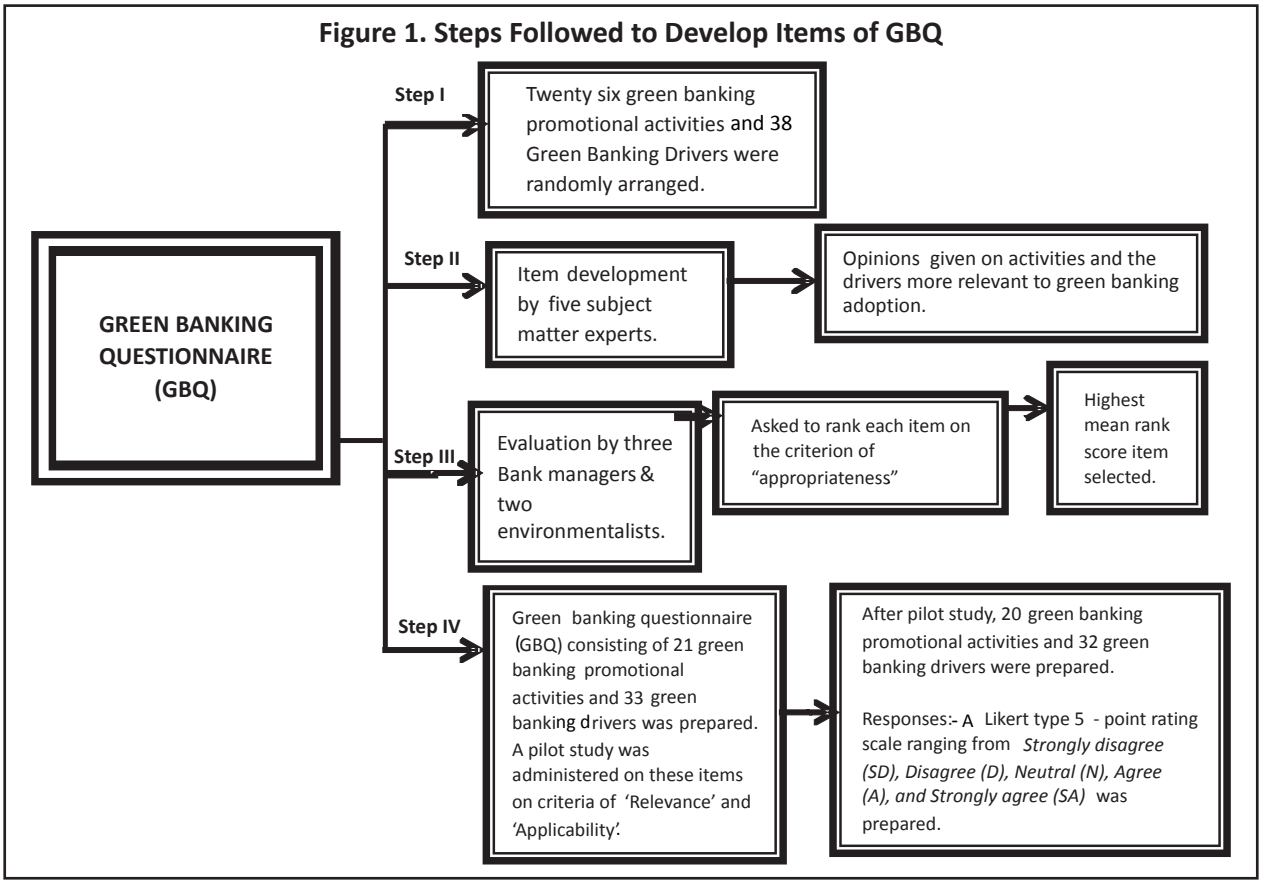
Sustainability is the prime focus of all the businesses. In a study, Smith and Perks (2010) revealed that there is a significant impact of position occupied by the respondents and number of years in the businesses on the green adoption by a firm. However, no such study has yet been conducted in the Indian banking sector ; so, this research gap has been addressed in the present study.

Besides, Jeucken (2001) in his study analyzed some important differences between regions, countries, and banks with regards to sustainable banking adoption. So, the present study also covers the impact of location of the banks in the adoption of green practices which has not so far been addressed in context to the banks in the different regions of India.

## Scope of the Study

The scope of the present study was restricted to top three private and public sector banks of India in terms of asset under management located in the states of Jharkhand, Bihar, Maharashtra, and West Bengal. These top three banks are State Bank of India, Punjab National Bank, Bank of Baroda from the public sector and ICICI Bank, HDFC Bank, and Axis Bank from the private sector.

**Figure 1. Steps Followed to Develop Items of GBQ**



## Identification of Items

Under green banking promotional activities, a total of 26 items and under green banking drivers, a total of 38 items were identified through literature review. These items were finally reduced to 21 items and 33 items for green banking promotional activities and green banking drivers, respectively after having being reviewed by subject matter experts, bank managers, and environmentalists. After the pilot study was conducted, these items were further reduced to 20 items for green activities and 32 items for green drivers. Thus, the final questionnaire comprised of 20 green banking promotional activities and 32 green banking drivers. The steps followed to develop the items of GBQ are described with the help of Figure 1.

## Data Collection

A total of 310 green banking questionnaires (GBQ) were administered to employees of these banks working in the cities like Mumbai, Bangalore, Kolkata, Delhi, and Pune (categorized as "Tier 1" cities) ; Ranchi and Patna (categorized as "Tier 2" cities) ; and Dhanbad, Muzzafarpur, Sindri, and Bokaro (categorized as "Tier 3" cities).The survey work started in the month of February 2015 from Dhanbad city. Gradually, within three months, 310 questionnaires were distributed to the managers of the selected banks in the selected cities either through mail or through personal visits. It took almost eight months of time to receive the responses from different branches of the selected banks. Finally, after carrying out screening of responses, the responses of only 242 participants were found to be complete in all respects and hence were considered for the analysis. Out of the complete 242 responses, 59 were collected from Tier I cities, 87 responses from Tier 2 cities, and 96 responses were collected from Tier 3 cities. Cluster sampling technique was used in the present study. The survey work was completed in the month of October 2015.

Once the final 20 "green banking promotional activities" and 32 "green banking drivers" were identified, a Likert type 5-point scale was prepared which constituted the items including those activities and drivers. The responses on the scale ranged from *"strongly disagree" (SD), "disagree" (D), "neutral" (N), "agree" (A),* and *"strongly agree" (SA)*. There was also a question on sustainability for understanding the level of importance given to the environmental aspect in banks' decision making process. This question was also evaluated on a similar 5 - point likert scale. The final questionnaire also included the demographic details of the respondents like age, gender, work experience (in years), designation (managerial level) along with name of the city where the bank was located. The scale was pretested on 16 branch managers. A total of 310 questionnaires were distributed among the managers of selected banks in different cities. Out of the total 310 distributed questionnaires, only 242 complete responses were received and were used for statistical analysis.

## Data Analysis and Results

An attempt was made to see whether the features such as location of banks, years of experience of the respondents, and designation of the respondents had any impact on green banking initiatives using different methods of data analysis. The aspects of green banking such as green banking promotional activities and green banking drivers were further individually divided into independent parameters. Applying the item and principal component analysis, it was identified and further confirmed through brain - storming discussions and untiring interactions with various customers and bankers that Environmental Sensitivity (ES), Environment Friendly Measures (EFM), and Encouraging Measures for Customers (EMC) are the three independent parameters of green banking promotional activities, and Policy Reform Initiatives (PRI), Regulatory Control for Societal Benefit (RCSB), and

Pressure from External Agencies (PEA) are the three independent parameters of green banking drivers. The statistical analysis of the data was carried out to examine the correlations between green banking and the results have been discussed in detail in the following section.

From the study of 32 green banking drivers and 20 green banking promotional activities, six factors were arrived at - three each from the two groups. After the factor analysis, there was further reduction of items from 20 to 19 and from 32 to 28 in green banking promotional activities and green banking drivers, respectively. The Table 1 shows the items included under different factors of green banking promotional activities as derived from factor analysis. Environmental Sensitivity (ES) has 10 items, Environment Friendly Measures (EFM) has five items, and Encouraging Measures for Customers (EMC) has four items.

Similarly, Table 2 shows the items included under different factors of green banking drivers as derived from factor analysis. Policy Reform Initiatives (PRI) has 15 items, Regulatory Control for Societal Benefit (RCSB) has eight items, and Pressure from External Agencies (PEA) has five items in all.

The Table 3 shows the summarized list of factors for green banking promotional activities and green banking drivers. Regression coefficients of location of banks with factors of green banking promotional activities and green banking drivers have been presented in the Table 4.

An attempt was made to witness whether the location of banks has any impact on green banking initiatives. In the present study, all the respondents were from the banks located in urban areas. The metropolitan cities such as Kolkata, Chennai, Mumbai, and Delhi, where all infrastructure and transport facilities are up to the satisfaction of the customers have been considered as a reference point and the regression analysis of the location of the respondents' banks and its deviation from its reference point has been carried out in order to perceive the impact of deviation of banks from the center of the urban, that is, the reference point. While calculating the regression coefficient, "Location" was taken as independent variable and the factors of green banking promotional activities

**Table 1. Three Factors Along with the Items Derived Through Factor Analysis for Green Banking Promotional Activities**

| Environmental Sensitivity (ES) | Environment Friendly Measures (EFM) | Encouraging Measures for Customers (EMC) |
|---|---|---|
| Combined transportation system and energy consciousness. | Green internal meetings | Green vehicle loan |
| Promotion of green buildings and green infrastructure for the banks' branches. | Adoption of clean technology and energy saving equipments. | Green data centers and green IT. |
| Water consumption reduction and use of recycled products. | Sustainability reporting and green audits. | Avoid use of cheques and promote the use of electronic banking services. |
| Green investment plans for investors | Waste management through recycling, especially of paper and appropriate disposal of e-waste. | Green home loans |
| Carbon disclosure projects | Financing of renewable energy projects. | |
| Sharing information with the employees through electronic banking system. | | |
| Minimum use of paper through promotion of electronic banking system. | | |
| Sharing information with customers on products and services through electronic banking channel. | | |
| Green process innovation | | |
| Carbon credit business | | |

**Table 2. Three Factors Along with the Items Derived Through Factor Analysis for Green Banking Drivers**

| Policy Reform Initiatives (PRI) | Regulatory Control for Societal Benefit (RCSB) | Pressure from External Agencies (PEA) |
|---|---|---|
| Increase in the customer base | Solution to environmental problems | Pressure from environmentalist groups |
| Image enhancement | Transition to a low carbon economy | Pressure due to international guidelines and frameworks |
| Legal risk management | Pressure from RBI | Customer pressure |
| Improvement in the financial performance/profitability | Improvement in the asset quality | Pressure from NGOs |
| Competitors' pressure | Tackling climate change and promotion of environmental sustainability | Pressure from media |
| Better relationship with the stakeholders | Sustainability reporting/non-financial reporting | |
| Reward and recognition | Employees' pressure | |
| Technological and operational improvements | Pressure from the government | |
| Accomplishment of organizational mission | | |
| Cost reduction | | |
| Opportunity for new business | | |
| Performance enhancement and better service to the customers | | |
| Reputational risk management | | |
| Competitive advantage | | |
| Credit risk management | | |

**Table 3. Summarized Table of Factors of Green Banking Promotional Activities and Green Banking Drivers**

| Domains/Factors | |
|---|---|
| **Green Banking Promotional Activities** | **Green Banking Drivers** |
| Environmental Sensitivity (ES) | Policy Reform Initiatives (PRI) |
| Environment Friendly Measures (EFM) | Regulatory Control for Societal Benefit (RCSB) |
| Encouraging Measures for Customers (EMC) | Pressure from External Agencies (PEA) |

**Table 4. Regression Coefficient of Location of Banks with Factors of Green Banking Promotional Activities and Green Banking Drivers (*n* = 242)**

| Domains/Factors | *R* | *R* Square | Adjusted *R* Square |
|---|---|---|---|
| Environmental Sensitivity | 0.830 | 0.689 | 0.687 |
| Environment Friendly Measures | 0.587 | 0.345 | 0.342 |
| Encouraging Measures for Customers | 0.803 | 0.645 | 0.643 |
| Policy Reform Initiatives | 0.784 | 0.615 | 0.613 |
| Regulatory Control for Societal Benefit | 0.631 | 0.398 | 0.396 |
| Pressure from External Agencies | 0.688 | 0.474 | 0.471 |

and green banking drivers were taken as dependent variables.

The results of regression coefficient reveal that all the values of adjusted *R* square are significant, indicating that the location of banks plays a significant role in implementing green banking initiatives in banks. The results of the regression coefficients are presented in Table 4, and the relation between various factors with location of banks

**Table 5. Relationship of Location of Banks with Factors of Green Banking Promotional Activities and Green Banking Drivers (*n* = 242)**

| Domains/Factors | Equation |
|---|---|
| Environmental Sensitivity | $Y = 49.588 - 9.457X$ |
| Environment Friendly Measures | $Y = 22.464 - 3.188X$ |
| Encouraging Measures for Customers | $Y = 20.111 - 3.533X$ |
| Policy Reform Initiatives | $Y = 79.378 - 12.611X$ |
| Regulatory Control for Societal Benefit | $Y = 36.058 - 4.677X$ |
| Pressure from External Agencies | $Y = 20.225 - 3.473X$ |

***Note.*** Independent Variable *'X'* = Location of bank of the respondents ; Dependent Variable *'Y'* = Domain/Factors

of the respondents is given in the Table 5. The slope of each equation possesses a negative sign, which indicates the decreasing trend of the factors of green banking promotional activities with the increase in distance from the metropolitan cities. The intercept, that is, the value of the factors of green banking promotion activities when the distance from the metropolitan cities is 0 indicates the measure of the concern with environmental quality. The results of the statistical analysis show that the measure of the concern of the banks with environmental quality with respect to : Environmental Sensitivity is 49.588, Environment Friendly Measures is 22.464, Encouraging Measures for Customers is 20.111, Policy Reform Initiatives is 79.378, Regulatory Control for Societal Benefit is 36.058, and Pressure from External Agencies is 20.225.

It can be observed that Environmental Sensitivity (ES) correlates only 69% with location of the respondents' banks. Similarly, Environment Friendly Measures (EFM) correlates 34%, Encouraging Measures for Customers (EMC) correlates 64%, Policy Reform Initiatives (PRI) correlates 61%, Regulatory Control for Social Benefit (RCSB) correlates 40%, and Pressure from External Agencies (PEA) correlates 47% with the location of the respondents. In statistical analysis, generally the regression equations with 3% - 7% error may be allowed ; whereas, the acceptance of the equations with more than 7% error depends upon the nature of the problem that is being dealt by the researchers. In the present regression analysis, the factors of green banking promotion activities and green banking drivers vary from 32% to 60%, which may be accepted as the analysis is not considering the distance between the geological locations, but indexed values based on the infrastructure and transport facilities of the location up to the customers' satisfaction as per the norms of the government in classification of Indian cities. For instance, Prime Kolkata is indexed to be 0, outer Kolkata or Kolkata - Salt lake to 1, Ranchi to 2, and Dhanbad to 3.

The degree of green protection (DGP) of a bank with respect to the six identified green banking factors, namely ES, EFM, EMC, PRI, RCSB, and PEA can be obtained by integrating the measures of each factor as follows :

$$y(x) = \sqrt{\frac{\sum_{i=1}^{6}[M_i(x)]^2}{N}}$$

where, $y$ is the DGP value, $M_i(x)$ is the measure of $i^{th}$ green factor at indexed distance $x$.

From the analysis of the data, it can be obtained that $y(0) = 43.55$, $y(1) = 36.47$, $y(2) = 29.42$, $y(3) = 22.41$, $y(4) = 15.53$, $y(5) = 9.03$, and $y(6) = 4.86$. Since the data collection was carried out from the banks situated within the domains centered at different metropolitan cities such as Kolkata, Delhi, Mumbai, and Bengaluru, and all the data have been clubbed together, the results are of those banks of a particular city, but of those banks that fall

within the respective tiers. The results reveal that the DGP value of any bank is inversely proportional to its indexed geographical location from the metropolitan cities. Further, each city possesses an impact factor that represents the ability to influence the next level city for promoting green banking around its surrounding banks. The estimated maximum indexed distance including decimals while DGP value is 0 minus its corresponding indexed distance, that is, independent of the DGP of its banks, that is, the impact factor of the city at indexed distance $x$, $IF = x(y = 0) - x$. In the present study, the impact factor of the metropolitan cities, namely Kolkata, Delhi, Mumbai, and Bengaluru can be estimated from the clubbed data as follows :

If $y = ax + b$ is the linear least square fit of the set of estimated data in the form of an ordered pair $(x,y)$, then the value of $x$ while $y = 0$ is the impact factor of the city. In the present study, the linear least square fit is derived to be $y = -6.6014x + 42.842$ and the impact factor of the metropolitan cities, that is, the cities located at indexed distance 0 is 6.489835 – 0 = 6.489835 (Figure 2). Similarly, the impact factor of the cities at indexed distance 1 is 6.489835 – 1 = 5.489835, the same at $x = 2$ is 4.489835, at $x = 3$ is 3.489835, at $x = 4$ is 2.489835, at $x = 5$ is 1.489835, and at $x = 6$ is 0.489835.

The Table 6 gives the domain with maximum and minimum as initial and boundary conditions for indexing the domain that represents the locations of the respondents' banks. The upper limit of the domain is defined when the

**Table 6. Boundary Conditions for Location of Banks of Respondents (Index Value) when the Value for Factors is Zero and Vice Versa**

| Domains/Factors | Index Value for Location of Bank of the Respondents (Domains/ Factors = 0) | Index Value for Domains/Factors (Location of Bank of the Respondents = 0) |
|---|---|---|
| Environmental Sensitivity (ES) | 5.243 | 49.588 |
| Environment Friendly Measures (EFM) | 7.046 | 22.464 |
| Encouraging Measures for Customers (EMC) | 5.692 | 20.111 |
| Policy Reform Initiatives (PRI) | 6.294 | 79.378 |
| Regulatory Control for Societal Benefit (RCSB) | 7.709 | 36.058 |
| Pressure from External Agencies (PEA) | 5.823 | 20.225 |

**Figure 2. Linear Least Square Fit of the Plots of DGP Values of the Banks Against its Indexed Distance**

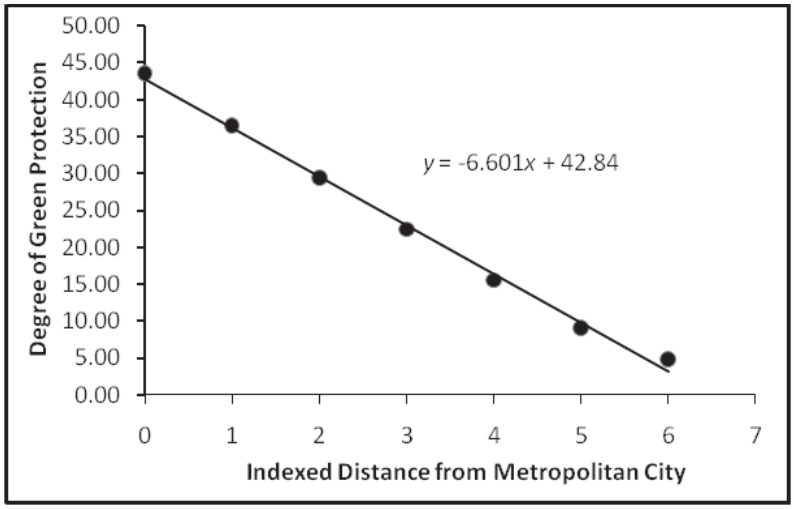


**Figure 3. Plot of Index Value of Location of Bank Categorized as Tiers and Predicted Index**

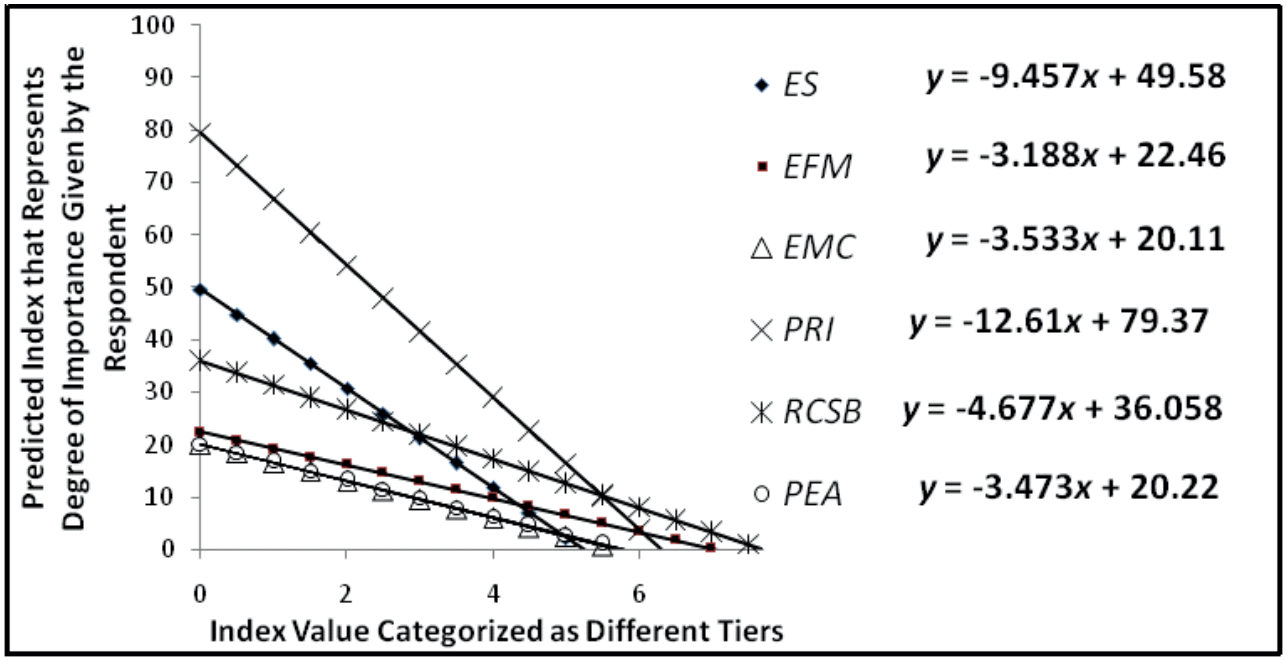



**Table 7. Regression Coefficient of Designation of the Respondents with Factors of Green Banking Promotional Activities and Green Banking Drivers (*n* = 242)**

| Domains/Factors | *R* | *R* Square | Adjusted *R* Square |
|---|---|---|---|
| Environmental Sensitivity | 0.052 | 0.003 | -0.001 |
| Environment Friendly Measures | 0.463 | 0.214 | 0.211 |
| Encouraging Measures for Customers | 0.022 | 0.000 | -0.004 |
| Policy Reform Initiatives | 0.321 | 0.103 | 0.099 |
| Regulatory Control for Societal Benefit | 0.454 | 0.206 | 0.202 |
| Pressure from External Agencies | 0.175 | 0.031 | 0.027 |

**Table 8. Relationship of Designation of the Respondents with Factors of Green Banking Promotional Activities and Green Banking Drivers (*n* = 242)**

| Domains/Factors | Equation |
|---|---|
| Environmental Sensitivity | $Y = 28.108 + 0.585X$ |
| Environment Friendly Measures | $Y = 10.882 + 2.465X$ |
| Encouraging Measures for Customers | $Y = 12.682 - 0.093X$ |
| Policy Reform Initiatives | $Y = 42.539 + 5.064X$ |
| Regulatory Control for Societal Benefit | $Y = 19.678 + 3.298X$ |
| Pressure from External Agencies | $Y = 11.087 + 0.868X$ |

***Note.*** Independent Variable '*X*' = Designation of Respondents ; Dependent Variable '*Y*' = Domain/Factors

**Table 9. Regression Coefficient of Years of Experience with Factors of Green Banking Promotional Activities and Green Banking Drivers (*n* = 242)**

| Domains/Factors | *R* | *R* Square | Adjusted *R* Square |
|---|---|---|---|
| Environmental Sensitivity | 0.205 | 0.042 | 0.038 |
| Environment Friendly Measures | 0.507 | 0.257 | 0.254 |
| Encouraging Measures for Customers | 0.108 | 0.012 | 0.007 |
| Policy Reform Initiatives | 0.453 | 0.205 | 0.202 |
| Regulatory Control for Societal Benefit | 0.488 | 0.238 | 0.235 |
| Pressure from External Agencies | 0.375 | 0.141 | 0.137 |

**Table 10. Relationship of Years of Experience with Factors of Green Banking Promotional Activities and Green Banking Drivers (*n* = 242)**

| Domains/Factors | Equation |
|---|---|
| Environmental Sensitivity | $Y = 25.961 + 1.511X$ |
| Environment Friendly Measures | $Y = 11.748 + 1.782X$ |
| Encouraging Measures for Customers | $Y = 11.842 + 0.307X$ |
| Policy Reform Initiatives | $Y = 42.030 + 4.718X$ |
| Regulatory Control for Societal Benefit | $Y = 20.926 + 2.342X$ |
| Pressure from External Agencies | $Y = 10.101 + 1.225X$ |

***Note.*** Independent Variable *'X'* = Years of experience of the respondents ; Dependent Variable *'Y'* = domain/factors

**Table 11. Descriptive Statistics of Criteria for Objective Setting and Decision Making (*n* = 242)**

| Criteria for Objective Setting and Decision Making | No. of Respondents | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Economic Growth of the Bank (EG) | 242 | 4 | 5 | 4.96 | 0.190 |
| Benefit Given to the Society by the Bank (BS) | 242 | 3 | 5 | 4.10 | 0.750 |
| Concern for the Environment Protection (CEP) | 242 | 2 | 5 | 3.84 | 0.942 |

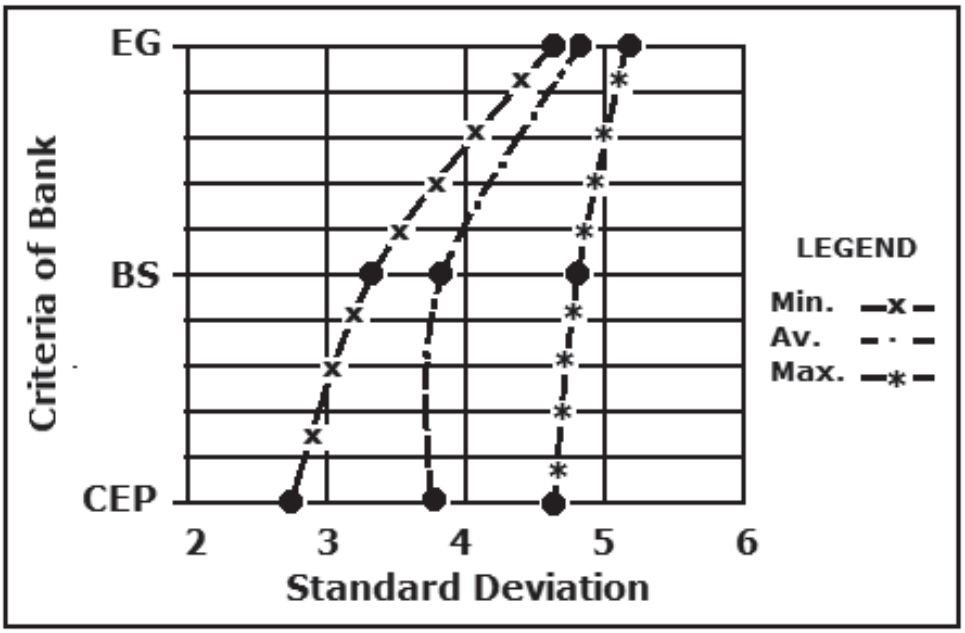
factors tend to zero ; whereas, the lower limit is defined when the factor is kept at the maximum value, that is, 100. The equations presented in Table 5 have been plotted to explain the relationship of factors of green banking promotional activities with the location of the bank of the respondents (Figure 3).

Similarly, linear regression relationships between designation and years of experience of the respondents with various factors of green banking were analyzed. The linear equations listed in Table 7, Table 8, Table 9, and Table 10 reveal that no relations are found between designation and years of experience of the respondents with various factors of green banking with appreciable correlation coefficients so that the relationships might be accepted.

From the Table 11, it can be seen that the orientation of the bank employees towards the sustainable approach of the bank is not balanced. Economic growth of the bank is given the maximum importance followed by the benefit concern for society and the least importance is given to the issues of environmental protection. In Figure 4, the plot of minimum, mean, and maximum value of Likert scale for assessing the three factors, that is, EG, BS, and CEP shows that the deviation gradually increases when it moves from CEP to EG through BS.

It can be observed from the plot (Figure 4) that more deviation is for concern for environmental protection, showing that banks are still not sensitive towards the global issue of environmental protection as the time

Figure 4. Plot of Standard Deviation with Various Criteria for Objective Setting and Decision Making




demands. Economic growth of the banks still stands at top and others like benefit given to the society by the bank and environmental protection are still crawling to get their due position at the side of economic growth. From the survey, it has been found that things are changing now, but the pace is slow. It is high time now that all the three components should be treated equally in order to achieve the goal of sustainable development.

## Conclusion

In the present study, an innovative approach for assessing the environmental concern of the banking sector has been addressed, and a new concept of assessing the impact factor of a metropolitan city with reference to the green banking factors has also been introduced. The analysis and interpretation of the responses collected through questionnaire administration by the use of factor analysis were carried out. The relationship of green banking with the location of the bank, gender of the respondents, managerial position of the respondents, and years of experience of the respondents has been established with the help of regression analysis. The results reveal that there is an impact of only the location of the bank on the adoption of green banking. The DGP value of the banks located at the studied locations is estimated to be 43.55 and its impact factor is 6.4898. If the data are analyzed separately for the domains centered with different cities, the DGP values of the banks and impact factors of the cities can be compared and researchers can determine ranks of the cities with respect to the green banking factors and green banking adoption.

## Managerial Implications

As the findings of the present study show that the location of banks act as an important item in the adoption of green banking by Indian banks, so the top managements of banks should give priority to banks' branches located in the less developed areas to attain sustainable practices. For example, bank managements can organize regular

training programmes for the managers deputed in those areas regarding various ways of adoption of green practices. Also, banks need to train managers from these areas regarding how they can acquaint their retail as well as corporate customers regarding the importance of green banking practices and their adoption.

## Limitations of the Study and Scope for Further Research

**(1)** The present study covers only the urban areas of India. The scope of the study can be widened by including the rural areas to get more exhaustive results.

**(2)** The study covers three types of cities, that is, Tier 1, Tier 2, and Tier 3 cities. But the number of respondents from all the locations is not equal. If an equal number of respondents was taken from all the three types of locations, then the results may have been slightly different.

**(3)** The data collection was carried out from the banks situated within the domain centered at different cities under Tier 1, Tier 2, and Tier 3 categories and the all the data have been clubbed together.

**(4)** The number of respondents from each managerial position is not the same.

The present study was carried out on only six Indian banks, so there is further scope to conduct the same study including more banks from both private as well as public sectors. The study can also be carried out on a larger sample size for a clearer picture. Foreign banks located in India were not included in the present study ; so, there is scope to cover them in future studies. Also, there is good scope to cover banks' branches located in the rural areas as a large percentage of Indian population resides in the rural areas.

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