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SMART Environmental Performance of Public and Private Sector Banks - A Comparative Study

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ABSTRACT

People, planet and profit are not a phrase, but a faith in the society. Maintaining a balance between the human capital and natural capital is the integral part of Bank's functioning. The stakeholders put their faith on Banks' operation to ensuring environmental sustainability. For the sustainable development of the nation, commitment to the environment is necessary. Therefore, the banks are long standing their belief on the core values like customer focus, operational excellence, leadership, people and sustainability. Here the sustainability is one of the core values of the Bank, and it believes that maintaining a balance between conservation of natural resources and economic progress is needed. Over the years, as a responsible leading private enterprise HDFC Bank has made their efforts to minimize environmental impact through advancement of specialized activities. Since 2010, the bank undertaking the estimation of Carbon Foot prints each year and have been disclosing their Environmental performance through the Carbon Disclosure Project (CDP). And the bank also committed to follow the nine principles of National Voluntary Guidelines. The present paper attempted to study these environmentally friendly practices of HDFC Bank in the light of primary and secondary data. The data were collected from the head offices of selected districts in Kerala for understanding their involvement in environmental responsible activities. The study results that all the selected districts are almost carryout most of the advancement like digital banking, mobile banking, renewable energy, waste management, energy conservation, natural resources management, IT initiatives etc.

Keywords: Environment, Banking Practices, Digital Banking, Energy management practices.

INTRODUCTION:

Environmental management is a crucial issue in the global scenario. Economy measure its development by way of economic prosperity, social responsibility and environmental sustainability. Therefore, in the earlier stage the primary consideration of financial sector is economic development by way of profit. But in later, the perspective has been changed in to social responsibility as well as environmental sustainability. It led to the transformation of the logo "Profit, Profit, Profit" to "Planet, People and Profit". Hence the responsibility of every individual is to maintain environmental sustainability through green economy. Now a days, business sectors are very proud to introduce different policies and strategies to preserve eco system balance. In the banking sector, the concept of "go green" strategy is developed and followed for environmentally friendly banking services by reducing the consumption of carbon footprints from the in-house and out-house banking practices.

The concept of Green Banking is relatively a new concept. It is paperless banking, which not only reducing the cost of banking activities, but also helps in environmental sustainability, it helps in reducing the use of paper, power and energy (Gordon &Natassa, 2006). Green banking is making technological improvements, operational improvements and changing client's habits in the banking sector. This can be done in many ways like using the online services instead of traditional banking services, paying bills rather than standing on long queue and

finding an online space instead of branch banking, etc.
The banking sector should encourage green banking initiatives which take care the following points: -

- Sustainable development and use of natural renewable resources.
- Protection of human health
- Bio-diversity occupational health
- Safety efficient services
- Delivery and use of energy
- Pollution prevention and waste minimization
- Solid and chemical waste management
- Providing option for customers to invest in environmentally friendly banking products.
- Investing in resources that combine ecological and social concern.

REVIEW OF LITERATURE:

(Ramila & Gurusamy, 2015) investigated green banking practices on profitability of public sector banks. The hypotheses were framed and identify that, the coefficient of ECS and ATM transactions created more influence on profitability when compared to other green banking practices.
(Singh, 2015) analyzed different phases of green banking viz, Ecological green banking, environmental green banking and sustainable green banking. The result found that most of the green banking initiatives taken by the banks lies under second phase of Environmental Green banking. The study concluded that, Indian green banking practices are at start-up mode but still a lot of channels are institutionalized by the Indian banks for greening their activities.
(Girish, 2016) reviewed the concept of green coin rating, standard rating for green competent banks and banking practices in India. This rating process is mainly done on the basis of green practices like green rewards, low carbon emission, green building, green investment, paperless work etc. the study discloses the perception of stakeholders and 90% of the respondents are frequently using paperless banking activities and 80% of them are satisfied with these services. Therefore, it is possible to suggestthat, green banking institutions are diversifying their strategies by the positive utilization of resources.
(Rajesh & Dileep, 2014) addressed the role of selected Indian banks in sustainable development through green banking. PNB made their contribution by signed in "Green Pledge" of the Ministry of New and Renewable Energy, ICICI introduced "Go Green" mantra by finding and managing green technology projects by partnership with world bank and UNAID, SBI is the first bank to handle the venture of "Green Home" by offering environmentally friendly residential projects and HDFC launched "Carbon Credit Plus" to finance the future clean development mechanism project etc.
(Chakrabarti, 2014) attempted to examine the role of new generation bank on eco sustainability. The study reports that private sector banks like ICICI, HDFC, AXIS and Kotak Mahindra Bank are taking various initiatives such as promoting environmental awareness among society, giving more weightage to environmentally friendly commercial projects, supporting various pollution control measures, promoting environment management system certification, energy efficient production recycling etc.
(Sudhalakshmi & Chinnadorai, 2014) made an attempt to address the satisfaction and awareness based on green banking practices. In this study green banking practices attributed to green checking, green loans, green mortgage, use of energy, solar ATMS, paperless and recycling. The study shows that, aggregate 77% of the respondents are aware about these practices and also 73% of the respondents are satisfied from the usage.
(Saleena, 2014)examined the comparison between SBI (public sector bank) and ICICI (private sector bank) initiatives on green banking. The paper firstly intended to open the reason for going green like increment of energy consumption, consumer interest on environmentally friendly products and higher expectation of the public on environmental responsibilities etc. The result of the study highlights that, initiatives of SBI and ICICI in the area of green initiatives of internal operations and environmentally sustainable financing.
(Sharifi & Hossein, 2015) carried out a research work to made SWOC analysis of public sector banks in the area of green banking. It is attempted to notify the futuristic approach of these public sector banks by considering three aspects of triple bottom line approach ie, the people, planet and profit for the different operations like green excellence, green rating agency, green investment fund, green insurance and accounting disclosure.

STATEMENT OF THE PROBLEM:

Maintenance of ecological balance and environmental sustainability is the recent issue for debate around the globe. Due to environmental consciousness and awareness, business can no longer run with profits only. Therefore adoption "go green mantra" by the consideration of triple bottom line approach (Planet, People and

Profit) is very important. There is a need of banks to adopt green strategies into their operations, buildings, investments and financing strategies. Banks can contribute to the environment by careful lending and investments by the introduction of Green Banking. Green Banking Covers two aspects; - being judicious use of all resources, energy and reducing carbon footprints and being encouraging and financing only environment friendly investment. Green banking is relatively a new concept, so what is required to study is awareness level, adoption level and its usage for the contribution of SMART environmental performance.

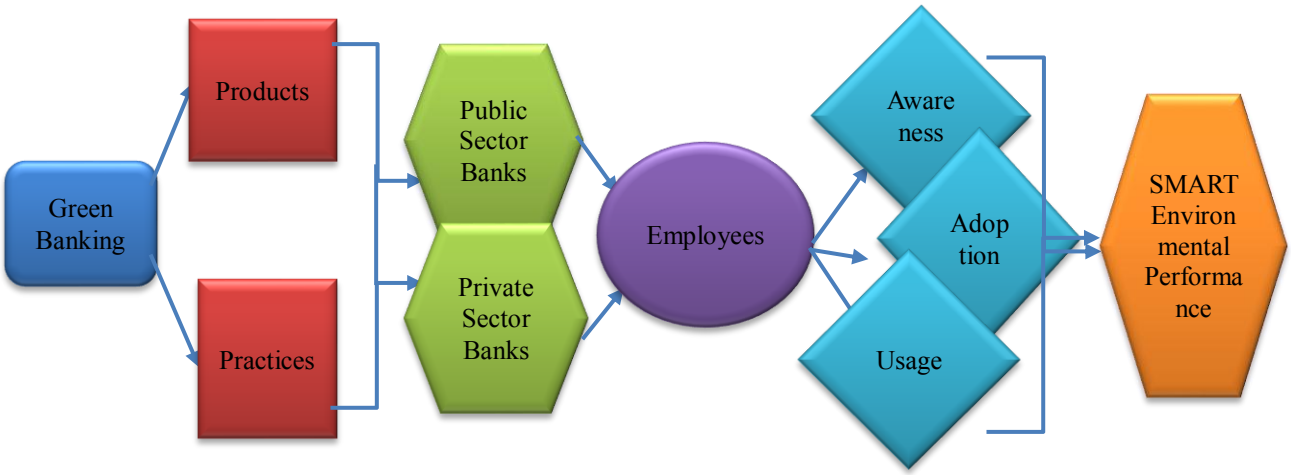
OBJECTIVES OF THE PAPER:

1. To identify the awareness level of the bank employees towards green banking practices
2. To measure the adoption practices (Accessibility, Affordability, Acceptability) of bank employees on green banking practices
3. To assess the usage of green banking practices.
4. To analyze the contribution of awareness, adoption and usage for SMART environmental performance.

HYPOTHESES:

1. There is no relationship between awareness and environmental performance.
2. There is no relationship between adoption and environmental performance.
3. There is no relationship between usage and environmental performance.

THEORETICAL MODEL:



METHODOLOGY AND DATABASE:

The methodology followed in the present work is briefly explained in the following sections.

Method of Research:

The work is both descriptive and analytical nature. It is descriptive because it is fact finding investigation and focuses on particular facets and dimensions of the problem by gathering descriptive information. Since the study uses the statistical methods for analyzing the quantitative data, it can be described as an analytical study also.

Sources of data:

A. Secondary data: The secondary data needed for the study has been collected form Annual Report, Business Responsibility Report, Sustainability Report, Research dissertation and theses, Journals, Articles and Magazines.
B. Primary Data: The primary data have been collected from the Bank employees of SBI, Canara, PNB, HDFC, ICICI and Federal Bank in Malappuram District.

Sample Design:

A. Population: The population of the study comprises the bank of employees of Bank employees of SBI, Canara, PNB, HDFC, ICICI and Federal Bank in Malappuram District.
B. Sampling Techniques: Simple Random Sampling
C. Sample Size: The Sample size is restricted to 120.

D. Tools/ Instruments for Data Collection: A structured questionnaire was used as the instrument for the collection of primary data. The questionnaire starts with demographic details of the bank followed by questions relating to awareness, adoption, usage and environmental performance.
E. Pilot study and Pretest: For finalization of the scale, the pre-testing was done among 30 respondents. The questionnaire was also cross-checked by the experts in the field like academicians, Bank Managers and their suggestions are incorporated within it.
F. Reliability Testing: For the scale evaluation, reliability testing generally applied. In this study, the reliability of the measurement scales was tested by using Cronbach' Alpha Reliability Coefficient.
G. Normality Testing: The normality of the data was tested by using the test of Skewness and Kurtosis to see whether the deviation is problematic. Skewness and Kurtosis values should be in the range of +_2.58 and +_1.96. (Hair, Black, Anderson and Tatham, 2006). Here, none of the values are above this limit hence univariate normality can be generally assumed.
H. Tools for Data analysis: Structural Equation Modelling using AMOS

GREEN BANKING PRACTICES:

Internet Banking:
It is the medium used by the financial institution to conduct a range of financial transactions through their official website. It is the core banking system developed by the banking instead of the traditional banking i.e., branch banking. These banks are operated their function as virtual bank where they completely under the umbrella of digital platform. Internet banking offers personal as well as corporate banking features like checking transaction, making payments, transfer of funds, ordering cheque books, download application for M-banking and E- bankingetc. Security of customer financial information and reputational risks to the bank is very important while considering internet banking.

Mobile Banking:
It is a service conducted by the financial institution that allows the customer to use financial transaction remotely through the use of mobile devices. It is related with use of some applications which can be downloaded from the authorized website of banks. Financial transactions through this mobile banking is mainly depend upon the features of banking applications (App_s) like obtaining account statements, list of latest transactions, bill payments, fund transfers etc. Mobile banking is not free from challenges, for eg:- handset accessibility, security, reliability, application management, user adoption and personalization etc.

Cashless Banking:
It describes the financial transaction through electronic representation of money like debit card, credit card, POS terminals, Mobile wallets etc. it is experienced high level digital technology in commerce, investment and daily life transactions. It has different advantages like reduced business risks and costs, reducing transmission errors, transaction speed is very high, reduction of criminal activity by the elimination of high denomination kept in the pocket, easier consumer budgeting etc. Cash less banking has its own limitations like privacy issues, problems of unbanked people, fraudulent activities, over spending and centralized control etc.

Green financing:
It is the financial instrument to increase level of financial flows from the public or private to sustainable development priorities. It is the distribution of finance to the sectors which carry out the process of clean and green energy maintenance. The main aim of this kind of finance is to reduce carbon footprints and maintaining ecological balance. The capital allocate today will shape the co systems and the productions and consumption pattern of tomorrow.

Green Energy Saving Practices:
- Installation of solar powered system and wind mills
- Switch to new, energy-efficient light bulbs such CFLs and LEDs.
- Undertake water management practices through rain water harvesting system.
- Conduct awareness campaign from school classes for the protection of resources, for eg:-SEED.
- Conduct energy efficient auditing system.

Green Innovation:
- Core Banking Solutions to integrate different banking transactions at a point.

- Green PIN: - Application, cancellation and modification of any debit or credit card PIN details digitally.
- Green channel counter for the effective and efficient minimization of time and energy in the branch banking.
- Queue management system can reduce to the queue for taking token before making any branch banking transactions.
- SWAYAM, the passbook printing machine can reduce the time of customer to print the details in passbook.

Green Policy and Procedures:
Environmental policy is the is the commitment of any organization or financial institution to comply the rules and regulations concerning to environmental issues. The issues are generally including water, waste and eco system management. "The concept of environmental policy integration (EPI) refers to the process of integrating environmental objectives into non-environmental policy areas, such as energy, agriculture and transport, rather than leaving them to be pursued solely through purely environmental policy practices". (Eccleston & March , 2010)

Green Investment:
It is the socially responsible eco-investment are made by the financial institutions and companies on or support environmental products and services. There are different eco investing sectors like renewable energy, solar panel, wind turbines, hybrid cars, energy efficient glass, lighting etc. some of the options an investor has if they want to build a green portfolio include securities, mutual funds, EFTs and bonds. The companies or the financial institutions create green fund in every year for invest in sustainable or socially responsible projects.

Green Communication:
It is the practice of selecting networking technologies and products for minimizing the resource usage whenever possible in all branches of communication. The main objective of the gree communication (digital communication) is to avoid data traffic through the medium of verbal communication. In banking sector various green communication techniques are adopted like, E transaction advises, Green Corporate Governance, Green Auditing, Online Webinars, Interactive Voice Response etc.

RESULTS AND DISCUSSIONS:

Mathematical Relationship between Awareness level and Adoption:
The correlation between awareness level of Green Banking and its adoption level has shown positive relationship, so a full SEM model is used to evaluate its mathematical relationship.

Model fit Indices- Awareness level and Adoption

	Chi square	DF	P	CMIN/DF	GFI	AGFI	NFI	TLI	CFI	RMR	RMSEA
Awareness and Adoption	133.323	64	.000	2.778	.917	.900	.909	.941	.965	.027	.022

Source: Primary data

The table shows the model fit indices of awareness level and adoption. Normed chi square value (CMIN/DF) is 2.778 which indicates that the model is acceptable. The model fit measures GFI (.917), AGFI (.900), NFI (.909), TLI (.941), CFI (.965), RMR (.027), and RMSEA (.022) shows that the model is fit to the data.

Regression Coefficient of Awareness level and Adoption

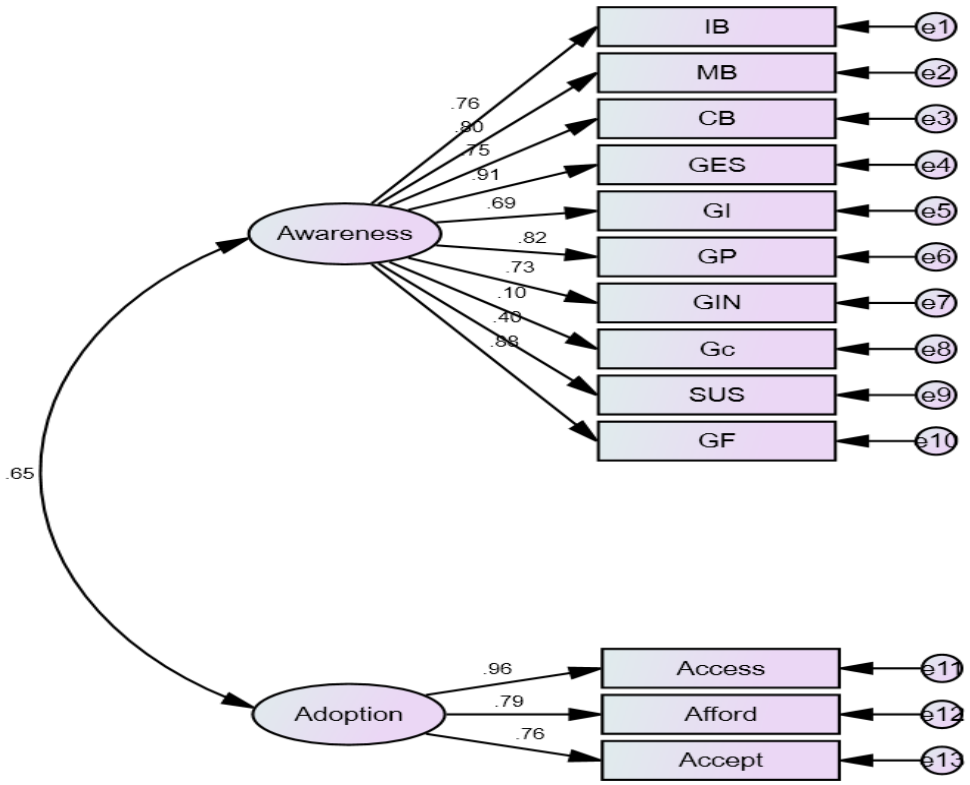
Path			Regression Coefficient	C.R	p
Awareness	→	Adoption	.654	21.71	<0.001
Internet banking	→	Awareness	.756	9.156	<0.001
Mobile banking	→	Awareness	.797	8.601	<0.001
Cash less Banking	→	Awareness	.755	10.708	<0.001
Green Financing	→	Awareness	.909	7.711	<0.001
Green energy saving practices	→	Awareness	.686	9.448	<0.001
Green Innovations	→	Awareness	.818	8.253	<0.001
Green policies	→	Awareness	.728	1.067	<0.001

Green Investment → Awareness	.100	4.324	<0.001
Green Communication → Awareness	.400	10.314	<0.001
Sustainability practices → Awareness	.881	11.610	<0.001
Accessibility → Adoption	.957	10.940	<0.001
Affordability → Adoption	.789	10.358	<0.001
Acceptability → Adoption	.762	11.920	<0.001

Source: Primary data

From the above table the regression equation of Awareness level of green banking practices on its adoption level is

Awareness level = 0.654 Adoption level of green banking, shows the result that one unit of increase in awareness will result in a 0.654-unit increase adoption level.



Mathematical Relationship between Adoption level and Usage of Green banking practices:

The mathematical relationship between adoption level and usage pattern have been analyzed since this relationship showed a positive influence on each other.

	Chi square	DF	P	CMIN/DF	GFI	AGFI	NFI	TLI	CFI	RMR	RMSEA
Adoption and Usage	294.61	19	.000	1.226	.941	.917	.903	.965	.912	.042	.035

Source: Primary data

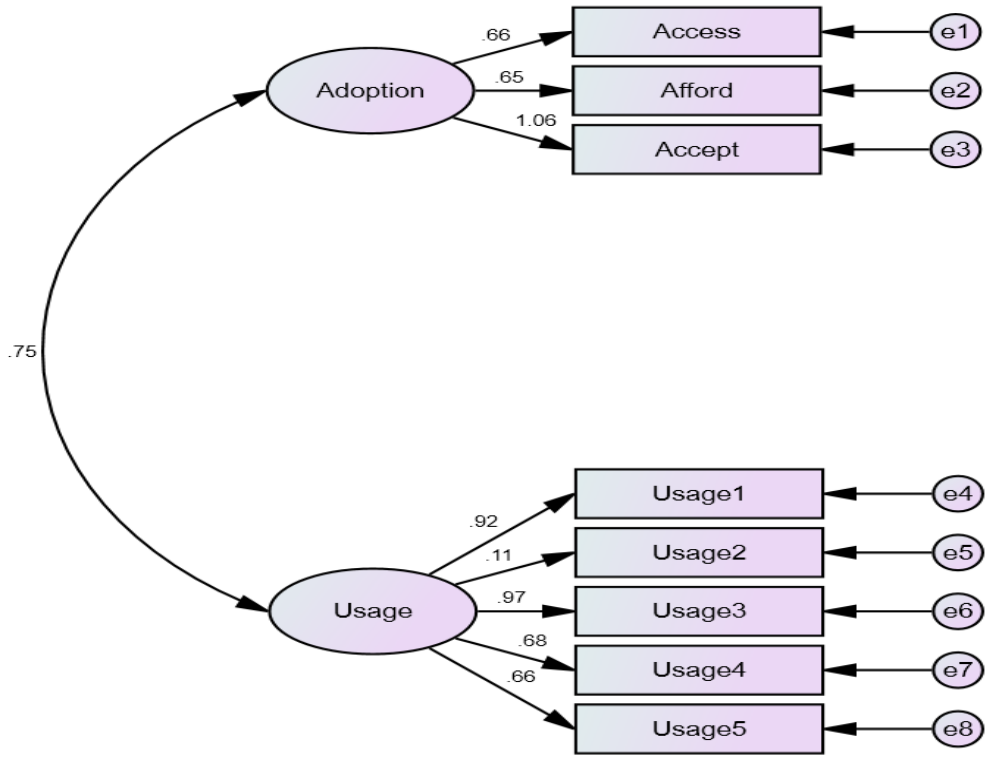
The table shows the model fit indices of adoption level and usage. Normed chi square value (CMIN/DF) is 1.226 which indicates that the model is acceptable. The model fit measures GFI (.941), AGFI (.917), NFI (.903), TLI (.965), CFI (.912), RMR (.042), and RMSEA (.035) shows that the model is fit to the data.

Path	Regression Coefficient	C.R	p
Adoption → Usage	.747	19.98	<0.001
Accessibility → Adoption	.661	7.147	<0.001
Affordability → Adoption	.648	8.989	<0.001
Acceptability → Adoption	.678	9.908	<0.001

Path	Regression Coefficient	C.R	p
Usage 1 → Usage	.920	1.161	<0.001
Usage 2 Usage →	.108	9.448	<0.001
Usage 3 Usage →	.969	9.291	<0.001
Usage 4 Usage →	.685	8.859	<0.001
Usage 5 Usage →	.664	7.046	<0.001

Source: Primary data

Form the above table the regression equation of adoption level and usage is
Adoption level = 0.747 usage, that means one unit increase in adoption level of green banking practices result in a 0.747-unit increase usage of this practices.



Mathematical relationship between awareness, adoption and usage level on SMART environmental performance: The mathematical relationship between awareness, adoption level and usage pattern on SMART environmental performance have been analyzed since this relationship showed a positive influence on each other.

	Chi square	DF	P	CMIN/DF	GFI	AGFI	NFI	TLI	CFI	RMR	RMSEA
Awareness, Adoption and Usage on SMART EP	177.717	17	.000	1.15	.954	.958	.899	.965	.896	.025	.021

Source: Primary data

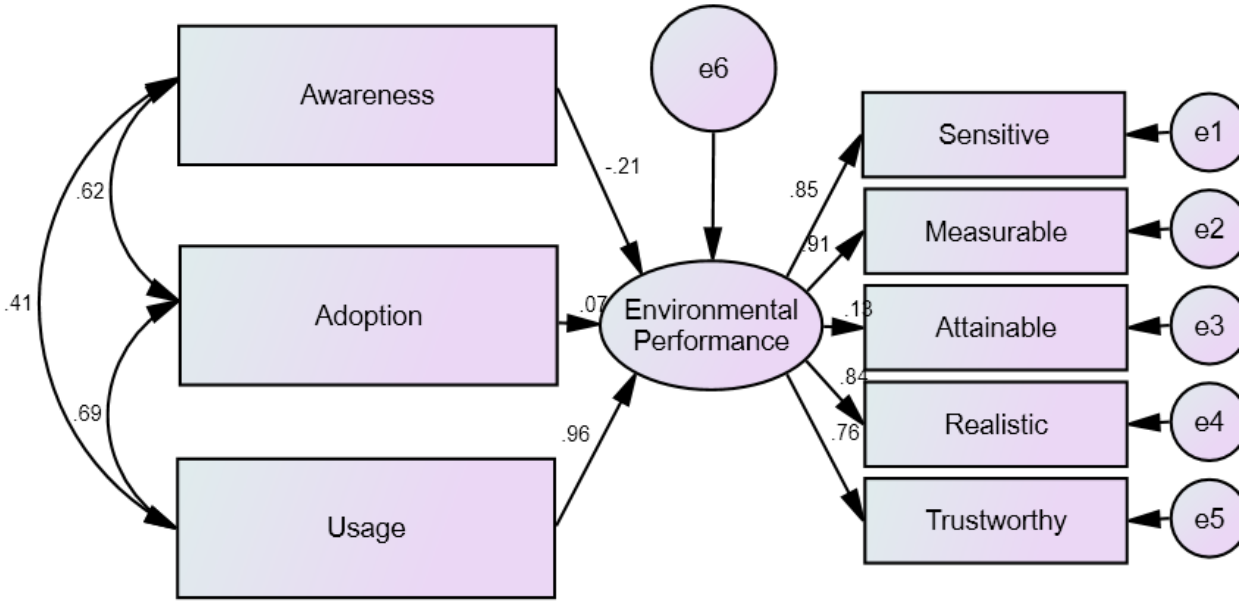
The table shows the model fit indices of awareness, adoption and usage level on SMART environmental performance. Normed chi square value (CMIN/DF) is 1.15 which indicates that the model is acceptable. The model fit measures GFI (.954), AGFI (.958), NFI (.899), TLI (.965), CFI (.896), RMR (.025), and RMSEA (.021) shows that the model is fit to the data.

Path	Regression Coefficient	C.R	p
Awareness → Usage	.413	4.160	<0.001
Adoption → Usage	.688	6.181	<0.001

Path			Regression Coefficient	C.R	p
Awareness	→	Adoption	.623	5.767	<0.001
Awareness	→	SMART environmental Performance	-.210	-3.773	<0.001
Adoption	→	SMART environmental Performance	.072	1,047	<0.001
Usage	→	SMART environmental Performance	.955	12.461	<0.001
Sensitive	→	Environmental Performance	.852	8.979	<0.001
Measurable	→	Environmental Performance	.911	13.665	<0.001
Attainable	→	Environmental Performance	.133	1.423	<0.001
Realistic	→	Environmental Performance	.836	11.679	<0.001
Trustworthy	→	Environmental Performance	.758	9.978	<0.001

Source: Primary data

From the above table the regression equation of SMART environmental performance - Awareness level - Adoption level and Usage are
Awareness level = -.210 SMART environmental performance
Adoption level = .072 SMART environmental performance
Usage = .955 SMART environmental performance
One unit increase on awareness level will lead to .210-unit decrease in SMART environmental performance, on the other hand one unit increase on adoption level results in .072-unit increase in SMART environmental performance and one unit increase in usage of green banking practices will lead to 0.955-unit increase in SMART environmental performance. It can be concluded that, usage of green banking practices increased more, the banking sector can assure better environmental performance.



CONCLUSION:

Sustainable environment is the prime motto of every business and financial sector in all respect. There should be Specific, Measurable, Attainable, Realistic and Trustworthy environmental performance. It can be achieved only after the consideration of green initiatives. Green banking, the sustainable banking introduced by the banking sector is ready to attain the objective of sustainable performance through online banking, green financing, green investment etc. The empirical analysis is carryout on the basis of certain initiatives of green banking. Mainly the study variables constrained to awareness level, adoption level (Accessibility, Affordability and Acceptability) and Usage pattern on SMART environmental performance. It is found that, one unit increase in awareness level, adoption level and usage will lead to 0.21, 0.072 and 0,955 unit increase in environmental performance simultaneously. In the current scenario, the Public and private sector banks are ready to meet the environmental performance of their system through different available instruments. Before that, there should be a mechanism to create awareness among employees and general public. Following suggestions will be useful for this Purpose.

- The subject of Green Banking may be introduced in the university syllabi.
- Conduct literacy programmes and training camps exclusively for bank employees to accomplish the aim of environmental performance.
- To make special funds and subsidies for carryout green management practices.
- Banks can conduct environmental accounting and furnish its data to the public to know about the adopted green practices.
- Central bank should introduce special kind of reward/awards to the banks for conducting innovative greener ideas.

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