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Emerging Role of Green Banking Practices in the Environmental Performance of Pakistan’s Commercial Banks

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ARTICLE DETAILS	ABSTRACT
<p>History: Received: December 19, 2022 Accepted: April 29, 2024</p> <p>Keywords: Promotion of E-Banking, Green Policy, Green Banking, Lack of Funds & Energy Crises, Environmental Performance</p> <p>DOI: 10.52700/assap.v5i1.220</p>	<p>From the recent years, researchers and other professional practitioners are emphasizing attention on green banking practices all over the world due to increasing effects on environment by their performances. The objective of this study is to analyze the impact of green banking practices on environmental performance of Pakistan’s commercial banks. Data was collected from the primary source as per the set explanatory research design based on quantitative research methodology. Simple and step wise multiple regression analyses have been performed to test the set hypotheses of this study. Descriptive and reliability analysis have been performed. A sample size of 202 bankers have been selected by using convenience sampling. The results concluded that promotions of e-banking and green policy posed the significant impact on bank’s environmental performance while training of the employees and lack of funds & energy crises remained insignificantly impactful. The main findings of the paper propound the role of banks and government in stimulating environmentally substantial and sustainable policies and technologies as exceedingly salient for increasing bank’s reputation and awareness among customers regarding green banking and positive influence by their practices.</p> <p>© 2024 The Authors, Published by WUM. This is an Open Access Article under the Creative Common Attribution Non Commercial 4.0</p>

1. Introduction

The scope of banks needs to be expanded from merely conventional to more strategic and environmentally conscious institutions in order to satisfy the demands of the UN Sustainable Development Goals (SDGs) (Carè, 2018). The world’s environment has gotten worse due to population growth, the usage of traditional energy sources, carbon dioxide emissions, and intensive economic activity (Wang & Zhang, 2021). The banking sector has seen a significant increase in sustainable banking practices, where green financing and investment operations are given priority, as a result of the concerning ecological conditions. Seeing the increasing environmental concerns, banks are attempting to promote a clean and sustainable environment in a comprehensive way. The banking sector has emerged as the primary engine of sustainable economic growth, with the goal of conserving money and safeguarding the environment (Nwagwu, 2020). As a proactive participant in global environmental initiatives, green banks voluntarily strive to preserve and enhance the

environment (Ibe-enwo et al., 2019), demonstrating their essential role in sustainability movements. Green banking promotes investments in environmentally friendly products and services, therefore preventing harm to the environment (Linh & Anh, 2017; Nizam et al., 2019). Numerous investigators emphasized Pakistan's ecological conditions' susceptibility. Pakistan is most likely experiencing an extremely severe metropolitan wind that is loaded of pollutants (Abbas et al., 2020). Pakistan consistently held the fifth position on the list of countries most susceptible to climate change (Eckstein et al., 2019). Contaminations such as heat waves and crippling smog/fog directly affect people's quality of life and ability to conduct business. Due mostly to the country's high carbon dioxide emissions, Pakistan's ecological contamination and impurity level is four times higher than that of the World Health Organization (Ullah & Takaaki, 2016). Addressing climate-related financial hazards and risks requires a comprehensive approach from all institutions, including banks, regulators, and financial actors (Galaz et al., 2018). The green banking projects in Pakistan were not well-researched. Javeria et al. (2019), for instance, used a qualitative study design to examine the obstacles to green banking in Pakistan. They suggested more research using quantitative models to look at the shift from traditional to sustainable (green) banking. Rehman et al. (2021) discovered in their most recent study on green banking that green banking practices (policy, operations, and investments) have a favorable effect on conventional banks' environmental performance in Pakistan. They demonstrated how green banking initiatives can be used to predict environmental performance and advised future studies to employ more thorough frameworks to comprehend green banking in Pakistan. The new study is groundbreaking in that it incorporates a wide range of techniques, such as green policy, employee training, the lack of funds and energy crisis, promotion of E-banking for investigating the bank's environmental performance.

The main purpose of this study is to investigate the impact of green banking practices on Pakistan's commercial banks by their environmental performances. This research attempts to find out the underlying mechanism of the variables which affect the performance of the banks and the contribution of the factors towards the growth of the banking sector to make the environment eco-friendly. The main reason for green banking is the increasing use of energy and the cost of electricity. Government agencies and policymakers are seeking to draw more attention from businesses related to their environmental activities. The problem is that banks and other financial institutions all along are not directly affecting the environmental pollution, today there is a direct repayment to banks, due to the stipulated sanctions imposed by climate change agencies Kenya is included. Therefore, to run the business bank borrowers have to follow certain procedures and if they fail, they may result in heavy penalties, fines, and legal penalties or bankruptcy proceedings that lead to the bankruptcy of borrowed funds from banks. In year 2017, Pakistan has initiated the guidelines of green banking on the strong advice of Pakistan Environmental Protection Act (PEPA) formulated in 1997. It supports to initiate the smart banking related products to create paperless environment, increase the workers efficiency, to reduce the transactional costs, lowering the stress associated in doing business with the world wide, to create an environment friendly atmosphere where the financial activities can be performed by lower different associated risks. Javeria (2019) further suggested to explore this area based on quantitative data analysis as they assessed it qualitatively because this is still to be further explored. Bukhari (2020) say that Pakistan is one of the top threatened countries under environmental and climate change along with reduction in their resources, so adoption of green practices is must to handle the situation in the short as well as in long term. The banking sector is one of the key sectors who are responsible to create the eco-friendly and sustainable investment opportunities by adopting the suitable technologies which are effective to drive a beneficial environmental management system. It is imperative to dig out more about the adoption and policy making regarding green banking practices as this area of interest is increasing with huge attention throughout the world especially for those countries like Pakistan which are under the radar of substantial climate change. Based on the discussed literature, it is concluded that the green financing policy making practices are yet to be adopted at high scale, still there are several questions which arise about not to adopt these at mega

scale especially it is important to find the answers about the occurrence of different hurdles and constrained faced during this adoption process at micro level as well as at macro level. It creates a healthy gap which is to be filled answering the above questions from all its relevant aspects. This study covers to capture the answer of the same above mentioned question particularly in the context of Pakistan.

1.1. Purpose of the study:

To analyze the emerging role of green banking practices in Environmental performance of Pakistan's Commercial banks.

1.2. Research Questions:

1. Is there a significant impact of promotion of E-banking on the bank's environmental performance?
2. Is there a significant impact of employee training on the bank's environmental performance?
3. Is there a significant impact of lack of funds and energy crisis on the bank's environmental performance?
4. Is there significant impact of green policy on bank's environmental performance?

2. Literature Review

According to Bose and Gupta (2017), theoretical research on the adoption of green banking is lacking. According to Tu and Dung (2017), further research is required in this regard, particularly in developing economies, to examine and gain a deeper comprehension of the factors that influence the adoption of green banking. Mohammad Masukujjaman et al. claim that (2016), agricultural nations face obstructions like deficient government support, absence of useful executions, absence of mindfulness, and higher reception cost. According to Bowman (2010), policymakers and industry lack knowledge regarding the mitigation of environmental climate change and the promotion of low-carbon, emission economies as a result of the limited literature. Such absence of data prompted the exploration hole to be finished up to work with green financial reception in creating economies (Bose and Gupta 2017). While making sense of the mystery of SRI hypothesis, Newell and Lee (2012) saw SRI hypothesis as empowering the utilization of both monetary and prosperity objectives, particularly among microfinance organizations, and socially roused firms, to beat the rising ecological issues, production of occupations, and rustic and metropolitan turn of events. Chatzitheodorou et al. (2019) expressed that observationally SRI hypothesis has been viewed as a component of environmental, social, and manageability.

Newell and Lee (2012) expressed that SRI hypothesis is utilizing finance, with an emphasis on friendly aspect to accomplish both monetary and social qualities and objectives all the while (Bennett and Iqbal 2013; Sparkes, 2001). In any case, Browner, Jupi ter, Krettek, and Anderson (2014) contended that banks have little data accessible with them in their green undertaking's speculations, because of specific obstructions like absence of documentation and efficient power energy use. This might deter banks from contributing. However, client assumptions are more noteworthy today as they see different possibilities of their sum stored and anticipate more noteworthy social great. In the end, banks have a significant impact on the environment, both directly and indirectly (Meena et al.). (2013). It brought about more noteworthy tension from partners, expanding their advantage in solid climate (Shakil and Tran, 2014). In any case, banks need adequate data and information for the help of green financial reception. This has prompted a distinguishing proof of an examination hole and call for expanded research on green financial reception in the non-industrial nations (Bose and Gupta, 2017; Masud et al., 2018; Oyegunle and Weber, 2015; Shaumya and Arulrajah, 2017; Smith, 2016; Mansoor et al., 2013).

Zheng et al. (2021) chipped away at green finance and proposed the four aspects that shape brokers' originations that lead to green turn of events. Rehman et al. (2021) con nested the ecological presentation of business manages an account with the four elements of green financial practices (representatives related, tasks related, clients related, and pol frosty related). They discovered that the aforementioned practices do improve commercial banks' performance. Besides, the decrease in destructive natural exercises like cutting paper use and least utilization of coal and oil-based energies adversely affect the general financial exhibition. There are not very many known examinations accessible in the current writing on the mystery of green relying upon ecological execution in creating economies. This area, in particular, requires greater investigation and investigation in Pakistan. Therefore, the purpose of this study is to fill an empirical gap in the existing body of literature by examining the adoption of green banking practices by the selected banks. In addition, empirical research on Pakistani banks is still in its infancy, and there is a dearth of evidence regarding the precise number of banks that have already begun or initiated green banking practices. In the radiance of the above conversation, this study noticed the relationship of two principal research factors, which incorporate natural execution as the reliant variable and green financial practices as free factors. In view of the hypothetical foundation and survey of the past writing, the principal speculations have been formed as follows:

2.1. Hypothesis

The following hypothesis has been developed in line with this study:

H-1: Promotion of E-banking has a significant effect on the bank's environmental performance.

H-2: There is a significant relationship between employee training and the bank's environmental performance.

H-3: Lack of funds and energy crisis has a significant effect on the bank's environmental performance.

H-4: There is a significant effect of green policy and the bank's environmental performance.

3. Research Methodology

The deductive approach has been used in this study, which is also known as deductive reasoning and deductive logic. The objective of the study to check the relation and impacts on one factor to another. Descriptive research describes the features of variables. Positivism paradigm is also called scientific paradigm which believes that social reality could be studied independently and could be measured objectively. The target population for the study was Bank Employees in which Frontline officers, Branch Managers and Regional Managers. The data for this study was collected by 5-point likert scale survey questionnaire technique from a sample of 204 respondents (this is the final sample size retained after data cleaning, actual sample size was 230). Given the sample size $n = 230$, it was determined the result taking into account the sample size of the population as a whole, estimating at a confidence level of 95%. Researchers utilized a convenience sampling. questionnaire questions were asked from Commercial Bank Employees, Further, the questions assessed the impact of the promotion of E-banking, green policy, training of the employees, and Lack of funds and energy crisis pressure on the bank's environmental performance.

4. Data Analysis & Results

The section discussed the reliability analysis of the variables and overall instrument using Cronbach's alpha estimation using SPSS. The chapter has analyzed the hypothesis of the study using multiple regression analysis.

4.1. Demographic and Descriptive Analysis:

The following table 1 & 2 shows the result of sample descriptive and descriptive statistics from sample responses.

Table 1: Demographic Analysis (n = 204)

		Frequency	Percent
Gender	Male	168	82.4
	Female	36	17.6
Age Group	Below 25 years	24	11.8
	25-35 years	156	76.5
	35-45 years	12	5.9
	45 & above	12	5.9
Working experience in commercial banks	1 years	60	29.4
	2-5 years	72	35.3
	6-10 years	48	23.5
	Above 10 years	24	11.8
Do you think your bank follows green banking?	Yes	132	64.7
	No	72	35.3
Have you ever had attended green training?	Yes	84	41.2
	No	120	58.8
How important is green banking for you?	Highly	108	52.9
	Moderately	84	41.2
	Low/Neutral	12	5.9
Do you prefer banking with such banks that adopt green banking?	Highly	120	58.8
	Moderately	72	35.3
	Low/Neutral	12	5.9

The above table showed that among the 204 respondents, 168 were male comprising 82.4 percent of the sample population while 36 were female comprising 17.6 percent. Similarly, 24 respondents were below the age of 25 years while 156 respondents were between 25 years to 35 years of age group, whereas 12 respondents were between 35 to 45 years and last 12 respondents were 45 years or above. In terms of working experience with commercial banks, 60 respondents have 1 year of experience, 72 respondents have 2 to 5 years of experience, 48 respondents have 6 to 10 years of experience and only 24 respondents have more than 10 years of experience. In response to the question about the agreement or disagreement regarding the green policy of banks, 132 respondents have affirmed that their bank is following green banking while 72 respondents denied. In regard to the participation of employees in green banking trainings, 84 responded positively while 120 respondents did not receive or attend any green banking training. In regard to the perception of respondents about the importance of green banking, 108 have shown high degree of importance while 84 showed moderate and only 12 shown low or neutral importance. At the last, in response to the preference of adopting green banking and policies, 120 respondents were highly favored, 72 respondents moderately favored the viewpoint while 12 respondents have shown low or neutral favor towards the adoption of green banking and policies.

Table 2: Descriptive Analysis

Variable Names	Min.	Max.	Mean	S.D.	Skewness		Kurtosis	
					Stats	S.E.	Stats	S.E.
Promotion of e-Banking	3.40	5.00	4.24	0.55	-0.05	0.24	-1.33	0.47
Training of the Employees	1.00	4.50	2.54	1.15	0.21	0.24	-1.37	0.47
Green Policy	1.80	5.00	3.55	1.01	-0.37	0.24	-1.15	0.47
Lack of Funds and Energy Crises	1.60	5.00	3.66	0.97	-0.81	0.24	-0.47	0.47

Environmental Performance	2.40	5.00	3.87	0.56	-0.56	0.24	1.21	0.47
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The above table shows the description of results of each variable factor which tells the information regarding distribution of scores. Out of 204 responses obtained on 5-point Likert scale the minimum and maximum value of each variable by respondents. The mean answers of respondents regarding factors which comprises multiple statements are, Promotion of E-banking as: (Min= 3.40, Max= 5, $\mu = 4.24$ & $\sigma = 0.55$), Training of employees as (Min= 1, Max= 4.5, $\mu = 2.54$ & $\sigma = 1.15$), Green policy as (Min= 1.80, Max= 5, $\mu = 3.55$ & $\sigma = 1.01$), Lack of funds & energy crises as (Min= 1.60, Max= 5, $\mu = 3.55$ & $\sigma = 0.97$) and their impacts on Environmental Performance as (Min= 2.4, Max= 5, $\mu = 3.87$ & $\sigma = 0.56$). The average or mean answers of the factors are moderate excepting Training of employees which is in between Neutral or moderately low . Skewness tells the symmetry of distribution which changes and skewed positively and negatively up to data size. Critical value of skewness is 0 which means the distribution is extremely perfect. Similarly, kurtosis reports the Peakedness of distribution. If the distribution is perfect than the output value will be 0 which remarks as the perfectly distributed. In the above table skewness and kurtosis both have positive and negative values, which tells either the data is normally distributed or satisfying the peak or not. It doesn't need any uniformed interpretation in study .

4.2. Reliability Analysis

The following table 3 shows the reliability analysis using Cronbach's alpha estimation for the individual variables and overall instrument.

Table 3: Reliability Analysis

Variable Name	N Items	Cronbach's Alpha
Promotion of e-Banking	5	0.783
Training of the Employees	4	0.968
Green Policy	5	0.922
Lack of Funds and Energy Crisis	7	0.934
Environmental Performance	5	0.739
Overall Instrument	26	0.822

In the above table, the reliability analysis has been conducted for estimating the internal consistency of the variables and overall instrument. In this regard, suggested that alpha coefficient should be greater than 0.70 for substantial internal consistency of the variable. Therefore, the above table showed that promotion of e-banking has five measures with the reliability of 78.3 percent, whereas training of employees has four measures with the reliability of 96.8 percent. Similarly, green policy has total five measures with the internal consistency of 92.2 percent while lack of funds and energy crisis has total seven measures with the reliability of 93.4 percent and environmental performance has five measures with the internal consistency of 73.9 percent. Lastly, overall instrument has total 26 measures and the reliability of the instrument was 82.2 percent. Henceforth, the reliability analysis in table 2 showed that all individual variables and overall instrument has substantial internal consistencies.

4.3. Model Summary

The following table shows the relationship of variables and fitness of model.

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.805 ^a	0.649	0.634	0.34114

The above table 4 reports the relationship between independent variables, which are Promotion of E-banking, lack of funds and energy crises, employee trainings and green policy, while dependent variable which is Environmental Performance, have strength to fit the model. While reviewing the value of R which is 0.805 or 80.5% which tells, if the external influences remain constant the overall model is fit for the study. On the other hand, R^2 is used to determine the reliable relationship among the factors. The above R^2 is reporting all the independent variables are able to explain the dependent variable up to 0.649 or 64.9%, which shows the moderate relationship among independent and dependent variables. Lastly, adjusted R-Square tells squared value of those independent variables which are significantly positively impacting on dependent variable which is 0.634 or 63.4%.

4.4. ANOVA

Table 5: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.844	4	5.211	91.421	0.00
	Residual	11.288	199	0.057		
	Total	32.132	203			

The above table shows the overall significance and difference in responses of different groups, F-Statistics value is reported 91.42 as which supports the model for study that the data obtained and model developed is fit. Under the shadow of study, the obtained values are significant which are (P=0.000 which means $P < 0.05$), which supports all the independent variables, Promotion of E-banking, lack of funds and energy crises, employee trainings and green policy, to significantly explain their respective dependent variable Environmental performance because the F-Statistics value found significant at confidence level at 0.05 or 5%.

4.5. Multiple Regression Analysis

The following table shows the result of multiple regression analysis for hypothesis-testing based on 95 percent confidence interval.

Table 6: Multiple Regression Analysis

	Beta	S.E.	t-Stats	Sig.	VIF
(Constant)	1.495	0.545	2.743	0.007	N/A
Promotion of e-Banking	0.257	0.078	3.281	0.001	1.599
Training of the Employees	0.004	0.068	0.064	0.949	5.003
Green Policy	0.373	0.120	3.106	0.002	1.776
Lack of Funds and Energy Crises	-0.013	0.097	-0.137	0.891	4.999

Dependent Variable: Environmental Performance

The results have shown that hypothesis-1 postulating that promotion of E-banking has a significantly positive effect on environmental performance of commercial banks and it has been accepted providing that its beta coefficient was found as 0.257 and its probability value was found less than the recommended threshold of 0.05 or 5 percent. The results further showed that hypothesis-2 postulating that training of the employees has a insignificantly positive effect on environmental performance of commercial banks and it has been rejected as its beta coefficient was found as 0.004 while its statistical significance was found higher than the recommended probability level of 0.05 or 5 percent.

In addition, the results also shown that hypothesis-3 postulating that green policy has a significantly positive effect on environmental performance of commercial banks and it has been accepted as its

beta coefficient was found as 0.373 while its statistical significance was found less than 0.05 or 5 percent probability level. Lastly, hypothesis-4 postulating that lack of funds and energy crisis has an insignificantly negative effect on environmental performance of commercial banks has been rejected as its beta coefficient was found as -0.0.13 while its statistical significance was found higher than the recommended threshold of 0.05 or 5 percent probability level.

The results of multiple regression analysis also showed that overall predictability of the model has been found as 64.9 percent that is considered as moderate to high (Hair *et al.*, 2011); however, the F-statistics was found statistically significant at 5 percent providing that the model has statistically significant outcomes.

5. Conclusion and Recommendations

In this study, there were four hypotheses that have been examined and tested using quantitative cross-sectional data based on perspective and opinions of commercial banks' employees of Pakistan. Herein, the results have shown that hypothesis-1 has been accepted postulating that promotion of E-banking has significantly positive effect on environmental performance of commercial banks of Pakistan. Moreover, hypothesis-2 has postulated that training of the employees has insignificant effect on environmental performance has been rejected providing that training of the employees cannot helps to achieved higher degrees of environmental performance. Additionally, hypothesis-3 postulated that green policy has a significant effect on environmental performance has been accepted. In this connection, it has been evidently proven that green policies of the commercial banks can help to improve the overall environmental performance providing that commercial banks should enrich their policy imperatives for green practices and behavior to improve their environmental performance. Lastly, hypothesis-4 postulated that lack of funds and energy crisis has insignificant effect on environmental performance has been rejected.

The implementation of a green approach is more than simply being environmentally sustainable, as it is correlated with many advantages, such as lowering risk and bank expenses, improving the credibility of banks, and contributing to the greater good of the environment, in addition to improving the bank's reputation. The current study is a cross-sectional analysis. Therefore, future research needs to replicate the current results in longitudinal designs as this could be more suitable than in cross-sectional designs. Secondly, only quantitative research methodology is applied to the present sample. Future studies will thus consider gathering deeper data from the respondents. Besides, prospective studies have the opportunity to take into consideration the antecedent variables associated with this analysis.

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