Environmental Performance and linkage with Financial Performance: Analysis of Indian Private and Public Sector Banks

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Abstract

Reporting on environmental performance has gained universal prominence as a consequence of changes in global climate. Numerous studies have been conducted to examine association of reporting on environmental performance with financial performance by the organizations, yet results remain inconclusive. Hence, this study aims to scrutinize environmental performance reporting by Indian commercial banks using content analysis and explore its linkage with financial performance though linear regression. Secondary data used for this study was gathered for 2017-18. 20 private and 21 public sector banks were taken as sample. Results obtained evince gaining significance of reporting on environmental activities by commercial banks. Private sector banks demonstrate positive and significant linkage while no significant association was found in public sector banks between environmental and financial performance. Results emphasize on banks to embrace environmental practices and its reporting in mainstream activities to enhance profitability.

Keywords: *Commercial Banks; Environmental Performance; Environmental Performance Reporting; Financial Performance; Linear Regression*

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Introduction

Global warming is a phenomenon that is gaining significance worldwide. It results in fundamental climate changes and has an unprecedented influence on survival of human mankind and environment. Observable effect of climate change on the environment can be witnessed through increase in atmospheric CO_2 levels and global temperature, increase in sea level etc. (Warmheart, 2019). Intergovernmental Panel on Climate Change estimates an increase in temperature to 10 from 2.5 degrees Fahrenheit over the next century (Nasa, 2019). This poses a grave threat to the goal of sustainable development.

One of the major reasons for global warming and subsequent climate change is industrial revolution (Climate Change and Sustainability Committee, 2015). Organizations worldwide depend on the natural capital; having either direct or indirect impact on environment through their operations. Subsequently, environmental conservation becomes a moral obligation of the organizations to lessen depressing outcomes of changes in global climate. Considering crucial intermediary role banks play in aiding industrial sector that immensely harm the environment, banks hold a significant role in sustainable development (Nizam et al., 2019). This calls for banks to efficiently evaluate and manage environmental performance so as to have more staying power and be sustainable in the long run (First Carbon Solutions, 2014).

Extant literature reflects lack of research on examination of reporting on environmental performance and comparison of its linkage with financial performance, particularly with reference to commercial banks in India. Consequently, this study has been conducted to address this disparity and enhance understanding on the association of reporting on environmental performance with financial performance of Indian private and public sector banks. Bimha and Nhamo (2017) highlight that global reporting initiatives (GRI, 2013) standards are widely used indicators of environmental performance by financial institutions. Hence, environmental performance has been measured through global reporting initiatives G4 rules for financial sector.

Subsequent sections discuss past literature and research methodology followed by presentation and analysis of results. Final section concludes the study.

Literature Review

Negative repercussions on the environment and sustainability caused by changes in global climate have increased significance of environmental performance reporting

worldwide. A lot of research has been instigated on linkage between the two constructs in past few years. So far outcomes remain elusive (Qian, 2012). Various studies have provided contradictory results with regards to positive, negative and no linkage between environmental and financial performance. Clarkson et al. (2011) examined the outcomes of implementing proactive environmental practices and observed that improvement in environmental performance tends to improve financial resources and provides economic benefits. Contrary to positive relationship, researches provide evidence of negative relationship between environmental and financial performance (Wagner et al., 2002). According to simple economic theory, sole responsibility of business is to earn profits. Any environmental expense drains out the financial resources of the firms (Friedman, 1970). Another strand of studies indicates no significant relationship between environmental performance and financial performance (Sarumpaet, 2005). Elsayed and Paton (2004) analyzed impact of environmental performance on financial performance using static and dynamic panel data analysis on UK firms. It was observed that environmental performance has no impact on firm performance.

Research Methodology

Objective of study is to analyse reporting on environmental performance and evaluate its association with financial performance. Sample consists of 20 private and 21 public sector banks of India for financial year 2017-18. Secondary data was used for purpose of this study. Environmental performance has been selected as independent variable (Bartolacci et al., 2015) and determined through GRI G4 recommendations (Kumar and Prakash, 2019). Content analysis has been employed to compute environmental performance score (Aboagye-Otchere et al., 2019). Return on assets (ROA) and return on equity (ROE) have been employed as dependent variables.

Hypothesis Framed:

Hypothesis 1: Private sector banks exhibit no significant relation of reporting on environmental performance with ROA.

Hypothesis 2: Private sector banks exhibit no significant relation of reporting on environmental performance with ROE.

Hypothesis 3: Public sector banks exhibit no significant relation of reporting on environmental performance with ROA.

Hypothesis 4: Public sector banks exhibit no significant relation of reporting on environmental performance with ROE.

Model Analysis

Linear regression has been performed to test the hypothesis. Empirical Model used for study is:

$$ROA = \alpha + \beta_1 EP + \varepsilon \qquad (1)$$

$$ROE = \alpha + \beta_2 EP + \varepsilon \qquad (2)$$

Where,

ROA = Return on assets

ROE = Return on equity

α = Constant

$\beta 1$ = Estimate of independent variable

EP = Environmental Performance (measured through GRI G4 environmental indicators namely energy conservation, effluents & waste management, material, emissions, products & services, compliance and water conservation)

ε = Error term

Table 1: Descriptive Information

Banks	Variables	Mean	Standard Deviation	Number of Banks
Public Sector Banks	ROA	-1.17	0.84	21
	ROE	-21.80	15.39	21
	Environmental Performance Score	73.5	17.66	21
Private Sector Banks	ROA	0.87	1.15	20
	ROE	6.59	10.69	20
	Environmental Performance Score	75.7	30.43	20

Source: Author's own calculation

Table 1 shows descriptive information of variables under study. Negative mean of ROA and ROE of public sector banks specify firm measures to be adopted by banks to enhance their financial performance. Environmental performance mean value of 75.7 in private sector banks and 73.5 in public sector signify vigorous involvement of banks in environmental activities. This highlights environmental performance and its reporting is gaining significance in Indian commercial banks.

Table 2: Regression Results - Private Sector Banks

	R	R Square	Adjusted R Square	Standard Error of Estimate	Durbin-Watson
ROA	.607	.369	.332	.83631	1.903
ROE	.500	.250	.206	8.45419	1.918

Source: Author's own calculation

Table 3: Regression Results - Public Sector Banks

	R	R Square	Adjusted R Square	Standard Error of Estimate	Durbin-Watson
ROA	.099	.010	-.042	0.85929	2.037
ROE	.040	.002	-.051	15.77433	2.017

Source: Author's own calculation

Table 2 and 3 shows results of linear regression model. Durbin Watson values signify independence of residuals in the data and absence of autocorrelation (Chen, 2016). R value exhibits relation between expected and observed values of dependent variables. R square value of .369 and .250 demonstrates environmental performance to account for 36.9 percent and 25.0 percent of deviation in ROA and ROE respectively in private sector banks. While in public sector banks, environmental performance explains only 1.0 percent and 0.2 percent of deviation in ROA and ROE respectively.

Table 4: Coefficients - Private Sector Banks

		Unstandardized Coefficients		Standardized Coefficients	t	Sig. (p value)	Collinearity Statistics	
		Beta	Std. Error	Beta			Tolerance	VIF
ROA	Constant	-1.109	.658		-1.686	.110		
ROA	Environmental Performance Score	.025	.008	.607	3.152	.006	1.000	1.000
ROE	Constant	-8.557	6.648		-1.287	.215		
ROE	Environmental Performance Score	.192	.081	.500	2.383	.029	1.000	1.000

Source: Author's own calculation

Table 4 illustrates contribution of independent variable to regression model. Tolerance value (more than 0.1) (Daoud, 2017) and VIF value (less than 10) recommends no multicollinearity in data (Bartolacci et al., 2015). P value of .006 (<0.05) and .029 (<0.05) suggests significance of β coefficient in estimating ROA and ROE of private sector banks. Findings suggest growth of 2.5 percent in ROA and 19.2 percent in ROE consequent to growth of 1 percent in environmental performance score. Consequently, results do not validate hypothesis 1 and hypothesis 2 and imply positive association of environmental performance with financial performance of private sector banks (King and Lenox, 2001).

Table 5: Coefficients - Public Sector Banks

		Unstandardized Coefficients		Standardized Coefficients	t	Sig. (p value)	Collinearity Statistics	
		Beta	Std. Error	Beta			Tolerance	VIF
ROA	Constant	-.830	.821		-1.011	.325		
ROA	Environmental Performance Score	-.005	.011	-.099	-.432	.671	1.000	1.000
ROE	Constant	-19.213	15.067		-1.275	.218		
ROE	Environmental Performance Score	-.035	.200	-.040	-.176	.862	1.000	1.000

Source: Author's own calculation

On the contrary, p value more than 0.05 signifies environmental performance to be statistically inconsiderable in estimating financial performance. Consequently, results support hypothesis 3 and hypothesis 4 and propose insignificant association of environmental performance with financial performance of Indian public sector banks (Earnheart and Lizal, 2007).

Conclusion

Banks occupy significant position by accomplishing financial needs of an economy. Measuring environmental performance of banking sector is therefore imperative. Accordingly, study aims to analyse environmental performance and evaluate its association with financial performance of banks under study. It emphasizes banks are gradually getting involved in environmental practices and are reporting their environmental performance. While private sector banks' environmental performance exhibit positive and significant relationship with financial performance, public sector banks demonstrate no considerable relation between the two constructs. Study advocates participation in environmental activities by banks to generate better ROA and be profitable in the long run.

Inferences

Study makes a significant contribution to ongoing literature. Besides, it has useful inferences for both researchers and experts. Since environmental performance might result in better ROA, study promotes and motivates banks to embrace environmental activities in mainstay functioning to strengthen profitability.

Limitations and scope of future research

One of the limitations of study is that time frame is fairly short, i.e. 2017-18. Furthermore, study is based on only two financial variables. There is a scope for future research to be conducted for a longer period and incorporate more financial variables.

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